THE CASE RECORDS AND COMMENTARIES

IN

OBSTETRICS AND GYNAECOLOGY

SUBMITTED BY

DR. JOHN ODERO ONG'ECH

IN PART FULFILLMENT FOR THE DEGREE OF MASTER OF MEDICINE

IN

OBSTETRICS AND GYNAECOLOGY

OF THE

UNIVERSITY OF NAIROBI

JULY 2003

TABLE OF CONTENTS

GYNAECOLOGY SHORT CASES Page

AKNOWLEDGEMENT

I would like to thank Kenyatta National Hospital training committee for having recommended me for full sponsorship for the postgraduate training at the university of Nairobi.

I am greatly indebted to and sincerely thank all the consultants, lecturers and senior registrars of the department of Obstetrics and gynaecology for having dedicated their time to see that I acquired all the necessary knowledge and skills during my training at the university of Nairobi.

I would like to express by sincere gratitude to my supervisors Dr. M'Imunya Machoki and Weston Khisa in their efforts to see that my proposal and long commentaries were properly written by offering expert advise and guidance and also making very meaningful critique of the long commentaries and the short cases,.I am also grateful to Dr. Orero and Khama Rogo for their guidance on the Gynaecology long commentary and Dr. Kiarie for the critical review of the obstetric long commentary.

I am most grateful to all the people who helped in one way or another with the long commentaries. I would particularly like to mention Sr.Juma and Muthengi of clinic 18, Sr. Gakuo and Ong'ondo, the counselors in ward ID. Special thanks to Wanjiru Mwangi and Agneta who worked tirelessly in typing and preparing all the manuscrips and ensuring that I met all the deadlines. Mr. E.Muniu and Ngare James of Kemri also did a recommendable work in the scientific data analysis.

Finally I would like to thank all my fellow registrars and colleagues, nurses and midwives and all the support staff who made it fun and easy during my training and for the teamwork.

DEDICATION:

This book is dedicated to my father Jeremiah Ong'ech Ogola for inspiring me to take a carrier in medicine and to my brother Joseph Ochieng Ong'ech for supporting me throughout my entire education life.

DECLARATION

I declare that all the cases recorded, research work and write ups in this book are my own original work and have not been presented for a degree course in any other university.

I further declare that all the cases presented here were treated and operated on by me under supervision of the senior members of department of obstetrics and gynaecology at Kenyatta National hospital, Nairobi

Signed _____ Date 28th April 2003

DR. JOHN ODERO ONG'ECH

REGISTRAR
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATE OF SUPERVISION

This is to certify that the long commentaries in this book by Dr.J.O.Ong'ech were researched upon our guidance and supervision and that this book is submitted with our approval

1. Signed _____ Date 28/4/03

DR. M'IMUNYA MACHOKI MB.ChB, MMed (OBS-GYN)
ANDROLOGY, CONSULTANT OBSTERICIAN/GYNAECOLOGIST
AND LECTURER IN DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

2.Signed _____ Date 29/4/03

DR. WESTON W. KHISA MB.Ch.B, MMed (OBS/GYN)
SPECIALIST OBSTETRICIAN AND GYNAECOLOGIST
AT KENYATTA NATIONAL HOSPITAL,
HONORARY LECTURER, DEPARTMENT OF
OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that Dr. Ong'ech J.O managed obstetric cases nos. 14,15 and gynaecology cases nos. 2,3,15 under my supervision at Kenyatta National Hospital, Nairobi, Kenya.

Signed _____ Date 16/07/2002

PROF. OJWANG S.B.O, MD, MMED, DIP GYN.ONCOL
PROFESSOR AND CONSULTANT
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that obstetric cases Nos.1, 3,4,13 and Gynecology cases Nos 12,4,6 were managed by Dr. Ong'ech J.O under my supervision at Kenyatta National Hospital Nairobi, Kenya.

Signed _____ Date 07.07.2003

DR. OYIEKE J.B.O MB.Ch B, MMED (OBS/GYN)
SENIOR LECTURER, CONSULTANT AND CHAIRMAN
DEPARTMENT OF OBSTETRIC AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that obstetric case No.7 was management by Dr. Ong'ech J.O under my guidance and supervision at Kenyatta National Hospital

Signed _____ Date 3/7/03

DR. WANJALA S.M.H, MBChB MMED (OBS/GYN)
SENIOR LECTURER, CONSULTANT AND FORMER CHAIRMAN
DEPARTMENT OF OBSTETRIC AND GYNAECOLOGY
UNIVERSITY OF NAIROBI,

CERTIFICATION

This is to certify that gynaecology case No 11 was managed by Dr. Ongech J.O under my guidance and supervision at Kenyatta National Hospital

Signed _____ Date 14TH JUNE 2003

DR. KARANJA J.G. MBChB MMED (OBS/GYN)
SENIOR LECURER, CONSULTANT AND FORMER CHAIRMAN
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that obstetric cases Nos. 5,6,10 and Gynecology cases Nos. 1,8,9,14 were managed by Dr. Ong'ech J.O under my supervision at Kenyatta National Hospital.

Signed _____ Date 3rd July 2003

DR MUIA NDAVI, MBChB, MMED(OBS/GYN), MSC-EPID, FHBR, DLSHTM
SENIOR LECTURER AND CONSULTANT
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that obstetric cases Nos 2,8,11,12 and Gynaecology cases Nos. 5,10,13 were managed by Dr. Ong'ech J.O under my supervision at Kenyatta National hospital

Signed _____ Date 03 July 2023

DR. KOIGI KAMAU MBChB, MMED (OBS/GYN)
SENIOR LECTURER AND CONSULTANT
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

CERTIFICATION

This is to certify that gynaecology case No7 was managed by Dr. Ong'ech J.O under my supervison at Kenyatta National Hospital.

Signed _____ Date 3rd July 2003

DR. OMONDI OGUTU MBChB, MMED (OBS/GYN)
CONSULTANT AND CHIEF MEDICALL SPECIALIST,
KENYATTA NATIONAL HOSPITAL

HONORARY LECTURER
DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY
UNIVERSITY OF NAIROBI

INTRODUCTION

Kenyatta National Hospital is the largest hospital in the country. It serves as a referral, teaching and research centre. It provides facilities for undergraduates, postgraduates and paramedics training. In addition it gives basic healthcare to the people of Nairobi and its surroundings.

The department of Obstetrics and Gynaecology, which is an integral part of Kenyatta National Hospital, is under the University of Nairobi. The department provides teaching facilities for both undergraduate and postgraduate students. It also provides in-service course on voluntary surgical contraception, Norplant insertion just to mention but a few. The department is also actively involved in various research projects on reproductive health.

OBSTETRIC UNIT OF KENYATTA NATIONAL HOSPITAL

The present obstetric unit was opened in 1981 and was basically designed to cater for 2500 deliveries per year. Currently the unit handles over 5000 deliveries. This is mainly due to the rapid growth of the population of Nairobi City as a result of increased rural urban migration. Secondly, there have never been affordable hospitals within the City of Nairobi apart from Pumwani Maternity Hospital and a few nursing homes.

The unit consists of:
An outpatient serving as antenatal, postnatal, family planning and colposcopy Clinic.
The labour ward and its theatre.
The maternity unit, which comprises of three wards of 32 bed capacity each.

The labour ward has a total of 18 beds of which 10 are for the first stage of labour, 3 delivery suites and 2 in "acute room" where obstetric emergency patients are managed. The acute room is currently undergoing renovation to become intensive care room. These cases include severe pre-eclampsia, eclampsia, anaemia with congestive cardiac failure, postoperative conditions like postpartum haemorrhage with severe anaemia and dissemination intravascular coagulopathy among others. There are 2 theatres in labour ward: one fully equipped for performing caesarean sections and McDonald stitch insertions. The second theatre is not so well equipped and is currently not operational. There are 2 incubators for premature newborns before they are transferred to the Newborn unit.

The antenatal clinic (ANC) and maternity unit are wards managed on "FIRM" basis with two or more consultants and several senior registrars.

The department of paediatrics in collaboration with obstetric department manages the Newborn unit, which is located on first floor of the main tower

block. It has a total of 5 "nurseries" with a total of 36 incubators and 5 cots. The Newborn unit caters for neonatal problems both at Kenyatta National Hospital maternity unit and those referred from peripheral nursing homes and hospitals.

ANTENATAL CARE

Antenatal booking is done every Monday morning by each firm allocated for that. Any pregnant mothers can be booked so long as she can afford to pay the booking fee, but a waiver system exists for needy patients who cannot afford the fee. A significant number of unbooked patients end up in the labour ward and maternity wards. Indications for booking are as follows:

Complications of current pregnancy
- Teenage pregnancy (less than 19 years of age)
- Short primigravidae (height less than 150cm)
- Elderly primigravidae (aged over 35 years)
- Grand multiparity
- Anaemia
- Cardiac disease
- Hypertensive disease

Diabetes mellitus

Complications of previous pregnancies and deliveries
- Recurrent pregnancy loss
- Unexplained stillbirths or neonatal deaths
- Previous vacuum extraction
- Previous primary postpartum haemorrhage
- Previous caesarean section
- History of infertility in the past.
- Urinary fistula repair

The midwives interview each booked patient on past obstetric, gynecologic and medical history and measure height and weight and take blood pressure and test urine with a dipstick. The booked patients are further checked and clinically examined to determine fundal height, foetal lie, and presence and character of foetal heart tones. Antenatal profile which include full haemogram, blood group and Rhesus factor and serology for syphilis are ordered and any other tests deemed necessary. All these information is recorded on the patient's antenatal card. Numbers of subsequent visits are determined by patients request, gestational age and any complicating problems. Every morning on arrival, the mothers given health education education talk on nutrition, hygiene, early signs of labour, breast-feeding, HIV/AIDS and family planning among others. During each antenatal visit blood pressure and weight are taken and urine examined for sugar and protein. Uterine size, presentation, lie and fetal heart rate are also recorded and any other complaints are noted. Pelvic assessment is done from 36th week for all primigravidae, those with previous caesarean section due to non-recurrent condition like antepartum haemorrhage and breech presentation in a primigravida.

VOLUNTARY COUNSELLING AND TESTING FOR HIV

This is offered to all pregnant mothers; those who are negative are encouraged to continue being carefull to avoid infection. Those who are positive are told about the various available methods of preventing mother-to-child transmission of HIV. Mostly they are offered treatment with Niverapine 200mg at the onset of labour and their infants are given Niverapine syrup 2mg/kg Bwt within 72 hours after delivery. They are also encouraged not to breastfeed. There are other regimens of antiretroviral therapy to ptrevent Mother-To-Child HIV transmission such as the use of Zidovudine long course or short course, however, due to the constraints of cost, patient compliance and gestation at diagnosis, use of Nevirapine is found to be more feasible.

HOSPITAL ADMISSIONS

These fall into three categories namely: Booked patients from our antenatal clinic; Referrals from other hospitals or health centres; and those without prior antenatal care.

The last two categories constitute the majority of admissions. Booked patients report directly to labour ward admission area when they are in labour or if they develop a problem when the clinics are closed e.g. after hours or weekends. Unbooked patients are seen first in casualty before being sent to labour ward admission area. A house officer in conjunction with a senior house officer (registrar) sees the patients.

Other members of staff may be called if the need arises. Those in labour are admitted to the labour ward while those not in labour are admitted to the lying-in ward if so required or discharged home. Patients who are very ill are admitted to the acute room in labour ward and managed accordingly.

ULTRASONOGRAPHY

Ultrasonography is done any time during the gestation period to:

- Determine the gestational age of the foetus in case where the mother is not sure of the last menstrual period or dates not corresponding with fundal height.
- Rule out any foetal malformation if there has been recurrent pregnancy losses as in a diabetes mother, or when polyhydramnios is suspected.
- Confirm any multiple gestation if there is clinical suspicion.
- Localise the placenta site if there has been genital bleeding during the current pregnancy.
- As a follow up for foetal growth in mothers who are suspected to have conditions which can lead to intrauterine restriction.

AMNIOCENTESIS

Amniocentesis is the piercing of the amniotic cavity through the abdominal wall for the purpose of withdrawing a sample of fluid for examination to establish prenatal diagnosis of spina bifida, chromosomal abnormalities, metabolic errors, foetal haemolytic disease and foetal lung maturity.

This procedure is also done to mothers who had at least two caesarean sections, who booked at our antenatal clinic on the second half of pregnancy, or those with prolonged pregnancy to assess foetal lung maturity.

The procedure of amniocentesis is as follows:
The patient is informed of the purpose of the procedure. The bladder is emptied first, the patient lies on her back. Lie of the foetus is confirmed and foetal heart rate also confirmed. The lower abdominal wall is cleaned and presenting parts displaced from the pelvis. An 18-gauge hypodermic needle connected to a 10cc syringe is introduced and approximately 5-10mls of amniotic fluid is drawn. The amniotic fluid is examined for colour and any debris present and then sent to the laboratory for further tests depending on the indication of amniocentesis. After the procedure the mother is advised to lie on the left side and foetal heart rate is monitored for a further period of two hours at half hourly interval. Amniocentesis is not without risk, premature rupture of membranes, cord, placental injuries or introduction of infection in premature labour. For rhesus negative mothers prophylactic anti-D immune globulin is given.

MANAGEMENT OF LABOUR
Booked patients are admitted to labour ward directly from home or through antenatal clinic, unlike the unbooked patients who have to pass through casualty. Majority of patients admitted to Kenyatta National Hospital labour ward and maternity wards are unbooked. In labour ward the resident house officer does preliminary examination where fresh history is taken from all patients and physical examination done. Urine is also examined for presence of sugar, protein or ketones. The midwife shaves the vulva if the patient is to undergo any surgery. The vulvovaginal area is cleaned with swabs dipped in antiseptic solution (savlon) and vaginal examination is carried out. All the information is recorded on a partogram. A partogram is a record of information on the progress of labour. It includes information in graphical form of time, parity, gravidity, pulse, blood pressure, temperature, sugar, ketones, protein, duration, strength and frequency of uterine contractions, foetal heart rate and station, cervical dilation, state of membranes, colour of liquor and degree of moulding. Some of these observations are done at half hourly intervals.

MANAGEMENT OF FIRST STAGE OF LABOUR
The patient is reviewed by the senior house officer and further information plotted on the partogram. Subsequent review is done after 4 hours or as need may arise. Artificial rupture of membranes is done when the cervix is at least 3 cm dilated unless there are contraindications. Analgesia is the form of pethidine or tramadol is given in early labour. Patients are advised to lie on their left side while labouring and empty their bladder as frequently as possible. Those for elective induction of labour have enema done early in the morning and have a ripe cervix before artificial rupture of membranes is done and infusion with oxytocin started intravenously. All patients on induction of labour or trial of scar or augmentation must have blood grouping and cross matching in case of abdominal delivery is resorted to because of failure of

progress or foetal distress develops. Augmentation with oxytocin is usually started after membranes have been ruptured. This is so that occurence of amniotic fluid embolism are minimized.

MANAGEMENT OF SECOND STAGE OF LABOUR

Patients are transferred to second stage when the cervix is fully dilated and the descent is 0/5. Midwives handle all uncomplicated vertex deliveries while senior house officer conduct others. In second stage the attending midwife prepares a delivery tray, scrubs up and puts on a gown and gloves. The patient is delivered in supine position. The perineum is cleaned and draped. Vaginal examination is done to confirm the foetal head descent. The patient is encouraged to bear down with each uterine contraction and relax in between. In all cases delivery should be controlled so as to prevent forceful and sudden expulsion or extraction of the baby.

Episiotomy is indicated for most primigravidae with tight perineum, premature or breech deliveries. It is done at the height of maximal uterine contractions with or without infiltrating local anaesthetic. The commonly used type of episiotomy is the mediolateral using Mayo pair of scissors. Delivery is allowed to proceed slowly or pressure is applied from the coccyx region upwards (modified Ritgen maneouvre) will extend the head at the proper time and thereby protect the perineum from tearing. As soon as the head is delivered nuchal cord is looked for and loosened if found and baby's face is wiped of mucus. With the next contraction the anterior shoulder is delivered and thereafter the rest of the body.

The baby is then shown to the mother to confirm what sex it is. Ergometrine is given intramuscularly upon delivery of the anterior shoulder or sometimes after delivery of the baby. The baby is cleaned. Minimal resuscitation is done. The baby is kept warm by radiant heat and Apgar score awarded. The baby is weighed, identification tag applied to the leg or hand.

MANAGEMENT OF THIRD STAGE OF LABOUR

This is the time interval from delivery of the baby to the complete expulsion of the placenta and membranes. The placenta is delivered by controlled cord traction. The delivery of placenta is normally complete in half an hour after delivery of the baby.

The signs of placental separation are; lengthening of the cord, sudden gush of blood, patient may feel new contractions and finally the uterus rises in the abdomen and contracts so that it feels hard. Upon expulsion the placenta is examined for completeness.

Active management of third stage is practiced and consists of controlled cord traction with the first contraction, early cord clamping and giving oxytocic drugs (ergometrine or syntometrine) when indicated to enhance uterine contraction.

REPAIR OF EPISIOTOMY

The repair of episiotomy is done under local anaesthesia. Chromic catgut No 0 is usually used. The repair is started about 1.5cm above the apex of the incision on the posterior vaginal wall to close both underlying tissue and the vaginal mucosa up to the hymenal ring. The first layer is done using continuous suture and muscle layer being approximated with interrupted suture. The skin is closed using interrupted sutures with knot buried starting from the lateral edge.

RECOVERY PERIOD

There is a special room with 4 beds for recovery. Every mother is encouraged first to pass urine. They stay in the room for 1 to 2 hours. While in the recovery room blood pressure, temperature and pulse are checked. They are also provided with a pad, which is used to assess lochia loss. When the foregoing observations are satisfactory the mother is discharged to the postnatal wards.

OBSTETRIC OPERATIONS

The common obstetric operation performed in our unit include:

- Artificial rupture of membranes
- Manual removal of retained placenta
- Repair of episiotomy
- Vacuum extraction
- Postpartum minilaparotomy tubal ligation
- McDonald stitch insertion for those with incompetent cervix
- Caesarean section (lower segment and classical)

Destructive operations and forceps deliveries are rarely performed in our hospital.

VACUUM EXTRACTION

This procedure is carried in the delivery room. It is usually done without any anaesthesia except local infiltration at the site of episiotomy. The prerequisite for the vacuum extraction include a fully dilated cervix and head enagagement (0/5 or 1/5).

Indications for using the vacuum extraction

- Delay in second stage. The head has been on the pelvic floor and impalpable abdominally for two hours or one hour in primigravida or multigravida respectively.
- Maternal physical distress. To shorten labour because of physical distress or deterioration, in patient with complications such as heart disease, hypertension, oesophageal varices and pre-eclampsia.
- Foetal distress and prolapsed cord and a fully dilated cervix. If there is an indication for delivery because of foetal distress or prolapsed cord when the head is still high as in the second twin.
- Trial of vacuum. When the delay is thought to be due to borderline pelvis or mild disproportion.

CAESAREAN SECTION

There are two types of caesarean sections performed in our unit
the lower segment caesarean section
the classical (vertical) caesarean section

Classical or vertical is indicated only in cases where there is poorly formed lower segment, with a premature baby or transverse lie with arm prolapse, in some cases of placenta praevia with anterior implantation,if there is a myoma occupying the lower segment and rupture of membranes where the foetus is already impacted. Also when the lower segment is inaccessible because of adhesions from previous surgeries. The two operations can be done as an emergency or electively.

PRE-OPERATIVE PREPARATION

Consent is obtained from the patient and contemplated procedures explained. Two units of blood are requested for before surgery in the following situation: active bleeding, pre-eclampsia, coagulopathy and previous caesarean sections. Otherwise only ABO/Rh typing is required as the need for transfusion is usually unlikely. Pre-anaesthetic medication comprising 0.6mg of atropine or 0.4mg hyosine hydrobromide for cardiac patients is given half an hour before surgery. Surgical preparation like shaving or enema is the same as for other abdominal operations. For any elective surgery complete haemogram and blood urea nitrogen and electrolytes are a necessary prerequisite.

TRANSVERSE LOWER UTERINE SEGMENT CAESAREAN SECTION

In theatre the patient is put in Trendelenburg's position at an angle of 25-30 degrees. This helps in disengaging the foetal head out, thereby improving placental perfusion. The bladder is aseptically emptied by catheter and left in place until the end of the operation. A drip is fixed with a large bore needle. Dextrose in water of 5% is usually preferred. The surgeon, the assistant and the nurse scrub, glove and gown themselves. The abdomen is cleaned with hibitane solution and spirit and then draped. Anaesthesia is induced with thiopentone sodium 3-3.5mg per kilogram body weight and suxamethonium 1.5mg per kilogram body weight. Maintenance of anaesthesia is by nitrous oxide, halothane and oxygen through endotracheal tube. The abdomen is opened through a subumbilical midline incision 1cm below umbilicus to 2cm above the pubic symphysis. Using the sterile knife the incision is deepened to expose the rectus sheath, which is opened using the Mayo scissors. Rectus sheath is separated and peritoneum exposed. Peritoneum is opened from the upper third. This avoids the possible damage to the bladder, which in the course of a long labour is displaced unexpectedly high. Two large taped gauze swabs are used to pack the lateral recesses. The tapes are attached to small artery forceps. Bladder is retracted downwards using Doyen retractor and the loose peritoneum covering the lower segment is lifted up with dissecting forceps, snipped with scissors and incision extended to both sides. The lower peritoneum flap is lifted up with forceps and by finger pressure with the other hand it is stripped downwards for about 5cm together with the incorporated bladder. The seperation must

extend to the sides also. A small transverse incision is made in the lower segment with scalpel till amniotic membrane is visualized. The incision is enlarged laterally with bandage scissors. Care is taken not to injure the baby. The level of the incision should be as near as practicable the widest diameter of the foetal head. Two fingers are placed below the head and with the fundal pressure from the assistant the baby's head is delivered and then the rest of the body. The umbilical cord is clamped and divided and placenta delivered manually by placing a whole hand in the uterine cavity and gently freeing the placenta from its bed. At this stage the anaesthetist may inject 10 units of syntocinon or 0.5 mg ergometrine intravenously. Holding the edges with non-traumatic clamps such as Green-Armitage clamps controls bleeding from the cut edges. The inside of the uterus is cleaned with mounted swab on a sponge holder forceps to remove any remnants of membrane and further stimulate contraction and retraction of the uterus. An atraumatic suture of No. 2 chromic catgut with a half-circle round-bodied needle is used to repair the uterus. The first stitch is inserted at the lateral angle of the uterine incision on the far side from the operator. The repair is done by continuous stitch and attempt is made not to include the uterine decidua. The second layer is repaired with the same stitch in the same fashion by is aimed at burying the first layer. Finally, the peritoneal flaps are closed by continuous stitch using No. 1 chromic catgut. Abdominal packs are removed. The peritoneal cavity is mopped up of any blood, blood clots and meconium before closure of the abdominal wall. The pelvic viscera are inspected at this stage for any abnormality. The swabs and instruments used are counted if reported correct the abdomen is close up in three layers. Chromic catgut No. 1 is used for peritoneum and No. 2 for the rectus sheath. The skin is closed with nylon No. 0 or 1/0 using vertical mattress technique.

The catheter is removed and the urine checked for any blood, patient is extubated and vital signs taken. Using 1.2mg of atropine sulphate and 2.5mg of neostigmine both given through the intravenous route reverses general anaesthesia.

CLASSICAL CAESAREAN SECTION

The pre-operative preparation and abdominal incision is the same as in lower uterine segment caesarean section. After opening the abdomen both recesses are packed with warm moist gauze. Uterus is inspected for any dextrorotation. Always there exists a certain degree of torsion of the uterus (most commonly to the right). The classical uterine incision is a longitudinal one down the midline of the anterior wall of the uterus. The length of the incision should be 12-15cm in length and should extend to the uterovesical reflection of peritoneum. The membranes are then ruptured and baby extracted best accomplished by grasping the legs rather than the head. The umbilical cord is clamped and then divided and is handed to the assistant for further resuscitation. At this stage the anaesthetist may inject 10 units of oxytocin or 0.5mg of ergometrine intravenously. Placenta is manually removed by sweeping movements of the fingers within the uterus. Clamping with Green-Armitage clamps controls the bleeding sinuses from the uterine cut surface. The uterus is cleaned of blood and membranes then closed up in

three layers. A continuous layer of chromic catgut No. 2 is used for the innermost layer. For the second layer interrupted chromic catgut No. 2 can be used. Finally another continuous stitch of No. 1 chromic catgut is used for the peritoneum together with most superficial muscle fibres. The subsequent procedures are like for lower uterine segment caesarean section.

POST-OPERATIVE CARE

The post-operative care is as follows:

Observation: Blood pressure, respiration and pulse are recorded half hourly till patient
is fully awake then four hourly.

Pain relief: Pethidine 100mg is given eight hourly for one to two days through intramuscular route.

Intravenous fluids: Three litres of Ringer's lactate alternating with 5% dextrose fluids
are given intravenously over a twenty-four hour period.

Antibiotics: Crystalline penicillin 2 MU and gentamycin 80mg are given intravenously
six hourly and eight hourly respectively for one to two days.

As soon as bowel sounds are back and adequate, the patient is started on oral medication and allowed sips of water. The patient is encouraged to be ambulant as early as possible. Vital signs are checked daily. Lochia is also examined daily in terms of colour, odour and quantity.

Uterine involution is checked on a daily basis for satisfactory involution. Stitches are removed on the seventh post-operative day and patient allowed to go home to be seen again six weeks later in the postnatal clinic with summary case note. All mothers are advised to take their children for immunization as early as possible.

POSTNATAL CLINIC

This clinic operates on every Friday morning. The mothers are seen together with their babies. Only mothers who had complications are booked. The main purpose for this clinic is for follow up and counselling on family planning. The visit is usually six weeks or 42 days after delivery. Both mother and infant have thorough physical examination. The mother is asked about breastfeeding, return of menstrual period, sexual relations, family planning and any other question thought relevant. Need for immunization of the child is once again re-emphasized.

GYNAECOLOGICAL UNIT OF KENYATTA NATIONAL HOSPITAL

The Gynaecological unit at Kenyatta National Hospital consists of: -

- gynaecology outpatient clinic
- the family planning clinic

- gynaecology wards 1B and 1D
- gynaecology theatres, emergency and cold, laparascopy and minilaparotomy and cobalt unit and caesium theatre.

GYNAECOLOGY OUTPATIENT CLINIC

The gynaecology outpatient clinic (GOPC) comprises of three major areas namely gynaecology proper, colposcopy and oncology clinics. The gynaecology proper is conducted on Tuesday, Wednesday and Thursday afternoons. The patients are booked on these specified days. Majority of the patients are those with infertility followed by fibroids. Diagnostic work-up is initiated on the very day of the first visit. History and physical examination are also included during this first visit together with Papanicolous smear for all women. From the clinic patients can be admitted to cold gynaecology wards or 1B for definitive procedure or surgery. There are many patients on the waiting list for elective surgery.

COLPOSCOPY CLINIC

This is one of the specialised clinics, which receive referred patients with abnormal Papanicolous smears. Here another smear may be taken as need be. Colposcopy directed biopsies are also taken in this clinic. Treatment by loop excision is another functions of this clinic. This clinic is on Friday mornings.

FAMILY PLANNING CLINICS

These clinics, like others, operate on a daily basis from Monday to Friday. The family planning methods in common use are administered by the nurses while other methods like norplant insertion and voluntary surgical sterilization are offered by the registrar on duty. The clients are thoroughly counseled on all contraceptive methods available before deciding on which to choose. Norplant removal is also a function of this clinic. Dye/Laparoscopy on infertile patients referred from gynaecology outpatient clinic is undertaken in this clinic. The clinic also provides education on identification of fertile days for couples who are infertile.

GYNAECOLOGY WARDS

The wards are divided into "cold" gynaecology ward and emergency or acute gynaecology ward. The gynaecology ward (1B) has a total bed capacity of about thirty two (32) beds divided among 3 firms. As had been said earlier patients are admitted directly from gynaecology clinic to "cold" gynaecology ward.

The acute gynaecology ward manages emergency cases as well as women with cancer of the cervix. Though it has bed capacity for sixty patients it will be found that there are about on hundred and twenty patients at any given time. It is run by firm on weekly basis. Acute gynaecology ward receives most of its patients from casualty department, outpatient gynaecology clinic and family

planning clinic. Majority of cases handled in ward 1D are abortions (all kinds), pelvic inflammatory diseases (PID), pelvic abscesses, cancer of the cervix, lost intrauterine contraceptive devices etc.

GYNAECOLOGICAL OPERATIONS

A theatre is reserved in main theatre for emergency gynaecological operations. Laparotomies for ectopic pregnancies (ruptured and non-ruptured) pelvic abscesses, ovarian cyst and other tubo-ovarian masses are done here. Smaller procedures like diagnostic dilatation and curettage of the uterus, removal of misplaced contraceptive devices and suction curettage are also performed.

Elective operations are done on Firm basis, Firm II on Mondays and Firms I and III on Thursdays. The operations are done from 8.00 a.m to 5.00 p.m. The operations are performed under general anaesthesia .

There is also the cobalt unit and the caesium theatre, which used to handle amongst other treatment of cancer of the cervix through external radiation with cobalt 60 and intracavitary radiation with caesium 137. This is situated in the old hospital.

Intravenous sodium thiopentone and succinylochline are used for induction of anaesthesia.
Nitrous oxide, oxygen and halothane provide maintenance anaesthesia.
Curare is given intermittently for muscle relaxation
Atropine and neostigmine are used for reversal.
Some operations such as Vesico-vaginal fistulae may be are carried out under spinal anaethesia.

PRE-OPERATIVE PREPARATION

Patients for emergency laparatomies are prepared for theatre straight away in ward 1D. The abdomen is cleaned and shaved, stomach contents are aspirated if the patient has fed just before admission. Pre-medication is provided by 0.6 mg of intramuscular atropine half an hour before theatre. Blood is urgently cross-matched and an intravenous infusion of dextrose solution or dextrosaline started.

For elective operations, basic and special investigations are done and the date of surgery fixed. The nature and purpose of the operation is explained to the patient after which she gives an informed consent. Blood is reqested and reserved for the day of the operation. The patient starves from midnight to the morning of the day of operation. The skin over the area of operation is cleaned and shaved. Pre-medication is provided by atropine at a dosage of 0.6mg and pethidine at 50 - 100 mg both intra-muscularly half an hour before wheeling the patient to theatre.

POST OPERATIVE MANAGEMENT

After the operation general anaesthesia is reversed and the patient wheeled to the recovery room where quarter-hourly observation of blood pressure, pulse rate, respiratory rate and temperature are taken. She is then transferred to the ward where observations are done four hourly.

Most laparotomy patients are kept in the ward for seven days. For the first 24 hours the patients are maintained on intravenous fluids. Oral fluids are given when bowel sounds are established. Blood transfusion is given when indicated. Prophylactic antibiotics are given routinely. A check of the hemoglobin level is determined on the third postoperative day.

Before discharge the patient is informed about the findings at operations and a discharge summary is issued. Patients are reviewed in the gynaecology clinic after six weeks or earlier when there is an indication. Total abdominal hysterectomy is the commonest cold gynaecological operation. It is described below.

TOTAL ABDOMINAL HYSTERECTOMY

General anaesthetic induction and maintenance is done as described above. A vulvo-vaginal toilet is performed with antiseptic lotion. Under aseptic conditions the patient is catheterised and the catheter left in situ to maintain continuous bladder drainage during the operation. Pelvic examination under anaesthesia is performed and pathological and normal findings noted. The vagina is painted with methylene blue dye.

The abdomen is thoroughly cleaned with chlorhexidine and painted with iodine and then draped with sterile towels. As described above under caesarean section, the abdomen is opened in layers. The round ligaments are identified and beginning on either side using straight long artery forceps the round ligament is clamped and divided between the two forceps.

The lateral stump is transfixed with no. 0 or no. 1 chromic catgut. This procedure opens the anterior leaf of the broad ligament, which is pushed forwards through this opening with the surgeon's finger and incised with scissors. The same is done for the opposite side. The next step depends on whether the tube and the ovary are to be preserved or removed. If they are to be preserved, the tube and the ovarian ligament are double clamped en masse and cut using a scalpel. The distal clamp holds the ovarian vessels as they approach the anastomosis with the uterine vessels.

This stump is ligated using transfixed chromic catgut no. 1. The same is done for the opposite side. If the tube and the ovary are to be removed with the uterus the infundibulopelvic portion of the broad ligament is double clamped with long curved artery forceps with the tips reaching the open window in the broad ligament. The broad ligament together with the ovarian vessels are divided between the clamps and ligated using chromic catgut no.1. The same is done for the opposite side.

The reflection of the bladder peritoneum onto the uterus is then freed by extending the incision in the anterior leaf of the broad ligament towards the midline. The bladder is thus separated from the lower uterine segment, the cervix and the vagina by careful sharp and blunt dissection of the fascial fibres beneath the bladder wall. Usually the bladder can be displaced into the lower pelvis quite easily, but if it is adherent, it is surgically released by dissection.

In the next step, the posterior leaf of the broad ligament on either side is cut parallel with the side of the uterus to better demonstrate and skeletonise the uterine vessels between the leaves of the broad ligament for clamping. These are double clamped and cut using a scalpel and freed from the uterus by extending the incision around the tip of the distal clamp. This enables adequate ligation. Care should be taken to avoid freeing the tissue beyond the tip of the clamp, as this could permit bleeding from the collateral vessels that are not included in the clamp. Before clamping and cutting the uterine vessels it is always advisable to palpate the internal os and pass medially through the base of the broad ligament to the trigone of the bladder. The uterine vessels are ligated with chromic catgut no. 2.

The uterus is retracted forward and upward to demonstrate and stretch the uterosacral ligaments posteriorly. A transverse incision is made though the uterine reflection of the cul-de-sac peritoneum between the attachments of the two-uterosacral ligaments. The peritoneum is then incised with the scalpel and reflected, mobilising it past the cervix to the posterior vaginal fornix. Usually this procedure is associated with haemorrhage as a proper loose areolar plane is entered. Care is taken not to dissect extensively laterally where the haemorrhoidal vessels are inserted into the rectum. Each uterosacral ligament is double clamped, cut and ligated with no. 1 chromic catgut suture. Here, particular care is exercised to avoid the pelvic portion of the ureter as it courses along the base of the broad ligament. Next the cardinal ligaments on either side of the uterus are clamped, cut and ligated.

More commonly the uterus is removed by the open technique, in which the anterior vaginal fornix is opened initially with the scalpel and the vagina is circumcised by sharp knife dissection or scissors. As the anterior posterior and lateral angles of the vagina are opened straight artery forceps are used to secure the vaginal margins. These margins are then closed using a series of figure or eight futures. Particular care is taken when tying the lateral angles to ensure that the descending vaginal branches of the uterine vessels are securely ligated.

Suspension of the vaginal vault is done by tying the peritonealisation suture to the lateral and mid sutures of the vault. Peritonealisation is accomplished by means of a continuous No. 1 chromic catgut suture that first pierces the vaginal walls near the midline and passes through the posterior leaf of the broad ligament, the free margin of the uterosacral ligament, then through the infundibulopelvic ligament, the free margin of round ligament and the anterior bladder peritoneum. The suture is tied at the centre.

The same is done for the opposite side with the suture being tied at the midline and lateral angles. If the ovaries have been preserved an alternative suspension may be used in which the tip of the broad ligament is loosened separately with a purse string of no. 2/0 chromic catgut and the free margin of the pedicle is high against the pelvic wall and are not anchored to the vaginal vault. This is advised in order to avoid subsequent dyspareunia and to avoid stretching of the ovarian vessels with possible thrombosis, ischaemia and cystic changes of the ovary. After this, abdominal viscera are well inspected. If hemostasis has been achieved and instruments and swabs counts are correct, the abdomen is closed in anatomical layers. The post-operative management is the same as described earlier.

COUNSELLING CLINICS

There are three such clinics in the hospital, which offer counselling to obstetrics and gynaecology patients. These are the patient support centre, GOPC, teenage clinic and the Nairobi Hospice.

THE PATIENT SUPPORT CENTRE

This is situated in the old hospital buildings where patients regularly attend from all the departments of the hospital. Sometimes the counsellors are called to the wards to counsel those patients who cannot go there. The counsellors consist of psychiatrists, sociologists, psychologists and trained nurses. Mostly, they deal with HIV counselling, puerperal psychosis patients and those patients who are poor and neglected by relatives. They counsel, treat and even assist patients find their way home.

THE HIGH RISK CLINIC (HRC)

This clinic is situated on the ground floor next to the maternity wards. It deals with young single mothers who have had an abortion, those who have delivered babies and even those who do not want to bear up their children. The counsellors are also trained nurses, sociologists and consultant obstetrician/gynaecologists.

They counsel their clients, treat them for any illness they may have with assistance from the obstetric and gynaecology wards, and also provide them with family planning and STD management services. The patients come from other institutions or from the obstetrics and gynaecology wards.

THE NAIROBI HOSPICE

Workers here also offer counselling care in addition to management of terminal disease. They also offer narcortic analgesia and encourage home based care for such patients instead of hospital care. Most of their patients have cancer of the cervix.

THE HOSPITAL CHAPEL

This provides spiritual nourishment to those patients who are in need. It is situated on level 2 of the tower block.

THE MOTHER'S HOSTEL

This accommodates mothers with babies in nursery. When they get sick, they are treated from the wards where they were initially admitted.

LABORATORY AND RESEARCH

It would be worthwhile to mention that the department of obstetrics and gynaecology apart from teaching, it is involved in active research and provides the complex laboratory services like semenalysis, cytology, chromosomal studies, hormonal assays etc.

OBSTETRIC CASE NO. 1

PRE-ECLAMPSIA AT 35 WEEKS, CONSERVATIVE MANAGEMENT UPTO 38 WEEKS - LIVE BABY

Name	C. W. M	LMP	14/6/00
Age	20 Years	EDD	21/3/01
IP NO.	0716709	GBD	35 + Weeks
Parity	0 + 0	DOA	14/2/01
		DOD	8/3/01

PRESENTING COMPLAINTS

C.W.M was admitted through Kenyatta National Hospital antenatal clinic 18 with one week's history of marked leg swelling and rapid weight gain. Her blood pressure at admission was 160/105 mmHg. Her urinary protein was 2+.

HISTORY OF PRESENTING COMPLAINTS

She had been booked at the antenatal clinic at 34 weeks in Kenyatta National Hospital. At booking clinic, she was noted to have a blood pressure of 160/90 mmHg, proteinuria of 1+, her weight was 85.5kg. A repeat blood pressure after 6 hours of rest at the clinic was 160/100 mmHg and she was started on aldomet and phenobarbitone and was advised on bed-rest. On revisit one week later the blood pressure was 160/105 mmHg, weight was 89kg, proteinuria 2+ and moderate oedema was noted, at this point she was admitted for control of blood pressure and later delivery.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was para 0 + 0, her last menstrual period had been on 14/6/2000, so her expected date of delivery was 21/3/01 and at the time of admission she was at 35+ weeks. Her menarch was at 14 years of age. Her cycles were regular every 28 days, lasting 4 days and associated with mild dysmenorrhoea. She had not used any contraceptives. She had been attending antenatal clinic at Kenyatta National Hospital from 34 weeks. Blood pressure was noted to be high on her first visit. No earlier blood pressure records were available. Antenatal profile done showed that her blood group was "A" positive, haemoglobin was 13g/dl and VDRL was negative.

PAST MEDICAL AND SURGICAL HISTORY

She had no history of high blood pressure before conception.

FAMILY AND SOCIAL HISTORY

She was a married lady who lived as housewife with the husband at Umoja. The husband is a small-scale businessman. Her mother was hypertensive and there was no other family history of chronic illnesses like chronic renal

disease or diabetes mellitus. No family history of multiple pregnancy. She neither smoked nor took alcohol.

GENERAL EXAMINATION

She was a young lady in good general condition, not pale, jaundiced, no lymphadenophy. She had bilateral pitting leg edema of moderate degree. Her vital signs were;
Blood pressure of 160/105 mmhg, Temp of 36.4C, Respiratory rate of 20 per minute, pulse rate of 80 per minute regular and good volume.

CARDIOVASCUALR SYSTEM	-	Normal
RESPIRATORY SYSTEM	-	Normal
CENTRAL NERVOUS SYSTEMS	-	Normal

ABDOMINAL EXAMINATION

The abdominal was uniformly distended. There was no surgical scar and no striae gravidarum. The fundal height corresponded to 36 weeks gestation, the foetal lie was longitudinal and presentation was cephalic. The foetal heart rate was 140/minute, regular. There were no areas of tenderness or enlargement of liver, spleen and kidneys. The head was free at the brim.

The breasts were normal.

PELVIC EXAMINATION

This was not done, as there was no indication.

DIAGNOSIS

Primigravida with moderate pre-eclampsia at 35 weeks gestation.

MANAGEMENT

She was planned for induction at 38 weeks. Amniocentesis was done at 37 completed weeks and liquor was positive for surfactant meaning the foetus was mature. A bishop score was then done and it was 5/10. prostaglandin E2 3mg p was inserted into the posterior formix of the vagina twice at 8 hours interval, then artificial rapture of membranes and labour augmented with syntocinon.

She progressed well and delivered a live female infant, 2850 grams who scored 9/1, 10/5. placenta was normal. Estimated blood loss was 200mls. Blood pressure immediately after delivery was 140/100 mmhg, but was well controlled in 5 days and both mother and child were discharged home. She was to be seen at the postnatal clinic in 2 weeks.

POSTNATAL FOLLOW UP

She failed to turn up for postnatal follow up.

DISCUSSION

C. W. M presented here is a primigravida, 20 years old who presented with pre-clampsia at 35 weeks and managed conservatively and at 38 weeks was successfully induced with outcome of live baby.

Hypertensive disorders in pregnancy broadly fall into 3 major categories;

(i) Pre-existing (chronic) hypertension (essential hypertension, secondary to chronic renal disorders e.g. pyelonephritis and renal artery stenosis, coarctation of the aorta, SLE and pheochromocytoma),

(ii) Pregnancy induced hypertension - PIH (Transient hypertension which is late onset hypertension without proteinuria or pathological oedema, pre-eclampsia which is hypertension with proteinuria and/or oedema after 20 weeks of pregnancy but may be earlier in vesicular mole and eclampsia which is pre-eclampsia + convulsions).

(iii) Superimposed pre-eclampsia or eclampsia - which is the development of pre-eclampsia or eclampsia in pre-existing hypertension detected by a further increase of 30 mmhg or more in systolic blood pressure or 15 mmhg or more diastolic blood pressure 1, 2).

Pre-eclampsia is a multi organ disease process that involves more than elevated blood pressure with generalized vasospasms (1, 2, 3, 4). Approximately 5 - 10% of pregnancies are complicated by hypertension. Hypertensive disorders are the most common medical complications of pregnancy and are associated with significant maternal, fetal and neonatal morbidity and mortality. Pre-eclampsia accounts for 70% of hypertension in pregnancy and chronic hypertension accounts for most of the remaining 30% (5).

The incidence of pre-eclampsia varies widely. In Kenya, Mati (1975) found that hypertension complicated 1.5-9% of all pregnancies. Recent finding at Kenyatta National Hospital (KNH) over year period (1999-2000) noted the incidence of eclampsia to be 10 per 1000 deliveries (1).

Pre-eclampsia is classified as mild and severe. Criteria for diagnosis of severe form includes; blood pressure > 160/110, oliguria (<500ml/24h), proteinuria of 5g/4 hrs (3-4 + on dipstick), thrombocytopenia (100,000/ul), pulmonary oedema, Hepatocellular dysfunction (elevated alanine and aspartate aminotransterases) elevated serum creatine and symptoms suggesting significant end organ involvement: visual disturbances, epigastric or right

upper quadrant pain. In mild pre-eclampsia,the blood pressure is lower than the above, there is no oliguria, proteinuria is less than 3+, there are no visual or cerebral disturbances or epigastric pain or thrombocytopenia or pulmonary oedema. The patient presented had moderate pre-eclampsia.

A large number of predisposing factors or associated factors has been reported in pre-eclampsia which includes; nuliparity, family history of hypertension, previous pre-eclampsia, pre-existing hypertension, chronic renal disease, type1 diabetes mellitus, hydatid form mole, multiple pregnancy, foetal haemolytic disease, obesity, genetic factors like angiotensinogen T235 which can be homozygous or heterozygous, low socio-economic status and climatic variations (2, 3). The predisposing factors in the patient presented is parity (she was primigravida).

The etiology of pre-eclampsia is unknown. Some theories associated with its etiology are:-

The abnormal trophoblast invasion theory: in early pregnancy, the cytotrophoblasts invade the decidual arteries making their musculature more flaccid and dilated. During the second trimester of normal pregnancy, a second wave of invasion occurs into the myometrical segments of the spiral arteries. If the second invasion does not occur, pre-eclampsia occurs. If the intramyometrial trophoblast invasion occurred, the flaccid transformed spiral arteries would reduce resistance to blood floor to the placenta and since they lack smooth muscle, are less likely to respond to vaso-active compounds(2, 7).

The prostaglandins theory:- prostacylcin is a vasodilatation and an inhibitor for platelets aggregation while thromboxane is a vasoconstrictor and platelets aggregator. In PIH, there is imbalance towards an increase in thromboxane production (2, 12, 13).

The homeostatic changes theory; pre-eclampsia is associated with vasospasm, activation of the coagulation system and abnormal hemostatis (2). Endothelial injury, increased platelet activation with platelet consumption in the microvasculature and excessive clotting activity has been noted (2). High fibronectin, low antithrombin III and increased beta-thromboglobulin has been reported (2, 5, 12, 13, 14).

Genetic factors theory; family history of pre-eclampsia increases the risk of pre-eclmapsia but the genetic investigations have been inconclusive (2). Some of the genetics mutations studied include angiotensinogen - T235, prothrombine inherited deficiencies in antithrombin III, protein S and C.

The renin-angiosystem theory: It was found that the vascular sensitivity to angiotension II is reduced in normal pregnancy while it is increased in PIH (2).

Changes in endothelium - derived factors theory:- reduction in endothelium - derived substances and endothelium derived relaxing factors like nitric oxide.

Immunological factors theory: Stimulation of the maternal immune system by the early conceptus is essential for production of the blocking factors that prevent rejection of the foetus and placenta. Hypo immune response results in damage of the placenta and subsequent pre-eclampsia. Pre-eclampsia is less common in previously stimulated immunity conditions as in previous pregnancy, previous blood transfusion, consanguineous marriages and increased maternal anti-HLA (human leucocyte antigen) antibodies.

Other theories: includes lipid peroxides, free radicals, antioxidants and diatery deficiencies or excesses.

The diagnosis of pregnancy-induced hypertension is made when there is sustained blood pressure elevation to 140 mmhg systolic or greater and 90 mmHg diastolic or greater. At least 2 abnormal readings made 4 - 6 hours apart are recommended before making a diagnosis of hypertension (3, 5, 8). The patient presented was noted to have a persistent high blood pressure of over 140/90 mmhg even after 6 hours apart.

Proteinuria is an important sign of pre-eclampsia and diagnosis is questionable in its absence - proteinuria is defined as 300 mg (0.3g) in a 24 hours urine collection or more or 100 mg/dl (more than 2+ on dipstick) in at least 2 random sample collected 6 or more hours apart (5, 8).

It is important to note that protenuria can occur in other conditions like in contamination of urine by vaginal discharge (do midstream sample after cleansing the introitus with sterile water/saline or by using catheter to avoid this), urinary tract infection (excluded by microscopic examination and culture of urine), congestive heart failure and severe anaemia due to hypoxia of the kidney and orthostatic proteinuria (absent in the morning but present in the evening due to standing thus pressure of the lumbar spines or left renal vein).
Proteinuria is a sign of worsening hypertensive disease, specifically pre-eclampsia and when it is overt and persistent, maternal and fetal risks are increased even more (5).

Worsening hypertension especially if accompanied by proteinuria is an ominous sign (5). Sudden weight gain of more than 1 kg per week or 3 kgs in a month may be the first sign of pre-eclampsia (1). Normal weight gain is 0.5 kg per week. But it is notable that moderate oedema is a feature of 80% of normotensive pregnancies (5). Oedema should be considered pathological only if it is generalized, involving hands, face and legs. It is now generally accepted that oedema or weight gain should not be included in the definition of pre-eclampsia (5).It is important to recognize other causes of oedema like cardiac, hepatic, renal, nutritional, inflammatory or DVT and pressure of the gravid uterus on the pelvic veins that produces ankle oedema.

The patient presented had blood pressure of 160/105 mmhg, proteinuria of 2+, oedema of the lower limbs and excessive weight gain.

The management of a pregnancy complicated by hypertension is determined by the effects of the disorder on the maternal or fetal well being rather than by the pathophysiology. The most effective for pre-eclampsia is delivery of the fetus and placenta and in pregnancies at or near term in which the cervix is favourable, labour should be induced.

Pre-eclampsia remote from term present a much more difficult management problem. The decision of whether to intervene and deliver a pre-term infant, that may require prolonged intensive care or to institute expectant management is usually governed by disease severity and the length of gestation (5). The patient presented had moderate pre-eclampsia near term and conservative treatment was offered in the ward for two weeks.

The role of hospitalization for bed rest in mild pre-eclampsia has been challenged. Instead some workers have recommended out patient management with regular blood pressure, weight, fetal-kick charts and twice Weekly non-stress testing. The patient is advised to seek immediate attention if she records elevated blood pressure or reduced fetal movements (5).

If a woman becomes normotensive after hospitalization, and is remote from term and without evidence of fetal compromise, out patient surveillance may be considered. There is no place for conservative management If there are signs of progression to severe pre-eclampsia or fetal monitoring tests becoming abnormal (5). Conservative management of mild disease beyond term is not beneficial to the fetus because utero-placental blood flow is sub-optimal. After 37 completed weeks, labour should be induced as soon as the cervix is favourable or cervical ripening with prostaglandins may be utilized (5). This is what was done for the patient presented. She was on conservative treatment upto 38 weeks, then cervical-ripening with PGE2 and induction of labour.

Antepartum use of antihypertensive therapy for mild pre-eclampisa remote from term is controversial. Some claim that antihypertensive drugs appear to reduce the progression to serve disease but do not improve the perinatal outcome. Bed rest alone has little effect on blood pressure or disease progression. In our set up anti-hypertensive therapy is utilized in the interest of the mother. Aldomet and phenobarbitone were used in the patient presented.

In severe pre-eclampsia, maintenance of maternal blood pressure below 160/100 mmhg should be the therapeutic goal. The objective for treatment of severe pre-eclampsia is to prevent maternal cerebral vascular accidents (CVAS) and congestive cardiac failure without compromising cerebral perfusion or jeopardizing the utero-placenta blood flow(5).

The anti-hypertensive drugs currently in use includes:-

Alpha-methyldopa (Aldomet) - reduces central sympathetic drive - effects appears after 48 hours but a single loading dose of 2gm may act within 1 -12 hours (S. E -headaches, asthenia, nightmares).Calcium channel blockers (nifedipine)- vasodilator acting by blocking calcium influx into smooth muscle cells , given sublingually and acts within 10 minutes while orally acts within 30 minutes, the higher the starting blood pressure, the greater is the hypertensive effect (S. E- headaches and flushing). Hydralazine (Apresoline) - a vasodilator, increases renal and uteroplacentral blood flow (20mg slowly I.V followed by 5 mg every 20 min until diastolic blood pressure is 100-110 MgHg). Oral form can be used in chronic situation as a second line (se-tachycardia, headache, flushing, nausea and vomiting). Adreno-receptor blockers - labetalol, atenolol, propranolol - (S.E - growth retardation, neonatal respiratory depression and hypoglycemia). Angiotensin converting enzyme inhibitors - captopril - used in post partum hypertension (SE - foetal renal failure and neonatal hypotension).
Diazoxide - vasodilatation.
Other drugs: diuretics i.e. frusemide, thiazides - use in heart failure and pulmonary oedema (S.e - aggravate haemoconcentration).
Dexamethasone - effective in reducing cerebral oedema but its routine use is not recommended. Antibiotics - for prophylaxis.

In severe pre-eclampsia, seizure prophylaxis is done preferably with magnesium sulphate. In some centres, diazepam and phenytoin are still being used but are inferior to magnesium sulphate in effectiveness (5).

Both severe pre-eclampsia and superimposed pre-eclampsia developing early in pregnancy present an obstetric dilemma. Delivery is the ultimate cure for maternal disease. However, delivery of infants before 34 weeks gestation with immature fetal lung profiles, result in intensive, prolonged neonatal care, and is associated with increased neonatal morbidity and mortality (5, 8).

Given the ultimate goal of maternal safety first, a management program has been developed, that includes maternal surveillance and daily fetal testing, for expectant management of severe pre-eclampsia remote from term. Oral antihypertensive are used to control the hypertension. Prompt delivery is indicated for presence of imminent eclampsia, multi-organ dysfunction, fetal distress or severe pre-eclampsia after 34 weeks (5).

Expectant or conservative management of servere pre-eclampsia is beneficial in a selected group of women, should be practiced only in a tertiary care center with close maternal and fetal surveillance. Development of severe - pre-eclampsia after 34 weeks gestation demands prompt delivery (5).

Women in well established labor should be allowed to deliver vaginally in the absence of obstetric contra-indications. Labour induction may be initiated after 34 weeks gestation irrespective of Bishop Score (5).

Magnesium sulphate decreases beat to beat variability of the fetal heart rate, may inhibit uterine contractions, and may cause neonatal hyper magnesemia(6). Blood loss in servere pre-eclampsia may be greater than that of normal pregnancy .Magnesium sulfate may inhibit bleeding time and increase blood loss at delivery. Its use may be associated with increased post partum hemorrhage (7).

Complications arising from pre-eclampsia affects both maternal and foetus. Maternal complications includes eclampsia, cerebral hemorrhage, HELLP syndrome-haemolysis with increased bilirubin and lactic dehydrogenase, elevated liver enzymes with increased SGOT and low platelet and thrombocytopenia <100,000 platelet count; renal failure, heart failure, chronic hypertension and recurrent pre-eclampsia in subsequent pregnancy. The fetal complications includes intrauterine growth retardation, intrauterine fetal death and prematurity and its complications.

There is increased neonatal morbidity and mortality, and increased maternal morbidity and mortality (5, 8). None of these complications occurred in the patient presented. Maternal morbidity and mortality related to pre-eclampsia are principally associated with eclampsia and HELLP syndrome(5). Fetal morbidity and mortality are associated mainly with second trimester severe pre-eclampsia and preterm delivery (5).

Prevention of pre-eclampsia has received considerable interest. There are screening tests that could be used to predict pre-eclampsia. These includes; rollover test at 28 - 32 weeks - after resting in the left lateral position ,turning to a supine position induces a rise in diastolic pressure of 20 mmHg or more, average mean arterial pressure (MAP) in second trimester - diastolic pressure + 1/3 of the pulse pressure >90 mmhg, angiotension infusion at 26 - 30 weeks, isometric exercise at 28 - 32 weeks and Doppler velocimetry of uterine and umbilical vessels at 18 - 26 weeks. High protein and low salt diet have been mentioned for prevention of pre-eclampsia (2).No efficacy has been found on these.

Calcium supplementations in pregnancy was found to reduce the blood pressure and the incidence of pre-eclampsia, but not to improve maternal / fetal morbidity and mortality (5). No benefit was gained from magnesium and zinc supplementation(5).

Low dose aspirin (only used before pre-eclampsia sets in) has been tried with conflicting reports. In a low does (60 - 80 mg) it selectively inhibits thromboxane production and angiotensin II binding sites on the platelets. A study done in Nairobi (Pumwani and KNH) between January 1992 and September 1993 showed 41% (14) in the placebo group developed pre-eclampsia compared to only 6% in the aspirin treatment group (1).Other workers have shown no benefit or even increased cases of abruption placenta.

None of these screening test for the pre-eclampsia or preventions were tried in this patient.

REFERENCES

1. Essential Obstetric Care Manual for Health Service Providers in Kenya - A Safe Mother Hood Initiative - Ministry of Health, Population Council and University of Nairobi - March 2002.

2. Gabbe G. S., Niebyl J. R. and Simpson J L Normal and Problem Pregnancies - Fourth Edition - 2002.

3. American College of Obstetricians and Gynecologists - Compendium of Selected Publications - Jan 2000.

4. American College of Obstetricians and Gynecologists, ,Technical Bulletin No. 219. Hypertension in Pregnancy. Washington D. C ACOG, 1996.

5. Andrea G. Witlin and Baha M. Sibai Hypertensive Diseases in Pregnancy, in 2nd Edition of Medicine of the Fetus and Mother by E. Albert Reece and John C. Hobbins, Lippincott - Raven Publishes, Philadelphia, 1999 Pages 997 - 1011.

6. Cunningham F G, Macdonald PC, Gant N F, Leveno J K. Hypertensive Disorders in Pregnancy in William-Obstetrics 21st Edition - 2001.

7. Mati JKG, Studies on Pregnancy Hypertension in Kenya, Some Aspects of Epidemiology, Prognosis, Differential Diagnosis and Etiology. MMed Thesis, University of Nairobi,1975.

8. William C. Mbabie, Baha M. Sibai. Hypertensive States of Pregnancy, in Martin L. Pernoll Ed. Current Obstetric and Gynaecological, Diagnosis and Treatment 9th.

9. Alan H. Decherrey, Lauren Naltan - Current Obstetric and Gynecologic, Diagnosis and Treatment, 9th Edition - August 2002.

10. Lindheimer MD, Katz A. Current Concepts: Hypertension in Pregnancy. N. Engl J. Med 1985; 313: 675.

11. Ylikorkala O, Makila WM. Prostacyclin and Thromyoxane in Gynecology and Obstetrics.

12. Khong TY, De Wolf F, Robertson WB, Brosen L. Inadequate Maternal Vascular Response to Pre-Eclampsia and by small-for-gestational age Infants. Int.j. Obstet Gynaecol 1986, 93:1049.

13. Walsh S W. Pre-Eclampsia: an Imbalance in Placental Prostacyclin and Thromboxane Production AM J Obstet Gynecol, 1985, 152:335.

14. Downing L, Shepherd GL, Lewis PJ Reduced Prostacyclin Production in Pre-Eclampsia Lancet 1980, 2: 1374.

OBSTETRIC CASE NO 2

CARDIAC DISESE IN PREGNANCY

Name: C.W.		L.M.P.:	1.10.01
Age: 35 years		E.D.D:	8.7.02
IP No.:0811178		Para:	3+0
D.O.A.: 27.5.02		D.O.D.:	24.7.02

Known patient with rheumatic heart disease since the age of 10 years who came with complains of difficulty in breathing orthopnea, dyspnea at rest for 6 weeks.

HISTORY OF PRESENTING ILLNESS

She was well until April when she developed the above symptoms. She had dyspnea at rest and orthopnea, which was relieved by being propped up. She also had paroxysmal nocturnal dyspnea. She also had palpitation and cough. The cough was not productive. She subsequently developed leg swelling which was worse after walking. She was admitted at Kerugoya District Hospital for one week before being transferred to KNH for further management.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

Para 3+0 1st delivery 1998 SVD to live male infant weighing 3.9kg

2nd delivery 1993 SVD to live male infant 2.7 kg

3rd delivery 1997 SVD to live male infant 3.2 kg

She had no complications in previous pregnancies. Menarche was at 14 years, menses were regular lasting 3 days and coming after 24 days. Contraceptive use, she used oral contraceptive in 1987,and copper T between 1993and1997.

PAST MEDICAL HISTORY

Had been getting monthly penicillin injection in the 1970's and 1980's but stopped. Was admitted in 1970 because of the cardiac disease. No history of blood transfusion or surgery.

FAMILY AND SOCIAL HISTORY

She has been married since 1986. She is a small-scale farmer and the husband a tailor. No family history of diabetes, hypertension or cardiac disease. They both don't drink and smoke.

EXAMINATION

Sick looking in respiratory distress, no pallor, jaundice or lymphadenopathy. She had bilateral pedal oedema. Blood pressure was 80/60mmHg, temperature 36.7°C.

CARDIOVASCULAR SYSTEM:

Pulse rate 100/min, which was irregularly irregular

Precardium was heaving

Palpable thrills in the left parasternal border

Apex beat was at the 6th intercostal space, anterior axillary line

On ausculation, there was a gallop rhythm with pansystolic murmur and diastolic murmur.

RESPIRATORY SYSTEM

No abnormality detected

ABDOMINAL EXAMINATION

Fundal height was 34, fetus in cephalic presentation, longitudinal lie with regular fetal heart rate of 132/minute. Other systems were essentially normal.

Investigations

Haemoglobin	Haemoglobin - 11.4g/dl	
	PCV - 33.7%	
Urea and electrolytes	Na+	-133mmol/l
	K+	-4mmol/l
	BUN	-6.2mmol/l
	Creatinine	-74 µmol/l

Echocardiography showed; moderate mitral stenosis, mitral regurgitation, moderate pulmonary hypertension and mild aortic regurgitation consistent with rheumatic heart disease.

Obstetric scan showed a single fetus in cephalic presentation, placenta-fundal anterior, gestation 34 weeks.

She was graded as cardiac disease grade IV at 34 weeks gestation. She was to be propped up in bed and was put on the following treatment;
Digoxin 0.125mg P.O. OD
Ranferon T BD
Amoxil 50g PD MD
Heparin 5000iu SC BD

She was then followed up with fetal monitoring, 4 hourly blood pressure, pulse rate, respiratory rate and temperature. She was for delivery vaginally since there was no obstetric indication for operative delivery. She went into spontaneous labour on 10.6.02, at 36 weeks gestation. She was wheeled to the labour ward.

MANAGEMENT OF LABOUR

She was put in left lateral position and propped up position. She was found to be 4cm dilated and the head was 2/5 down with regular fetal heart and good contractions. An IV line was put up and oxygen by mask was given and prophylactic antibiotics of augmentin .Pethidine injection was also given.

She progressed well and had a spontaneous vertex delivery to a live male infant 2300grams who scored 8/1, 10/5 and was taken to New Born Unit due to low birth weight. The placenta was delivered by controlled cord traction. An IV drip with 20iu sytocinon was run after delivery and IV frusemide 80mg given.

POST DELIVERY CARE

She was transferred to the acute room and kept in propped up position. Vital signs were observed ½ hourly and she continued on IV antibiotics digoxin, heparin and haematinics. She was reviewed by a cardiologist and found to be stable. She was transferred to the postnatal ward after 48 hours. She developed ascities and oedema in the ward and lasix was increased to 80mg TDS. She did well and was discharged on the sixth week with the baby.

She was advised on using barrier method (condom) as she discussed with the husband on possible interval surgical sterilization.

DISCUSSION

C.W. was admitted with cardiac disease grade IV. She subsequently delivered by SVD to a live male infant. They both did well postnataly.

Cardiac disease in pregnancy is associated with significant maternal morbidity and mortality (10). Incidence of cardiac disease is at about 1.3% (1). At Kenyatta National Hospital, the incidence is 0.6 (2). In developing countries, rheumatic heart disease is still the commonest cause of heart disease (3). In the developing world, rheumatic heart disease is now less common and congenital heart disease are seen more commonly (3).

In his study, Ngotho found rheumatic heart disease responsible for 86.4% of cardiac disease in pregnancy. Other causes of heart disease in pregnancy include hypertension, thyroid, coronary, syphyilitic, cardiomyopathy, pericarditis and other congenital heart diseases (1,3). Majority of the patients with cardiac heart disease in pregnancy were found to be young. Spencer and Makene in 1977 found majority of patients to be in the age group of 20-24 years (4). C.W. had rheumatic heart disease and was 35 years old.

The predominant lesion in rheumatic heart disease was found to be mitral stenosis (5). C.W. had mitral stenosis, mitral regurgitation and pulmonary hypertension since childhood.

Cardiovascular changes in normal pregnancy tend to worsen or unmask cardiac disease. They also tend to make it difficult to diagnose heart disease (1).

During pregnancy, total blood volume increase by 50% above non-pregnant levels by 32 weeks.

Cardiac out put increases early in pregnancy and by 12 weeks it is about 36% above non-pregnant levels. During labour, cardiac out put increase by 34% in 1st stage with further increase in 2nd stage due to increase in stroke volume and heart rate (6). There is also steady increased in blood pressure. Signs and symptoms associated with heart disease are often present in normal pregnancy. These include fatigue, dyspnea, orthopnea, oedema, and palpitations. In pregnancy, dyspnoea at rest, orthopnoea, angina, haemophtysis and palpitations with arrythmias and syncope signify heart disease. Others include cyanosis, finger clubbing, raised jugular venous pressure, cardiomegally and parasternal heave (5). A systolic murmur is a normal finding but diastolic murmur, pansystolic murmur, late systolic and ejection systolic murmur may signify cardiac disease (5).

Cardiac disease can be graded according to function disability according to the New York Heart Association classification. This is based on past and present disability and is not influenced by physical signs.

Grade I: Uncompromized patients have signs of cardiac disease but no symptoms limiting ordinary life.

Grade II: Slightly compromised patient with cardiac disease and slight limitation to physical activity. They have dyspnoea on ordinary physical activity.

Grade III: Markedly compromised patient with cardiac disease and marked limitations of physical activity. They have dyspnoea on less ordinary activity activity

Grade IV: Severely compromised. They have cardiac disease and inability to perform any activity without discomfort. They have orthopnoe or dyspnoe at rest.

Patients with pure mitral stenosis, previous congestive cardiac failure of cardiac surgery falls into this class (5).

They can also be classified according to the risk of mortality associated with pregnancy in 3 classes (7).

i. Low risk - mortality < 1%:
   This includes atrial septal defect, ventricular septal defect, patent ductal arteriosus, corrected tetratology of fallot, procaine valve, mild mitral stenosis and pulmonary/tricuspid disease.

ii. Medium risk - mortality 5-15%:
   Congenital heart disease without pulmonary, hypertension, hypertrophic obstructive cardiomyopathy, symptomatic mitral stenosis, Ebstein's anomaly, aortic stenosis, coarctation of aorta, uncorrected teratology of fallot, artificial valve and previous myocardial infaction.

iii. High risk - mortality 25-50
   Severe aortic stenosis, pulmonary hypertension with reversed central shunt and marfan syndrome with aortic involvement.

The patient presented had cardiac disease grade IV. Successful management of cardiac disease in pregnancy requires a close cooperation between the cardiologist and obstetrician. A combined clinic is preferable with pre-conceptional visit preferable. Accurate assessment of the disease and counseling of risks and outcome. Patient with high risk should be advised to terminate the pregnancy in 1st trimester if possible but not infrequently high desire for children may lead to dismissal of the advice. Surgical correction can be done then. During antenatal period investigation should be done this include electrocardiograph (ECG), echocardiography and obstetric ultrasound.

Careful monitoring to avoid heart failure should be done with special emphasis on risk factors, which include infections (especially urinary tract), hypertension, anaemia and multiple pregnancies.

Patients with grade I and II disease are seen weekly until term then admitted to await labour. Patients with grade III and IV are admitted throughout the duration of pregnancy.

C.W. was admitted on the 1st contact at 34 weeks. In management of labour, spontaneous labour and vaginal delivery is preferred. Most patients have rapid uncomplicated labour especially if taking digoxin (5). Caesarean delivery is limited to obstetric indication. The patient is propped up and vital signs monitored ½ hourly.

An analgesic is important as it reduces cardiac out put and anxiety. Epidural analgesia acts as agood analgesic and also helps to reduce cardiac output by reducing pre-load and causing pheripheral vaso-dilation. Narcortic analgesics (Morphine, Pethidine) are also used. Oxygen is also given to ensure optimal saturation of the blood and also to prevent decompensation(5)

IV fluids should be carefully monitored to avoid fluid overload and pulmonary oedema associated with injudicious fluid loading.

Second stage of labour should be shortened by elective assisted delivery to minimize dramatic increase in blood pressure. In our set up, elective vacuum extraction is carried out (5). C.W. had a premature labour and hence elective vacuum was not done.

Close monitoring of third stage will prevent haemodynamic changes associated with post partum haemorrhage. Oxytocin is preferable to ergometrine as ergometrine will cause hypertension and peripheral vasospam associated sudden intravascular overload (1,5). Use of prophylactic antibiotics to prevent infective endocarditis is necessary as complications often occur without warning. Bactereamia following normal delivery is rare but many obstetricians prefer to give antibiotics (8).

Our patient received prophylactic antibiotics. In our unit, cardiac diseases is observed for at least 24 hours in labour ward before transfer. Our patient was observed for 72 hours.

Post partum period is also critical and monitor for infective endocarditis, congestive heart failure and thromboembolic disease is a must. Our patient was put on prophylatic heparin, antibiotics and early mobilization was emphasized.

Of cardiac disease in pregnancy, grade III and IV account for 85% of the 0.5% mortality rate; Complications of cardiac disease in pregnancy include premature labour and delivery, low birth weight and higher incidence of congenital heart disease (1,5). Our patient had a premature delivery.

Contraception post partum is important and surgical sterilization is the preferred method (1,8). Other methods that can be used are oral contraceptives and condoms. Use of oral combined pils is avoided in those with mitral valve disease and those with mechanical valves where risk of thrombosis and embolism is high.Most of these patients require anti-coagulation with warfarin (8)
Intrauterine devices are not frequently used due to the high frequency of infection (8).

REFERENCES

1. McPaul P.B., Dorman J.C., Bayle D.: Pregnancy complicated by maternal heart disease. A review of 519 women. Br. J. Obstet Gynaecol. 1988; 95:861-7
2. Ngotho D.K.: Cardiac disease in pregnancy at KNH: MMed thesis, University of Nairobi, 1982.
3. Szekely P., Turner R., Snaith L.: Pregnancy and the changing patterns of rheumatic heart disease: Br. Heart J. 1973:35:1293-303.
4. Spencer D.D., Makene J.W.: Rheumatic heart disease in Tanzania . E.Afri. Med. J. 49:900 1972.
5. Cunningham F.G., McDonald P.C., Levene K.J., Gant N.F., Gilstrap L.G.: Cardiovascular diseases: Williams obstetrics 21st edn. Appleton and Lange, Connecticut p1086 1997
6. Robson S.C., Dunlop W., Boys R.Y., Hunter S.: Cardiac output during labour. BMJ 1987 296:1169-72.
7. Forfar J.C.: Heart disease in pregnancy. In: Weatherall D.J., Ledingham J.G., Warrell on ed. Oxford textbook of medicine, Oxford University Press 1996 134
8. De Sweil M.: Cardiovascular problems in pregnancy. In: Chamberlains G. ed Turnbull. Obstetrics London Churchill Livingstone 199 369-381.

OBSTETRIC CASE NO. 3

PREGESTATIONAL INSULIN-DEPENDENT DIABETES MELLITUS IN PREGNANCY, UNFAVOURABLE OUTCOME

NAME:	G.W.M	IP. NO:	0649528
AGE:	27 YEARS	DOA:	1ST - 29/3/00
		DOD:	1ST -21/4/00
PARITY:	2+1	DOA:	2ND - 13/5/00
LMP:	UNKNOWN		
EDD:	UNKNOWN	DOD	2ND -17/5/00

HISTORY OF PRESENTING COMPLAINTS

The above named patient was admitted from the antenatal clinic at booking due to diabetes mellitus in pregnancy at unknown gestation, for control of blood sugars. She had no complaints of polyuria, polydipsia, nocturia or dysuria at the time of admission. She had been on regular insulin 10 I.U three times a day. At the time of admission she had no complaints.

PAST MEDICAL HISTORY

She was a known diabetic since 1994 and has been on insulin since then. She had been admitted to at KNH due to diabetic melitus. She was readmitted in 1998 with diabetes in pregnancy at the same institution. She was being followed up in KNH medical clinic. She had been diabetic for 6 years.

PAST GYNAECOLOGICAL AND OBSTETRIC HISTORY

She had her menarche at 17 years. Her menstrual periods were irregular with cycles of 21 to 28 days and a flow of 3-4 days' duration. The menstrual periods were not associated with pain or cramps. She was para 2+1 and she had her first delivery in 1991 at term, by spontaneous vertex delivery (SVD), to a live male infant with a birth - weight of 3.5 Kg, who is alive and well. The antenatal and postnatal periods had been uneventful. In 1997, she had a miscarriage at 3 months and evacuation was done at KNH.She had another delivery in 1998, at term to a live female infant, who weighed 4.6kg by spontaneous vertex delivery. During that pregnancy she was on regular insulin 10 I.U three
times a day. During the 1997-pregnancy that ended with miscarriage, she was on insulin (lente) 30 1.U once a day in the morning.

Her menstrual periods had not resumed since the last delivery in June 1998 and she had never used any contraceptive method. Thus her estimated date

of delivery (EDD) could not be computed. She could not recall the date of quickening.

At the booking clinic, her blood sugar level was 10.8 mmol/L and the urinalysis indicated 3+ glucose and nil protein.

FAMILY AND SOCIAL HISTORY

She was married and a housewife, who lived with her husband at Kiambu. The husband was an architect in private practice. Her paternal grandma was diabetic and had died of diabetic complications after more than 20 years of the disease. She gave no history of any other known chronic disease in the family. She did not smoke cigarettes or use alcohol.

PHYSICAL EXAMINATION

She was in fair general condition, slim, had no fever or pallor or oedema. Her vital signs were normal with a pulse rate of 78 per minute, respiratory rate of 24 per minute, a temperature of 36.5 C and a blood pressure of 100/60 mmHg.
The respiratory, cardiovascular and central nervous systems were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was 36 weeks. The foetus was in longitudinal lie, cephalic presentation and the foetal heart rate was regular at 132 beats per minute. There were no areas of tenderness or other palpable masses.

PELVIC EXAMINATION

This was not done as there was no indication.

DIAGNOSIS

Pre-gestaional diabetes mellitus in pregnancy at unknown gestation.

PLAN OF MANAGEMENT

She was admitted for blood sugar control and monitoring. A foetal kick chart was kept and was satisfactory. She continued with diabetic diet. Daily urinalysis for sugar and protein was done. Antenatal profiles were also done. mid stream specimen of urine was ordered for microscopy, culture and sensitivity. Obstetric ultrasound was done to rule out congenital malformations, and for gestational age assessment.
Serial blood sugars were done daily. And the patient continued to receive regular insulin in titration with the blood sugars.

Results:

1) Antenatal profiles — Blood group O positive
VDRL negative
Hb 11.2g/dl

2) M.S.S.U - Glucose +3, protein trace, leucocytes nil, ketones nil

No growth was obtained.

3) Obstetric U/S 30/3/00 - Amniotic fluid volume normal, no gross foetal abnormality ,average age 32 weeks, estimated weight 2.143 Kg, foetal cardiac activity present, single intrauterine foetus in cephalic presentation.

4) Obstetric scan 13/4/00 - BPD 34 weeks, 3 days FL 34 weeks, 6 days. Foetal cardiac activity was noted, at 143/minute. Spine and body were normal. Amount of liquor was increased. Conclusion: hydramnios at 34 weeks.

5) Serial blood sugar -The 6 AM blood sugar range was 3.3 - 13.2mmo1/L.

11AM blood sugar range was 3.5 - 12.5 mmo1/L.

The

PM blood sugar was 2.4 - 10.6mmo1/L.

The serial blood sugars were initially > 10mmo1/L with the highest recorded at 13.2 mmo1/L. But on gradual increase of regular insulin from 10 I.V three times to 16 1.V three times a day, the sugars were well controlled below 7mmo1/L. The foetal kick chart was satisfactory and she requested discharge after one month in the ward and was discharged on 21/4/00 through ANC.

ANTENATAL FOLLOW - UP

She was seen on 26/4/00, she had no complaints, fasting blood sugar was 3.9mmo1/L, urine glucose was nil. She was advised to continue on regular insulin 14 iu 1.V three times per day. Foetal kick chart was satisfactory. On revisit to ANC on 3/5/01, the fasting blood sugar was 2.8mmo1/L, she had no dizziness or any other complaints,foetal kick chart was satisfactory. Urine sugar was nil.

On revisit to ANC on 10/5/00, she had no complaints, a fasting blood sugar was 3.2 mmo1/L, urine sugar was nil. Fundal heght was term, cephalic presentation. Foetal heart was heard and regular.

On 13/5/01, she was readmitted through labour ward with history of drainage of liquour for 3 hours and loss of foetal movements for 2 days, and she had no labour pains. Then she was at 38 weeks. Physical examination revealed that she was in fair general condition, afebrile, not pale. Abdomen was uniformly

distended, fundal heght was term, cephalic presentation, foetal heart tones were not heard. The foetal head was 4/5 up. On pelvic examination, the cord was found to be prolapsed up to the intoitus and was not pulsatile, the cervical dilatation was 6cm, 50% effaced cervix and pelvis felt adequate.

An impression of diabetic patient with intrauterine foetal death due to cord prolapse at 38 weeks was made.

She was started on syntocinon drip, blood sugar was done immediately and was found to be 16.3 mmo1/L and was repeated one houly therafter. Insulin drip in normal saline was also started at a rate of 1 I.U per hour. After 3 hours of labour, she progressed and delivered a macerated stillborn infant whose weight was 4.1 Kg, placental weight was 700 grams, estimated blood loss was 150 mls. She sustained no genital or perineal injuries. Blood sugar remained > 10mmol/L for 2 days after delivery and then settled on insulin therapy she was also started on antibiotic therapy. On the 4th post delivery day, she was stable, blood sugar was 5.4mmol/L, uterine size was 16 weeks size and well contracted, lochia loss was normal and she was discharged home through postnatal clinic in 2weeks and diabetic clinic in 4 weeks.

She however, failed to turn up for the recommended postnatal follow-up. She however continued with the diabetic clinic and the blood sugar control stabilised.

DISCUSSION

The patient presented was para 2+1. She was 27 years old and a known diabetic for 6 years she was managed on regular insulin, whose dose was gradually increased through the pregnancy, but she had an unfavourable outcome at 38 weeks. She booked for antenatal care late as she was not aware of her pregnancy dating, since she had not experienced any menstruation since her last delivery in 1998.

Diabetes mellitus is a heterogeneous disorder characterised by hyperglycemia, which is a result of relative or absolute insulin deficiency. Insulin plays a critical role in carbohydrate, fat and protein metabolism. With insulin deficiency or functional impairment, blood glucose levels are elevated as a result of both decreased utilization of glucose by skeleton muscle, hepatic and adipose tissues and increased hepatic glycogenolyses and gluconeogenesis. (1)

Glycosylated haemoglobin is increased when blood glucose levels are elevated over a period of time. Impaired utilisation of amino acids by muscles contribute to gluconeogenesis. Impaired lipolysis occurs with insulin deficiency, causing elevation of free fatty acids and an increased formation of ketone bodies (acetoacetate and beta-hydroxybutyrate) (1) .The incidence of diabetes in pregnancy is about 1% of pregnancies,making it the most

frequent metabolic disorder complicating pregnancy (1). The incidence of diabetes in pregnancy was found to be 1 in 343 in KNH. (2)

The diagnosis of diabetes mellitus in pregnancy depends on history, physical examination and laboratory investigations. Polydipsia and polyuria occur when blood glucose levels significantly exceed the renal resorption constant for glucose. An associated osmotic diuresis with dehydration and electrolyte loss may occur (1). Some workers have outlined the most commonly used criteria for the suspicion of diabetes mellitus. A history of one or more of the followiing features should sound a warning (3):

1) Bad obstetric history (BOH): Previous unexplained still births or neonatal deaths or habitual abortions or previous congenital malformation of the newborn.
2) A strong family history of diabetes, atleast one 1st degree relative or two 2nd degree relatives or a previous child with birth weight of 4kg or more.
3) Abnormal screening tests (abnormal glucose tolerance test - GTT or glucosuria outside pregnancy)
4) Obesity which is progressive (90 kg or more)
5) Unexplained polyhydramnios.
6) Unexpalined hypertension or pre-eclampsia.
7) History of repeated infections, especially vulvovaginitis.

The diagnosis is confirmed by means of a glucose tolerance test.
In this test, the patient is instructed to have normal diet for 3 days prior to the test. Then she fasts overnight for at leas 10 hours before the test. She should not smoke or have diuretic therapy before or during the test.

A carbohydrate load of 75 Kg glucose in 250 -350 mls of water is used. Blood sampling every hour for 3 hours is done. A diagnosis of diabetes is made if fasting blood glucose is 8mmol/L or the 2 hour value is > 11mmol/L.A diagnosis of impaired glucose tolerance is made if the fasting plasma glucose is less than 8mmol/L and the 2 hour glucose is more than 8mmol/L " and less than 11mmol/L (3).

The Diabetes Data Group of the National Institute of Health proposed a new classification system based on aetiological factors and insulin dependence (4) as follows:

a) Type I - Insulin-dependent diabetes mellitus.

b) Type II - Non -insulin dependent diabetesmellitus

c) Type III - Gestational diabetes or carbohydrate intolerance

d) Type IV - Secondary Diabetes.

Another classification proposed by white almost 40 years ago is still generally accepted and remains a useful prognostic guide. (5). Whites classification relates the onset of diabetes, its duration and the degree of vasculopathy to the outcome of pregnancy.

A revision made by Hare and White proposed class- A diabetes, to include women known to have diabetes before pregnancy and who are treated with diet only. (5)

Practically speaking, women with pregnancies complicated by diabetes millitus may be separated into one of two groups:

I) Gestational diabetes - women with carbohydrate intolerance of variable severity with onset or first recognition during the present pregnacy.
II) Pre -gestational diabetes - women known to have diabetes before pregnancy.

Gestational diabetes is further classified as :

A-1 - with fasting glucose of < 5.8 mmol/L and post - prandial blood glucose>6.7mmol/L.

A-2 with fasting glucose > 5.8mmol/L and post - prandial glucose level > 6.7mmol/L (5)

Whites' classification of pre-gestational diabetes is as follows: (5)

I Class A - With any age of onset, any duration, no vascular disease and controlled on diet alone.

II Class B - With age of onset > 20years, duration < 10years, no vascular disease and therapy with insulin.

III Class C - With age of onset 10-19 years, duration 10-19 years, no vascular disease and on insulin therapy.

Iv Class D With age of onset before 10 years or after 20 years,duration of >20years, with benign retinopathy and on insulin therapy.

v Class F - With any age of onset, any duration, with nephropathy and on insulin therapy.

VI Class R With any age odf onset, any duration, with proliferative Retinopathy and on insulin therapy.

VII Class H -With any age of onset, any duration, with heart disease and on Insulin therapy.

In general the more severe, the degree of vasculopathy in pregnancy, the worse the foetal prognoses. 90 % of all pregnant diabetic patients have

gestaional diabetes mellitus (GDM), whereas insulin dependent diabetes mellitus (IDDM) and non-insulin dependent diabetes mellitus (NIDDM) account for the reamining 10% (5). The patient presented here had pre- gestational diabetes mellitus, whites calss B, type I diabetes mellitus.

Type I diabetes is immune - mediated and develop in genetically suscpticble persons, its associated with HLA - D complex located on chromosome 6 (6). Thype II diabetes has no HLA association, though it has a familial occurrence. It is caused by abnormal insulin secretion and insulin resistance in target tissues (6)

In normal pregnancy, basal insulin levels are almost unchanged in the first and second trimester but increase by as much as 50% in the third trimester which suggests insulin resistance at the time. (5,6)
The increase in insulin release in response to a glucose load becomes pronounced by the third trimester. During the first trimester, insulin action is enhanced by oestrogen and Progesterone leading to increased glucose use and lower fasting plasma glucose levels, resulting in increased episodes of hypoglycemia in pregnant diabetics in early pregnancy (1,5,6).

Human placenta contains insulin-degrading enzymes, insulinase but this has not been shown to increase insulin clearance from the placenta. Insulin resistance in pregnancy has been demonstrated and it is progressive as gestation advances. Insulin sensitivity is decreased in pregnancy by as much as 80% from non-pregnant state. (5).

Pregnancy has a diabetogenic effect on the mothers as demonstrated by glucose intolerance during pregnancy. (6,7).

Elevated insulin concentrations during human pregnancy can be attributed to a variety of hormonal changes, like rising levels of maternal progesterone, human placental lactogen (HPL), free cortisol and prolactin. (5,6).

During normal pregnancy, the fasting blood glucose level decreases reaching a nadir by the 12^{th} weeks of gestation and remaining unchanged thereafter till delivery. (5).

Diabetes may be deleterious to pregnancy in a number of ways. A number of complications may arise. Both maternal and prenatal morbidity and mortality are increased compared to normal pregnant women. (6).
The likelihood of pre-eclempsia - eclampsia is increased fourfold even in absence of demonstrated pre-existing vascular or renal disease. Some bacterial infections are more common in diabetic pregnancy. The foetus can be macrocosmic with resultant difficult delivery, birth trauma and maternal injuries. (6).
The rate of caesarian delivery is increased with increased maternal risks of surgery. Hydramnios is common. Maternal diabetes adversely affects the foetus. The incidence of spontaneous abortions may be high in poorly controlled diabetics, probably due to higher malformation rates. Prenatal

death rate is increased considerably. Major anomalies are increased at least 3 fold in foetuses of women with overt diabetes. The incidence of pre-term delivery is increased 2-3 fold. Neonatal morbidity is common from birth trauma, RDS, Hypoglycemia and hypocalcaemia. The infant may inherit a predisposition to diabetes (6). Metabolic disturbances in diabetic patients are expressed in increased concentrations of circulating metabolic fuels including carbohydrate, protein and fat, these can be transferred to the foetus and contribute to the development of foetal macrosomia (6). The patient presented had an earlier abortion and the current pregnancy ended with a stillbirth at 38 weeks

Gestational diabetes mellitus is defined as carbohydrate intolerance of variable severity with onset or first recognition during the present pregnancy (5).
The incidence of Gestational diabetes mellitus (GDM) varies and is estimated at 3-5% of pregnant woman (5). In the past Patient selection for an oral 100g GTT was based on historic and clinical risk factors such as obesity, glycosuria, previous macrocosmic infant, previous neonatal death or congenital
Malformation, family history of diabetes and hypertension during current pregnancy. By these selections only 63% of patients with GDM were identified. (5). There is no international agreement as to the appropriate and globally acceptable diagnostic criteria for gestational diabetes. The second International Workshop-Conference on GDM recommended that all pregnant women receive screening for glucose intolerance at 24-28 weeks with 50g or oral glucose. A value of plasma glucose of > 7.8 mmol/L, indicates the need for a full diagnostic GTT. Diagnosis of GDM is based on the results of the 100g oral GTT (8). This method of screening has a sensitivity of 79% and specificity of 87% (8).

The American College of Obstetrics and Gynecology recommended screening all pregnant women older than 30 years of age as well as women with any risk factor. (6,9). Most authorities recommend testing at 24-28 weeks gestation, when insulin resistance is increased. Some investigators recommend screening for GDM at the first pre-natal visit for all patients with risk factors, within repeat of a negative test at 24-28 weeks. (10)

Other workers have recommended screening at 20,28 and 34 weeks (11). Glycosylated haemoglobin and fructosamine levels are of limited value in screening for GDM, as they have low sensitivity and specificity (5).

Diagnosis of GDM is in most cases based on an abnormal result of an oral GTT during pregnancy. A few cases are diagnosed on the basis of high fasting glucose levels during pregnancy. (5)

Screening has improved pregnancy outcomes in GDM patients. Close surveillance of the mother and foetus with close monitoring of maternal glucose levels is important in reducing prenatal morbidity and mortality. (5)

After diagnosis of GDM, patients' receive nutritional counseling, which is the mainstay of therapy in these patients. Blood glucose is monitored once or twice weekly. If fasting blood glucose levels are a least 5.8mmol/l or 2-hour post-prandial levels of at least 6.7mmol/lL, insulin therapy is begun. (5)

Glycaemic control may be assessed with glycosylated haemoglobin periodically (5). Some workers have recommended prophylactic insulin therapy, even in those patients with GDM and are seemingly well controlled on dietary therapy. It has been shown to further reduce neonatal morbidity. (12)

Antenatal testing with non-stress test weekly, maternal surveillance of foetal movements from 32 weeks gestation have been advised in some patients with GDM, especially if they are on insulin, have chronic hypertension or pre-eclampsia or have had a previous still birth. (5)

Delivery may be delayed until spontaneous labour or 42 weeks in well-controlled patients, but induction of labour as soon as pulmonary maturity is confirmed is recommended in poorly controlled patients, (5)

Foetal weight estimation is prudent before attempt at vaginal delivery and unfavourable cervix, cervical ripening is indicated. If estimated weight is >4.5 kg, caesarian delivery is recommended to prevent shoulder dystocia and birth trauma if the weight is 4-4.5kg, Individualized management based on the size of the patient and patients' previous obstetric history is necessary. (5)

Patients with GDM are at risk of developing diabetes, years after pregnancy. It is recommended that women with GDM be followed up postpartum to detect diabetes early. The risk of developing diabetes later in life in GDM is greatly influenced by body weight, with highest rates in obese patients. Obese patients should be advised to control their weight. (5)

Management of the pregnant diabetic woman is a complex task that should start before conception. In the pre-pregnancy period, the patient and her partner are educated on diabetes care during pregnancy and the need for stringent glycaemic control. The patients' general medical status is assessed and signs of retinopathy, nephropathy, hypertension, and ischaemic heart disease looked for. Opthalmological evaluation, ECG and renal function tests are performed. Severe retinopathy is treated with laser coagulation before pregnancy (5). In-patients with coronary artery disease, termination of pregnancy is seriously considered. Patients on oral hypoglycemic drugs should discontinue them and begin insulin treatment.

In our set up, many patients present for booking when already pregnant and there are no effective pre-conception sessions. The patient presented booked at about 32 weeks gestation.

The goals of the pre-pregnancy care are to achieve optimum diabetic control even before conception, as a high incidence of congenital anomalies is related to hyperglycemia in early pregnancy (5).

Congenital malformations in foetuses of diabetic patients are now responsible for about 40% of all prenatal deaths, replacing respiratory distress (RDS) as the leading cause of infant death (5). Cardiac anomalies are the most frequent malformations followed by CNS malformations (neural tube defects) and skeletal malformations.
Diabetes associated embryopathy in humans is thought to be caused by hyperglycemia, ketone bodies, hypoglycemia, low levels of trace metals and somatomedin -inhibiting factors, during orgnogenesis. Insulin has not been conclusively incriminated in causation of diabetic embryopathy (5).

All patients with pregestational diabetes mellitus are evaluated for possible foetal anomalies. Patients are routinely evaluated by maternal serum alpha-fetoprotein (MSAFP), an early glycosylated haemoglobin (HbA_1C) estimation, and ultrasonography. HbA_1C level > 9.5% is associated with significantly higher malformation rate. Ultrasound should be done at about 20 weeks gestation (5).

In the patient presented, only a late ultrasound at 32 weeks gestation was done, at the presented late and the other tests are not done in our set up.
Over the last 2 decades, prenatal mortality and morbidity has decreased significantly from 14-35% to 3-5%. This has been after stringent glucose control programs have resulted in better foetal outcome, and advances in insulin delivery and monitoring of glucose levels. Insulin dosages must be individualized and balanced with diet and exercises.

Diet therapy is considered a standard treatment of diabetes mellitus. All patients are seen by the dietician and individual meal plan adjustments made. The FDA recommends 35 Kcal per kg of ideal body weight and a diet composed of 20% protein, 30% fat, and over 50% carbohydrates (5). Dietary advice was given to the patient presented here.

Restricted saturated fats and cholesterol and increased dietary fibre are suggested. A diet consisting of 3 meals and 1-3 snacks, with the last one at bedtime is recommended. Patients' weight gains are assessed at each clinic visit (total weight gain of 10-13 Kg through the pregnancy is ideal (5). Intensive insulin therapy should begin before conception or as soon as possible thereafter. In the past liberal hospitalization of diabetic patients were employed early in pregnancy, with routine readmission in the 3rd trimester. But no significant difference has been found in maternal blood glucose control, foetal hyperinsulinemia, perinatal mortality and morbidity between out patient approach and long term hospitalization. (5).
Currently, hospitalization of diabetic patients is an exception rather than a rule. Most the patients are seen as out patients at 1-2 weeks intervals. Hospitalization is currently reserved for poorly controlled or non-compliant diabetics or in the third trimester with infection induced hyperglycemia,

worsening diabetic nephropathy or frank pre-eclampsia (5). The patient presented had poorly controlled diabetes mellitus and she was admitted for control.

Ophthalmologic and renal function tests (creatinine clearance, total urinary protein excretion) are performed in each trimester or more often if indicated. ECG is done at booking and repeated as necessary in those with vasculopathy. Assessment of blood pressure and proteinuria is done to detect early sign of pre-eclampsia. All pregnancies complicated by diabetes require extra assessment. A 1st trimester scan is used to date the pregnancy, establish viability and determine fluid volume status. A 2nd trimester scan is repeated at 18-20 weeks to rule out foetal anomalies. Subsequent scans are then performed at 4-6 weeks intervals to assess fluid volume and foetal growth. (5).

In pregnant diabetics, stillbirth occurs with increased frequency, particularly in the third trimester and a program of foetal monitoring should be initiated at 32-33 weeks.

Currently, outpatient protocols for anterpartum foetal surveillance include, 1-2 times/week NST, once weekly oxytocin challenge test or biophysical profiles. NST is the most widely used test for pregnancies complicated by diabetes mellitus.

Maternal assessment of foetal activity also seems to be a practical approach toward evaluation of foetal condition, decreased foetal movements of less than 10 in 12 hours requires further testing. Counting of foetal movement in diabetics may begin as early as 28-29 week's gestation. Doppler u/s may also be used to assess vascular resistance on umbilical vessels. (5).

The patient presented ended up with a still birth at 38 weeks despite reassuring foetal movement assessment. Non-stress test, oxytocin stress test and biophysical profile had not been performed.

In the past, a policy of early delivery in pregnancies complicated by diabetes was almost the rule. Many authorities recommended delivery at 36-37 weeks. This resulted in very high caesarian section rates and more infants with RDS.

Its now widely recognized that if the pregnant diabetic patient and her infant are under stringent metabolic control and anterpartum surveillance, delivery may be safely delayed in most cases until term or the onset of spontaneous labour (5,13). This new approach has increased the incidence of spontaneous labour, resulted in a decrease in caesarian section rate and reduction of RDS rates.

Selection of the time of delivery is individualized considering the degree of glycaemic control, maternal complications and foetal well being. Some diabetics are selectively delivered at 38 weeks after foetal lung maturity has been confirmed. These include patients in poor metabolic control, worsening

pre-eclampsia, with suspected foetal macrosomia, growth retardation or polyhydramnios (5).

In certain rare cases, pre-term delivery may be necessary despite immaturity of foetal lungs. These include severe pre-eclampsia unresponsive to therapy or signs of severe foetal compromise. Other relative indications of delivery include worsening diabetic nephropathy leading to renal failure, worsening retinopathy not responding to laser therapy.

Whether induction or elective cesarean section (C/S) is done, depends on favourability of cervix and the estimated foetal size. Induction is not done if estimated foetal weight is 4 kg or more, instead elective cesarean section is preferred to prevent traumatic vaginal delivery. If the cervix is unfavorable at term, it is ripened before induction with prostangladins, laminaria or intracervical baloon. (5).

During labour and delivery, it is necessary to maintain maternal euglycemia to avoid neonatal hypoglycemia. A decrease in insulin requirement has been documented, particularly in the first stage of labour. Therefore in-patients undergoing induction of labour, the morning insulin dose, should be withheld and glucose levels determined once every hour. In well-controlled patients one unit of insulin per hour and 3-6 GMS of glucose per hour are usually required to maintain a glucose level of 3.8 - 5.0 mmo/dl (5).If the patient presents in spontaneous labour and had her morning insulin, additional insulin may not be necessary throughout labour and delivery, but a continuous glucose infusion will be necessary (125 mls/hr of 5% dextrose) (5). Though the patient presented came in labour, her blood sugar level was high and a load of insulin was given followed by on unit per hour. Blood sugar was monitored one hourly.

When an elective cesarean section is planned a diabetic patient, it should be scheduled early in the morning when the sugar levels are usually in the normal range. Infusion without glucose is preferred and glucose levels are monitored frequently. (5).

After delivery, a dramatic decrease in insulin requirement arises and there is no need for stringent glucose control and levels <11 mmol/l are satisfactory. In the first few days after delivery, it is preferable to give regular insulin sub-cutaneously before each meal on the basis of plasma glucose levels. After the patient is able to eat regular meals, she may get one half of the pre-pregnancy dosage of insulin in 2 daily injections. (5).

Breastfeeding should not be discouraged, but the mother is advised to increase her caloric intake just before nursing because insulin requirements are lower after breastfeeding and may result in hypoglycemia. (5).
Causes of maternal deaths have shifted from diabetic ketoacidosis to cardio-renal complications (diabetic retinopathy and nephropathy)

Estrogen - progestin oral contraceptives and intrauterine device are best avoided if possible in women with overt diabetes. Combined oral contraceptives are likely to worsen diabetes or its vascular complications (6). The progestin implant (Norplant) has minimal effect on carbohydrate metabolism and my be the ideal contraception in diabetic women. Progestin only oral contraceptives also may be utilized. Barrier methods are also excellent choices for reversible contraception, followed by sterilization once the woman wants no more children (6). These options were given to the patient presented.

REFERENCES

1. Jack M. Schneider - Pregnancy complicated by Diabetes Mellitus. In: Current Obstetric and Gynaecologic Diagnosis and treatment, 7th edition. Appleton and Lange publications, Connecticut, USA, 1991 pages 364-372.
2. Manyara Kung'u - A review of Diabetes in pregnancy at KNH MMED Thesis U.O.N 1980.
3. Richard beard, Michaeal Maresh Diabetes mellitus. In: medical disorders in Obstetric practice, 2nd edition, Black well scientific publications, Oxford, 1989, pages 584-630.
4. National Diabetes Data Group. Classification and diagnosis of diabetes mellitus, Washington DC. National Institute of Health, 1986.
5. Diabetes Mellitus in pregnancy. In: Medicine of the foetus and mother, 2nd edition by E. Albert Reece and John and Hobbins, Lippincott Raven publishers, Philadelphia, 1999 pages 1055-1084.
6. Cunningham FG, MacDonald Pc, Gant GN et al Endocrine disorders. In: Williams Obstetrics, 21st edition, Appleton and Lange, pages 1201-1212.
7. O'Sullivan JB, Mahan CM. Criterial for the oral glucose tolerance test in pregnancy. Diabetes 1964; 13;278.
8. Freinkel N, Hadden, D. Summary and recommendations of the second International Workshop-Conference on Gestational Diabetes Mellitus. Diabetes 1985, 34:123.
9. American College of Obstetrics and Gynaecology. Management of diabetes mellitsu in pregnancy. ACOG Technical Bulletin (Chikago) 1986, No. 92:1.
10. Sacks D, Abu-Fadil S, Karten G et al. Screening for gestational diabetes with one hour 50g glucose test. Obstet Gynecol, 1987, 70:89.
11. Watson W. Serial changes in the 50g oral glucose test in pregnancy: implications for sreening. Obstet Gynecol 1989, 74:40
12. Coustan DR, Imarah J. Prophylactic Insulin treatment of getational diabetes reduces the incidence of macrosomia, operative delivery and birth trauma. Am J Obster Gynecol 1984;150;836.
13. Gabb SG. Management of diabetes mellitus in pregnancy. Am J Obstet Gynecol 1985, 153:824

OBSTETRIC CASE NO 4

SICKLE CELL DISEASE IN PEREGNANCY DEIVERY BY EMERGENCY CAESEREAN SECTION - LIVE BABY

NAME E.A DOA: 9/12/2000

IP NO 0553021 DOD: 29/2/2001

AGE: 21years LMP: 26/5/2000

PARITY: 0+0 EDD: 3/3/2001

PRESENTING COMPLAINTS

The patient was admitted with two weeks history of generalized body pains, yellowness of eyes, difficulties in breathing, palpitation and hotness of the body.

HISTORY OF PRESENTING COMPLAINTS

She had noted generalized body pains, yellowness of eyes, and difficulties in breathing, palpitations and hotness of the body for 2 weeks prior to admission. The illness had been progressive; she had not sought any treatment. She gave no history of transfusion, no itchiness of body or contact with some one with yellow ness of eyes. She gave history of general bone pains and weight loss.

PAST OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was para 0+0. She had her last menstrual period on 26/5/2000 and therefore her expected date of delivery was 3/3/2001. At the time of admission she was at 33 weeks gestation. She had attended antenatal clinic at a private clinic in Kayole, but only twice and no antenatal profile had been done. She gave no history of contraceptive use.

PAST MEDICAL HISTORY

She had been admitted with a similar illness in 1985 at Kisumu Hospital. She was transfused with 2 pints of blood at that time. But she had not been told what the medical problem was them. She had not been admitted during this pregnancy.

FAMILY AND SOCIAL HISTORY

She was a single lady working at Jomo Kenyatta Airport as a receptionist and living with her parents at Kayole. Parents are small-scale businessmen at Kayole. She gave no known history of similar illness or other chronic illnesses in the family. She did not smoke or take alcohol.

PHYSICAL EXAMINATION

She was sick looking, dyspnoeic, febrile, moderately jaundiced, moderately pale, not cyanosed, no leg edema or lymphadenopathy.
Vital Signs - Blood pressure was 110/70 mm Hg. Temperature was 38.40 C, Pulse rate was 100/minute, regular, high volume and respiratory rate was 40/minute.

RESPIRATORY SYSTEM
The chest was symmetrical and hyperactive. The patient was dyspnoeic with flaring alae nasi, utilizing accessory muscles of respiration. Chest had basal crepitations bilaterally and bronchial breath sounds on the upper lung fields and no rhonchi.

CARDIOVASCULAR SYSTEM

The praecordium was active; the apex beat was in the 5^{th} intercostal space in the mid-clavicular line. Heart sounds I and II were heard and normal, no murmurs were noted.

CENTRAL NERVOUS SYSTEM
This was essentially normal.

ABDOMINAL EXAMINATION
Abdomen was uniformly distended. Fundal height corresponded to 34 weeks, fetus in cephalic presentation, longitudinal lie, fetal heart rate 140/minute and regular. She had tender hepatomegaly, 4 cm below right subcostal margin along the mid-clavicular line. She had no palpable spleen.

PELVIC EXAMINATION
This was not done, as there was no indication.

DIAGNOSIS

A diagnosis of hemolytic anemia in pregnancy at 33 weeks with congestive cardiac failure was made to rule out malaria or sickle cell disease.

MANAGEMENT PLAN
- To admit the patient
- Nurse her in propped up position
- Investigations done - blood slide for Malaria parasites, Blood for Liver function tests, Group and cross-match, haemogram, sickling test, Chest X-ray (shielded)
- Blood for antenatal profile - VDRL, HIV, Blood group.
- Patient was started on Digoxin 0.25mg orally once daily and antibiotics - crystalline pencillin and gentamycin. Analgesics were given with

diclofenac injection and pethididne. Urinalry input was charted against the output and patient was planned for transfusion and 3 units given gradually under cover of I.V lasix.

RESULTS OF INVESTIGATIONS

1. blood slide for MPS was negative twice
2. Haemogram - WBC - 14.5 x 109/L
- HB - 8.6 g/dl
- Platelets - 457 x 109/L
- MCV - 101.9 fl
- MHC - 32.2pg
- MCHC - 31.6 g/dl

Polymorphonuclear leucocytes 69% with toxic franulation.

Lymphocytes - 29%
Monocytes - 2%
Polychromasia noted.

3. Haemoglobin electrphoresis - HbSF

4. Urinalysis - Leucocytes 3+

   Culture- growth of 10,000 micro-organisms/ml of klebsiella sp sensitive to nalidixic acid and ofloxacin, resistant to nitrofurantoin and ampicillin.
5. LFTs - normal
6. Sputum for AFBs - Negative x3
7. Blood group B -Rh positive
8. HIV - NEGATIVE

Further in the management of this patient the haematologist was involved, as now the cause of the haemolytic crises was the sickle cell disease. Hyper-transfusion with a further 3 units of blood and liberal hydration both orally and intravenously was recommended. Prophylactic folic acid and paludrine were started. A fetal kick chart was kept by the patient and remained satisfactory. The fever settled within the first week of treatment with improvement of the general conditions of this patient.

For the two months that she remained in the ward,she got there other painful sickling crises and was managed accordingly with I.V rehydration and pethidine. On 15th February 2001, when she was at 38 weeks she complained of PV bleeding and lower abdominal tenderness. A speculum exam indicated slight bleeding from the closed cervical OS. An obstetric utrasound done then indicated abruptio placenta with a small retro-placental bleed.

Inview of abrutio placenta at term with a viable fetus, the patient was prepared for emergency caesarean section. Adequate reyhdration and

oxygenation was done as a precaution before anaethesia and surgery. Blood was also taken for grouping and cross- matching. Analgesia was given with pethidine and the patient was started on prophylactic antibiotics.

At cesarean section, a live male infant 2.6 kg was delivered, Apgar score was 7/1, 10/5. A small retro- placental clot of 150 mls was found on delivery of placenta and membranes. In the postoperative period, intravenous fluids were maintained at 500mls every 4 hours for the first five post -operative days. Antibiotics and pethididne were also given. On the 3rd POD,she had a painful crisis, which was managed with intravenous fluids and pethidine, antibiotics were continued. Folic acid and paludrine were also restarted on 3rd POD. On the 14th POD, the patient had stabilized and was ready for discharge. She was thus discharged home on oral antibiotics,Ampiclox, folate, Paludrine and Indocid, to come for follow-up in the haematology clinic in 2 weeks and postnatal clinic in 4 weeks.

POSTNATAL FOLLOW-UP

She failed to turn up for post natal check - up but after 6/12, she presented with bone pains in the surgical ward and was managed for sickling crises and two weeks later she was discharged.

DISCUSSION

Presented here is a primigravida admitted in haemolytic crisis, successfully managed and delivered at term by caesarean section due to antepartum haemorrhage. Causes of anaemia in pregnancy can be acquired or hereditary. Hereditary causes of anaemia include haemoglobinopathes and hereditary haemolytic anaemia. Sickle cell haemoglobin (haemoglobin - S) results from a single B - chain subsitution of glutamic acid by valine, because of A for T substitution at the codon 6 of the B-c globin gene. (l). Valine is hydrophobic while glutamic acid is hydrophilic and therefore HbS is less soluble in blood . when oxygen concentration is low, Hbs polymerizes, thereby forming tactoids, which make red blood cells (RBCs) to sickle. Sickling is however reversible if reduction of oxygen tension is only for a short period. Sickle cells are particularly liable to splenic sequestration and haemolysis, hence the chronic haemolytic anaemia. (1)

The gene causing sickle cell disease is inherited as an autosomal recessive trait irrespective of sex. Inheritance of the gene responsible for the production of HbS from both parents results in sickle cell disease and from one parent results in sickle cell trait. Sicle cell anaemia (SS disease), sickle cell haemoglobin C disease (SC disease) and sickle cell - B - thallassemia disease (S-B - thalassemia disease) are the most common of the sickle cell haemoglobinopathies. Maternal and Perinatal outcomes are altered markedly in women with sickle cell anaemia. These adverse outcomes are related to the vascular complications of sickling but not the anaemia. Maternal morbidity and mortality are all increased with these haemoglobinopathies. (1,2).

Prevalence and incidence of sickle cell disease (SCD) varies both geographically and racially. In the U.S, 1 in 12 Africa Americans has the sickle cell trait. The theoretical incidence of sickle cell anaemia among Africa - Americans is 1 in 576, but the disease is not so common in pregnancy because of an earlier high mortality rate, especially during early childhood (1). In Sub-Saharan Africa 1-2% of infants are born with SCD (3). In Kenya, the diseasse is frequent in Nyanza, Western and Coast Provinces and is second to malaria as a cause of anaemia. The patient presented was from Nyanza Province.

Pregnancy is a serious burden to women with haemoglobinopathies. This is especially true for those with haemoglobin SS disease in whom the anaemia often bocomes more intense, sickle cell crises usually become more frequent and infections and pulmonary complications are more common (1). Sickle cell trait (HbAS) results in no detectable abnormality and crises are rare. Hypoxia, acidosis, infection or dehydration may precipitate sickle cell crises and may be life threatnening (1).
Shortly before and after delivery, these patients are liable to severe bone pain crises that may be complicated by marrow and bone embolus and systolic hypertension with albuminuria " pseudotoxaemia". (1,4).
A particular worrisome pulmonary complication is related to embolization of necrotic bone marrow fat and celluar debris and acute respiratory insufficiency may develop (1)

These patients also have high frequencies of urinary tract and other infections during pregnancy and in the pueperium, they are liable to infection especially wound sepsis (4).
The patient presented had urinary tract infection in pregnancy but did not develop wound sepsis.

Sickle cell disease in pregnancy puts the fetus at some risks like, genetic transmission, abortion, still birth, growth retardation and pre-term pregnancy.

Perinatal mortality can be as high as 33% but may be reduced to around 10% with good antenatal care and careful supervision of delivery and pueperium. (4). The outcome for both mother and baby will improve with intense antenatal supervision by a team of obstetrician and haematologist.
Clinically the hallmarks of sickling episodes are periods, during whtich there is ischaemia and infarction within various organs, " sickle crises". In addition to painful crises, there may be aplasltic, megaloblastic, sequestration and haemolytic crises (1). The patient presented had a haemolytic and a painful crises.
Chronic and acute changes from sickling include bony abnormalities ,renal medullary damage, autosplenectomy by adulthood in SS patients, spelnomegaly in other variants, hepatomegaly, ventricular hypertrophy, pulmonary infraction, cerebro-vascular accidents, leg ulcers and propensity to infection and sepsis. (1)

In absence of infection or nutritional deficiency haemoglobin concentration usually does not fall below 7g/dl. But any factors imparing erythropoesis or increasing red celll destruction or both aggravates the anaemia (1)

Screening consists of examination of blood for RBC indices (MCV), sickledex, Haemoglobin electrophoresis, and HBA2 and HB F quantification.
Management during pregnancy includes careful antenatal supervison and prophylactic antimalarials and supplemental folic acid (1,4). Supplemental folic acid 1 mg per day is given. Blood transfusion with red cell concentrates is indicated if the patient approaches obstetric delivery with Hb <8g/dl. However, prophylactic red cell transfusions and their use remain controversial, with benefits being slight if any and certainly outweighed by the risk of complications from transfusion in the tropics (1,4,5).
The patient presented had been on folic acid and paludrine prophylaxis, though her antenatal care was not intense. Her haemoglobin levell was 8.6g/dl
Overt bacteruria and acute pyelonephritis are increased considerably and careful surveillance for bacteruria is important. (6)
Pneumonia due to Streptococcus Pneumonia is common and the woman in advance pregnancy may not tolerate servere pulmonary infections. Most authorities recommend polyvalent pneumoccocal vaccine for these women (1).
Acute infarction is usually accompanied by severe pain and because bone marrow is frequently involved, intense bone pain is common. Relieve of pain is not afforded by heparinization or dextran.
Intravenous hydration is provided and for severe pain, Meperidine or Morphine are administered parenterally. Red cell transfusions administered after the onset of severe pain have no dramatic effect on the intensity or duration of pain (1,7).

Bacause of the high incidence of fetal growth retardation and increased perinatal mortality, careful fetal assessment is necessary. Some workers have recommended weekly non-stress testing, beginning at 32 weekis, along with serial ultra sonography to monitor fetal growth and amniotic fluid volume (1). The infant of the patient presented weighed 2.6 kg at 38 weeks, which was low birth weight.

Labour and delivery in women with haemoglobin SS disease should be managed the same way as for women with cardiac disease. The woman should be kept comfortable, but not oversedated. Epidural analgesia is ideally suited. Compatible blood should be available. Obstetric delivery is often complicated by pelvic disproportion, the result of impared growth during childhood, and in some African countries about half of the patients are delivered by caeserean section.
If a difficult vaginal or cesarean delivery is contemplated and the haematocritic is less that 20%, the haemoglobin concentration should be increased by packed erythrocyte transfusions, taking care to prevent circulatiory overload, ventricular failure and pulmonary edema. (1).

Newer therapies include, 5-azacytidine, butyrate and hydroxyurea which selectively increase haemoglobin F production, and with increased haemoglobin F production, there is less sickling (8). The safety of these preparations in pregnancy is not clear yet .

Because of the chronic debility from sickle cell anemia, the more complications caused by pregnancy and shortened life span of women with sickle cell anemia, a sterilication or at least a very effective means of contraception is indicated even for women of low parity. Combined oral contraceptives are relatively contra-indicated in women with sickle haemoglobopathies because of the potental risk of thrombo-embolism. Intra-uterine contraceptive devices are likely to increase the incidence of pelvic infections and should be avoided. Progesterone only pills, Norplant implants, Depo-provera and barrier methods can be used (1). These options were given to our client.

Prenatal diagnosis of sickle cell disease through amniocentesis or chorionic villus sampling is available in some other parts of the world, but not in our set up. If prenatal diagnosis of sickle cell disease is made, genetic counseling and options can be given to a couple.

REFERENCES:

1. Cunningham FG, Macdonald PC, Gant NF, Leveno. In: Haematological disorders, Williams obstetrics, 19th edition Appleton and Lange, 1993, pages 1179 - 1181

2. Poers Dr, Sandhu M, Miland Weis J. Pregnancy and sickle cell disease. Obstet. Gynecol, 1986, 67:217

3. Van den Broek N. Anemia in pregnancy in developing countries. Br. J. Obstet Gynecol, Vol 108, April 1989,pgs 385-390.

4. Alan F Fleming Haematological disorders in the tropics. In: Mansoni's tropical diseases, 20th Edition by Gordon Cook, 1996; pages 129-132

5. Perry KG, Morrison JC Haematological disorders in pregnancy. Obstet Gynecol. Clin. North. Am 1992, 19: 783-799

6. Cunningham FG. Urinary tract infections complicating pregnancy. Clin Obstet Gynecol, 1988,1,891.

7. Sickle cell disease in: Turnbull's obstetrics, 2nd edition, 1996, by Geoffrey chamberlain pages 254, 262-3

8. Rodgers GP, Dover GJ et al: haematological responses of patients with sickle cell disease to treatment with hydroxyurea. N Engl J Med, 1990, 322:1037

OBSTETRIC CASE NO 5

RHESUS NEGATIVE - PRIMIGRAVIDA

Name:	H.W.	DOA: 3/7/02
Age:	32	DOD: 5/7/02
IP No.	0801278	Parity: 0+0

PRESENTING COMPLAINTS

She was admitted to Kenyatta National Hospital labour ward from home with history of lower abdominal pains and backpain for four hours. There was no drainage of liquor, per vaginal bleeding or discharge. She had been followed up in our antenatal clinic since twenty weeks gestation.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

She was a primigravida. Her last menstrual period was on 26.9.01, her expected date of delivery was 4.7.02 and gestational age by dates was 40 weeks.

She had booked antenatal care at twenty weeks at KNH. The antenatal attendance was regular and uneventful. Antenatal profile was done and her blood group was O Rhesus negative, haemoglobin was 11.1g/dl, VDRL was negative and screening for HIV was also negative. Her husband's blood group was O Rhesus positive.

She had indirect Coombs test done at 28 and 35 weeks gestation and was negative on both occasions.

Her menarche was at 15 years. The periods were regular every 21 days and flow lasting 3 days. She had never used any contraception.

PREVIOUS MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She was a married, teacher staying in Huruma with her husband. She neither smoked cigarettes nor took alcohol. There was no family history of chronic illness.

EXAMINATION

She was found to be in good general condition, not pale, not jaundiced and no edema. Her vital signs were, BP 120/70mmHg, temperature 36.0°C, and pulse rate 70/min.

The cardiovascular, nervous and respiratory systems were normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was term, longitudinal lie and cephalic presentation. The fetal heart was heard and regular at 142/min. There were palpable contractions two in 10 minutes and lasting 30 seconds (moderate contractions). The head was 3/5. The liver and spleen were not palpable.

PELVIC EXAMINATION

The external genitalia were normal. The cervix was 8cm dilated, fully effaced. The membranes were bulging. Artificial rupture of membranes was done and old meconium stained liquor grade II drained. There was no caput or moulding. The pelvis was adequate.

DIAGNOSIS

A diagnosis of Para 0+0 at term, Rhesus Negative in Labour with old meconium stains grade II was made.

MANAGEMENT

The above findings were explained to the mother. She was put on 10% dextrose and partogram was started. Arrangements were made for collection of cord blood on delivery.

She progressed well with good uterine contractions and descent of the foetal head and cervical dilation. After 3 hours she had an urge to push and bear down. On review the fetal heart was regular and descent 1/5 up. Vaginal examination the cervix was fully dilated with no caput or moulding. She was taken to second stage room where she was encouraged to push. She delivered a live female infant with Apgar score of 8 in 1 minute and 10 at 5 minutes. Birth weight was 3700gms. The placenta was delivered by controlled cord traction, was complete and healthy weighing 550grams.

Cord blood was taken for haemoglobin, bilirubin, and blood grouping and direct Coombs test. Intramuscular 0.5mg of ergometrine was given to the mother on the delivery of the head. Estimated blood loss was 250mls.

The baby was taken to nursery and the mother to post-natal ward. The results of the cord blood were Haemoglobin 16.5g/dl; blood group "O" Rhesus positive; serum bilirubin- total 2.0 mmol/L and direct O mmol/L. Direct Coombs test was negative. The baby was discharged from nursery in the second day. The mother was given 300ug of anti-D immunoglobulin. The mother and baby were discharged to be seen in the postnatal clinic in six weeks.

FOLLOW-UP

She was seen in postnatal clinic after six weeks. Both mother and the baby were healthy. Family planning and future antenatal care were discussed. She was directed to clinic 66 (Family Planning) for contraception.

DISCUSSION

The patient presented was a para 0+0, rhesus negative mother who delivered a rhesus positive baby. She was given anti-D-immunoglobulin in the immediate post-partum.

The discovery of the rhesus (Rh) factor and therefore explanation of the most cases of haemolytic disease in the fetus and newborn was made by

Landsteiner and Weiner in 1940 (1). Effective maternal prophylaxis was made in 1961 and 1963 (1).

The Rh antigens are located on human erythrocyte cell surface membrane and can be demonstrated as early as six weeks of gestation (2). The Rh blood group is the most complex human blood group. The Rh antigens are grouped in 3 pairs, Dd, Cc and Ee. The major antigen in this group is Rho (D) or Rh factor. A rhesus negative mother carrying a rhesus positive fetus may have fetal cells crossing into maternal circulation in different amounts to cause maternal antibody production against Rhesus factor. The initial antibodies are IgM and hence unable to cross the placenta. Further provocation produces IgG antibodies, which cross the placenta into the fetal circulation resulting in haemolysis of the fetal cells, hence fetal anaemia and haemolytic disease of the newborn (1,2,3).

The incidence of Rh negatively among the Caucasian population is about 15-16%, blacks in USA 8% and in Kenyan women a rate of 2-5% has been reported. The incidence is Mongoloid races is nil (3-5).

Isoimmunization occurs following incompatible blood transfusion or following fetomaternal haemorrhage between a mother and an incompatible fetus. With no apparent predisposition, fetal cells have been detected in maternal blood in 6.7% of women in first trimester, 15.9% in second trimester and 28.9% in third trimester (3). As little as 0.1ml of Rhesus positive fetal cells will cause sensitization. The likelihood of sensitization is 6% after delivery of Rhesus incompatible fetus. The risk of sensitization depends on several factors, including - her ability to respond to Rh antigenic stimulus, with 2/3 of them being non-responders; ABO incompatibility; strength of Rh antigenic stimuli and volume of blood crossing into maternal circulation. Our patient was ABO compatible.

There are a number of predisposing factors to fetal maternal haemorrhage. These include spontaneous or induced abortion, amniocentesis, abdominal

trauma, placenta and caesarian section (1,2,3). The patient presented did not have any of these risk factors.

The management of Rh-negative mother in pregnancy depends on whether they are sensitized or not. In unsensitized cases, like our patient, indirect Coombs antibody-screening tests are performed pre-pregnancy or at the first antenatal visit. The test is repeated again at 28 weeks and every four weeks thereafter. Anti-D immune-globulin is given at 28 weeks and again at 34 weeks. If the test remains negative the patient is delivered at 40 weeks gestation to avoid risk of sensitization. If the mother becomes sensitized she is managed accordingly. Anti-D given antenatally during the third trimester of the first pregnancy is highly protective not only for that pregnancybut for the next two prengnacies and possibly the third. There is 1-6% failure of prophylactic anti-D when given after delivery compared to 0.1% when given antenatally (6). Our patient was not given anti-D antanatally due to financial constraints, but she was given after delivery.

For the sensitized mothers, the indirect Coomb's test is done in titres and if the tires remain below 1:16, the pregnancy is allowed to proceed to term. For titres above 1:16, a further assessment with amniocentesis or fetal blood sampling to assess the degree of haemolysis is performed. Fetal blood sampling offers a direct measure of fetal haemolysis but is more technical not routinely done in our hospital. After amniocentesis the amniotic fluid is analyzed for amount of bilirubin, which provides and indirect measure of haemolysis. The amniotic fluid is analyzed by spectrophotometry and the amount of light absorbed by bilirubin at 450 nm plotted on semilogarithmic scale versus gestation (Liley's Chart). Further management will depend on the initial level of haemolysis and gestational age. The Liley's chart has 3 zones. Zone 1 means unaffected or mildly affected fetus and amniocentesis is repeated every 2-3 weeks and delivery is

near term after lung maturity. Moderately affected fetus fall into zone 2 and amniocentesis is repeated every 1-2 weeks, delivery is on attainment of lung

maturity. Zone 3 is severely affected fetus and delivery should be immediate or if the fetus very pre-mature intrauterine blood transfusion should be done. Intra-uterine fetal transfusion is performed using 'O' negative low titre, glycerolized and irrigated packed cells (1,2,3,6). Our patient was not sensitized, hence these tests were not indicated.

Isoimmunization can now be prevented by use of anti-D immune -globulin. It is now established practice to give anti-D immune-globulin at times of recognized risk of feto-maternal transfusion. These include threatened abortion, inevitable and therapeutic abortion, hydatidiform mole, ectopic pregnancy, during perinatal diagnosis investigations like chorionc villus sampling and amniocentesis, external cephalic version and at delivery at all gestations (1,2,3,6). In our unit 300mg of anti-D immune globulin are given within 72 hours post delivery.

REFERENCES

1. Muler A.W., Collander, R. Multiple pregnancy and other multiple complications. Obstetrics Illustrated, 4th ed.1989; Churchill Livingstone, 10:223.

2. Cunningham, F.G., McDonald, G. Diseases of the fetus and newborn William's Obstetrics 21st Ed.2002; Appleton and Lange, Philadelphia, **39:**

3. Pernoll, M.L. Late pregnancy complications. Current Obstetrics and Gynaecologic Diagnosis and Treatment. 8th Ed. 1994;Appleton and Lange, Connecticut, **15**:331-343.

1. Muroki, F.K.T. The Rhesus problem after abortion in Kenyatta National Hospital. M.Med Thesis, 1987;UON.

2. Mulandi, T.N. A 2-year prospective study to slow the effectiveness of anti-D immuneglobulin in the prevention of Rh isoimmunization in Kenyan Women of African Origin at Kenyatta National Hospital. M.Med Thesis, 1987;UON.

4. Thorton, J. Efficacy and long term effects of antenatal prophylaxis with anti-Dimmuneglobulin. Ostet. Gynacol. Surv. 1990; **46**: 117

OBSTETRIC CASE NO 6

URINARY TRACT INFECTION IN PREGNACY - SUCCESSFUL DELIVERY

Name:	S.W.	L.M.P.:	19.11.01
Age:	32 years	E.D.D.:	26.8.02
IP no:	0682499	Parity:	2+0
D.O.A.:	13.8.02	D.O.D.:	15.8.02

PRESENTING COMPLAINS

S.W. came with complains of lower abdominal pain for 2 days

HISTORY OF PRESENTING COMPLAINS

She was well prior to onset of lower abdominal pains, which were increasing. She had not vaginal bleeding or discharge. She also had dysuria and frequency.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

She is a para 2+0 gravida 3. The last normal monthly period was on 19/11/02. Her expected date of delivery was 26/8/02. Her gestation was 38 weeks. She attended antenatal clinic in a Langata private clinic since 5 months gestation. Her antenatal profile was as follows:-

Haemoglobin - 11.5g/dl

VDRL - negative

Blood group - B positive

Her urinalysis and blood pressure were normal through out the antenatal visits. She had two previous deliveries in 1998 and 1999 which were by spontaneous vertex deliveries at Nakuru Nursing Home. The first was a male who weighed 3000grams and the second a male who weighed 3400grams. They are both alive and well. Her menses are regular coming after 24 to 30 days and lasting 3 days. She was on microgynon from 2000 to March 2001 . Menarche was at 14 years.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She is a secretary by profession and married to an accountant. She does not smoke cigarettes or drink alcohol. There is no family history of chronic illness.

PHYSCIAL EXAMINATION

She was in fair general condition. She was not pale, no oedema and clinically febrile. Her blood pressure was 120/70mmHg, temperature 37.8°C, pulse rate was 92/minute.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with a single fetus in cephalic presentation and longitudinal lie the fetal heart was heard and regular at 140 beats per minute. There was marked tenderness in the suprapubic area. She had tenderness in the flanks.

PELVIC EXAMINATION

There was normal external genitalia, the cervix was long, firm and posterior. There was no discharge.

DIAGNOSIS

A diagnosis of acute pylonephritis at 38 weeks gestation was made.

MANAGEMENT

Mild stream specimen of urine as taken for microscopy, culture and sensitivity. She was started on IV augmentin and paracetamol and IV fluids.

Laboratory results

Urinalysis

Ph - 6

Glucose - nil

Protein - nil

Specific gravity - 1010

Blood +

Leucocytes +++

Deposit:

Pus cells 15-20/HPF

No TV or yeast cells seen

Culture and sensitivity: E. coli seen, sensitive to augmentin, nitrofurantoin, cefuroxime, cotrimaxazole. Resistant to ampicillin, nalidixic acid.

She did well and was afebrile on the second day and was discharged home on the third day to attend antenatal clinic on augmentin and paracetamol.

FOLLOW UP

She came in labour on 28/8/02 and had a spontaneous vertex delivery to a live female infant who weighed 3350grams. Both mother and child did well and were discharged home on the 2nd post natal day to attend post natal clinic at the nearest health facility.

DISCUSSION

S.W. came with urinary tract infection in pregnancy. She was treated and discharged home.

Urinary tract infection (UTI) during pregnancy is common, Asymptomatic bacteriuria has an incidence of 2-7% as in the commonest of the urinary tract infections. Others include cystitis and pyleronephritis. Incidence of acute cystitis is 1% while that of pyelonephritis is 1-2% (1). Asymptomatic bacteriuria is when there is actively multiplying bacteria within the urinary tract. Diagnosis is obtained by finding more than 100,000 organisms per ml of clean voided specimen of urine. If not treated, 25-30% will develop acute symptomatic infection but with treatment, the rate is only 10% (2).

Pregnant women are at an increased risk of UTI's starting from the sixth week and peaking at 22 to 24 weeks. 90% of pregnant women develop ureteric dilation, which remains until delivery. Pregnant women also have increased bladder volume, decreased bladder tone together with reduced urethral tone leading to urinary stasis and urethrovesico reflux (3). 70% of women also develop glycosuria in pregnancy. All these lead to increased likelihood of developing UTIs in pregnancy.

Organisms that cause UTIs are those usually found as normal perineal flora (2). Escherichia coli is responsible for 80-90%. Others are gram negative rods like proteus mirabilis and klebsiella pneumoniae. Gram positive rods like Group B Streptococci and Staphylococci are less common. Others that are less common include ureaplasma ureolyticum, gardenella vaginalis and chlamydia trachomatis (4). The three principle presentation (4) of UTI's are asymptomatic bacteriuria, acute cystitis and acute pyelonephritis.

Asymptomatic bacteriuria is usually found by screening of urine and finding growth of at least 10^5 organisms per ml of urine, however, lower colony counts may represent active infection.

Asymptomatic bacteriuria is associated with a number of adverse pregnancy outcome. These include preterm births, perinatal mortality, anaemia and low birth weight infants (5). Thus there is need for routine screening and aggressive treatment of asymptomatic bacteriuria.

The American College of Obstetric and Gynaeoclogy recommends urine culture during the first prenatal visit and repeat in the third trimester (6). In addition, dip stick urinalysis should be done at every visit (2).

Other less expensive tests such as leukocyte esterase - nitrite dip stick were found to give variable results (7) and thus were not reliable.

Treatment of asymptomatic bacteriuria involves use of several antimicrobial regimes: selection may be on the in vitro susceptibilities but most often, is empirical.

The antibiotic should be safe for both mother and fetus. Ampicillin has historically been the drug of choice but studies have shown a 20-30% resistance of *E.coli* (8). Treatment with nitrofuratoin has proved effective in most women. Other regimens include amoxyxillin, cephalosporins. Sulfanomides may be used in the 1st and 2nd trimester but should be avoided in the 3rd trimester because the risk of kernicterus to the infant. Usual treatment is for 7 to 10 days but some authorities recommend single dose antimicrobial regimens.

Recurrence rate for all three regimens is 30% and these women may benefit from suppressive treatment in the remainder of the pregnancy (2).

In acute cystitis, there is dysuria, urgency and frequency with few systemic findings. Often there is pyuria as well as bacteriuria occasionally, there may be haematuria. 40% of patients with pyelonephritis have preceding symptoms of lower tract infection (9). Some patients may have a sterile culture because of urethritis caused by chlamydia trachomatis but a majority will have cervicitis. Treatment involves antimicrobials for 7 to 10 days, but recently there is a trend to use a 3 day course of therapy that has proved effective (2).

Acute pyelonephritis is a serious medical complication of pregnancy with an incidence of approximately 2%. It is more common after mid pregnancy often unilateral and on the right side in more than half of the cases (2). Diagnosis is made on the finding of fever, chills, flank pain with fever and the presence of bacteuria. There may or may not be signs of lower tract infection. 15% of patients with pyelonephritis have bacteriamia. It may be mistaken for labour, chorioamnionitis, appendicitis, abruptio placenta or puerperal sepsis. Most of the clinical findings are as a result of endotoxeamia. Some even

develop respiratory insufficiency. Usually the patients are toxic and hospitalization is required.

Hydration to ensure adequate urinary out put is essential. The choice of intravenous antimicrobial therapy is usually empirical. Urine and blood cultures plus haemogram and urea and electrolytes should be obtained (2).

Normally, within 24-48 hours most patients are asymptomatic and are discharged when afebrile for 24 hours on antimicrobial treatment for 7-10 days.

Ninety five percent of women with pyelonephritis will be afebrile within 72 hours. If symptoms don't resolve within 48 to 72 hours, then re-evaluation should be done. Non response may be due to urolithiasis, congenital abnormalities or peri-nephric abscess (10).

Investigations include renal ultrasound which may show pyelocalceal dilatations, urinary calculi, intrarenal or perinephric abscess.

Sometimes the scanner is not accurate and plain abdominal x-ray is required as 90% of renal stones are radio-opaque. Possible benefits outweigh fetal risk from radiation. If this is negative, the one shot pyelogram may be used.

The patient presented had acute pyelonephritis and was put on IV fluids and antibiotics with good recovery.

REFERENCES

1. Manoj K.B., Perloff D.: Cardiac, haematologic pulmonary, renal and urinary tract disorder in pregnancy In: Current obstetrics and Gynaecologic Diagnosis and Treatment. 8th edn edited by Decherney Alt ana M Pernoll Appleton and Lange 1994 chapter 22 p 428
2. Cunninghma F.G., Gant N.F., Levens K.J. et al. Renal and urinary tract disorders In: Williams Obstetrics 21edn Appleton and Lange 1997 chapter 47 p 1251.
3. Lucas M.J., Cunningham F.G.: Urinary tract infection in pregnancy. Clin Obstet Gynecol 1993 36:855-68.
4. McDowell D.R., Buchanan J.D., Fawley K.F., Gilbert G.C.: Anaerobic and other faslidious microorganism in asymptomatic bacteruria in pregnant women J. Infect Dis 1981:144:114-22
5. Harris R.E., Thomas V.L, Shelokov A. Asymptomatic bacteriuria in pregnancy: Antibody coated bacteria, renal function and intra uterine growth retardation Am. J. Obstet Gynecol 1976 126:20-5.
6. Antimicrobial therapy for obstetric patients A.C.O.G educational bulletin no 245. Washington Dc. American College of Obstetricians and Gynaecologists March 1998 245:8-10.
7. Bachman J.W., Heisse R.H., Naessen J.M., Timmerman M.G.: A study of various tests to detect asymptomatic urinary tract infections. In: An Obstetric Population JAMA 1993:270:1971-4
8. Sander C.C., Saner W.E.Jr.: Bete Lactam resistance in gram negative bocteria: Global trends and clinical impact. Clin Infect Dis 1992:15 824-39
9. Gilstrap L.C. III, Cunningham F.G., Whaley P.O.: Acute pyelonephritis in pregnancy. A retrospective study. Obstet Gynecol 1981 57:409
10. Laughin K.R.: Management of urological problems during pregnancy: Urology 1994:44 159-69

OBSTETRIC CASE 7

ANTEPARTUM HAEMORRHAGE :

ABRUPTIO PLACENTAE

Name J.A. Parity 1+0 Gravida 2.

Age 25 yrs D.O.A 24/10/02

IPNO 0840321 D.O.D 26/10/02

Presenting complaint

History of a fall followed by profuse per vaginal bleeding and abdominal pain.

History of presenting illness

She was well until the afternoon, when at around 4 pm after a heavy down pours of rain she went out to fetch some water. While carrying a bucket full of water she fell done. Soon after she developed severe abdominal pain with associated per vaginal bleeding which was profuse in nature. She had last felt fetal movements that morning although she had been busy working throughout the day. Due to the excessive bleeding and pain she decided to come to the hospital. She presented to KNH at around 10pm. She had no prior history of high blood pressure or similar symptoms in the previous pregnancy.

ANC

She had been attending antenatal clinic at Umoja.

Antenatal profile:

Blood group. O+VE.

Hb 12.0g/dl

VDRL -VE.

HIV not done

Obstetric/gynaecological history

LMP. 18/03/02 EDD 25/12/02.

Previous delivery was was in 2000 and was by SVD with an uneventful the perinatal period.

Contraception

She has used oral contraceptives intermittently..

Past medical history.

She has had no previous hospital admissions. No family history of diabetes mellitus or hypertension, or twinning.

Family social history

Housewife, resides in Nairobi's Umoja estate of Nairobi, she does not report cigarette smoking or alcohol ingestion.

Physical examination

Woman in good general condition. Moderate pallor, no jaundice nor oedema

Blood pressure. 108/40mmHg Pulse 98/min, regular.

Respiratory rate	20/min
Temperature	36.0^0C
Respiratory	Chest clear
Cardiovascular examination	Normal
Nervous system	Normal

Per abdomen

Uniformly distended
No surgical scar
Fundal height term, woody hard with moderate tenderness. The fetal lie and presentation difficult to illicit. No Foetal heart tones heard. No uterine contraction appreciated due to firmness of the abdomen.

Pelvic examination

NEG, Speculum examination.

Numerous clots evacuated from the vault. Minimal bleeding from the cervical os. The os about 8 cm dilated membranes intact no placenta visualized. Membranes rupture spontaneously and old meconium stain

Investigations

Blood grouping and cross-matching.(2 units)
Blood group O+VE.

Diagnosis. APH - ABRUPTIO PLACENTAE

Management

J. A was not bleeding actively at the time of admission. Her history was highly suggestive of abruptio placentae. Blood was taken for quick group and cross match of 2 units of blood. Intravenous access was established with a large bore cannula and crystalloid solution of normal saline started. Later this was changed to a colloid, haemacoel. She went into second stage of labour while being prepared for EUA. She delivered a fresh still birth, female who weighed 1700gm. The placenta appeared to have already separated. it was delivered almost simultaneously with the infant. There was a massive retro placental clot covering the whole of the maternal surface of the placenta. There was no evidence of calcification within the clot. The patient was put on an infusion of 40units of syntocinon over 4 hours to maintain uterine contraction. She did not require blood transfusion much as the blood had been availed neither did she go into disseminated intravascular coagulopathy.

Post-delivery Care.

She did well and was transferred to the ward in the morning in a stable condition. PCV done was 21% and a decision to withhold transfusion was made. She was clinically stable with no dizziness or headache. She had normal lochia loss and the uterus was well contracted. She requested to be discharged the next day, she was allowed home in a stable condition.

Follow-up.

She was to return after 2 weeks, for review and repeat of haemoglobin level. However she did not return.

DISCUSSION

Abruptio placenta is defined as separation of the placenta from its site of implantation before the delivery of the fetus[1]. Abruptio placenta is an obstetric emergency together with placenta praevia ,the two entities being referred to as APH. JA presented to the KNH labour ward about six hours

after her fall due to uterine hypertonus she did not know she was in labour. She had revealed haemorrhage and delivered a fresh stillbirth. She did not develop a coagulopathy.

Placental separation results when the uterine vessels hemorrhage into the substance of the decidua basalis near its interface with the placental cytotrophoblastic shelf and anchoring villi. An abruption may be total or partial, depending upon the degree of separation of the placental-decidual interface. The resulting hemorrhage typically flows through the cervical os and is visible as vaginal bleeding. Occasionally, the hemorrhage is retained between the placenta and uterus and is termed a concealed hemorrhage. Concealed hemorrhage occurs when: the placental margins remain adherent, despite an effusion of blood behind the center of the placenta, the fetal membranes retain their attachment to the uterine wall during a marginal placental separation. This blood may then erode through the membranes to invade the amniotic cavity [1].

Worldwide the incidence is about 0.4-1.3% with the incidence of abruptio severe enough to cause fetal demise being 1 in 830 deliveries. In KNH the incidence of antepartum haemorrhage was found to complicate 4.7-6.7% of all deliveries of these 15.4% were due to abruptio placenta[2].

In the pathogenesis of abruptio placenta most cases are as a result of rupture of maternal vessels in the decidua basalis that are either congenitally defective or compromised at some point during the pregnancy. Rarely, the bleeding can originate from the fetal-placental vessels. As the hematoma expands, the decidua separates and causes further uterine vascular disruption and focal hemorrhage. This eventually obliterates the intervillous space, leading to ischemia and destruction of the overlying placental tissue.

The precipitating factors of abruptio placentae are evident in most cases. In some cases, such as catastrophic trauma, a single precipitating event (e.g., motor vehicle accident or fall) likely caused the outcome. The fall in

the case of JA was the most probable cause of the abruptio. However, a single precipitating event is not evident in the majority of pregnancies with abruptio placentae. A chronic pathological process at the fetal-placental interface is likely in these pregnancies with abruption as the culmination of a long chain of events. Several studies have demonstrated a higher incidence of fetal growth disorders and preterm birth in pregnancies ending in abruption [3]. The patient discussed here was at 32 weeks gestation and delivered an otherwise grossly normal fresh stillbirth infant.

Various risk factors are associated with abruptio placentae these include: Trauma, which may cause external compression and decompression as occurs in motor vehicle accidents. Abruptions associated with trauma tend to be more severe and generally present within 24 hours of the precipitating event as occurred in this case. JA presented within six hours of the trauma. Sudden internal decompression of the uterus, such as after rupture of membranes in the setting of polyhydramnios or after delivery of the first twin, can also trigger abruptio placentae[4]. Placental implantation over a uterine anomaly or leiomyoma which are unstable sites can also undergoe torsion cause abruptio especially where there is inadequate decidualization.

Severe, but not mild, abruption is strongly associated with chronic maternal hypertension, preeclampsia superimposed on chronic hypertension, and severe preeclampsia. Hypertensive women had a five-fold increased risk of severe abruption compared to normotensive women. However, antihypertensive therapy does not appear to reduce the risk of abruption among women with chronic hypertension[5].

Ischemic peripheral necrosis of the decidua is observed in smokers and predisposes to vascular disruption . Smoking is associated with a 2.5 fold increased risk of abruption severe enough to result in fetal death; the risk increases by 40 percent for each pack per day smoked [6]. Other factors that increase the risk of abruptio include; increasing parity, cocaine abuse,

preterm premature membrane rupture, previous abruptio, inherited thrombophilia and multifetal gestation [1].

The classic symptoms and signs of abruptio placentae include: vaginal bleeding, abdominal pain, uterine contractions (tachysystole), uterine tenderness, and a nonreassuring fetal heart rate tracing. These symptoms without vaginal bleeding are suggestive of a severe concealed hemorrhage. Conversely, the presence of bleeding is often an indicator of a peripheral or marginal abruption that is less likely to disrupt the placenta or induce uterine hyperstimulation. However, the amount of bleeding does not correlate well with the extent of maternal hemorrhage and cannot be used to gauge the severity of the problem [7]. Diseminated intravascular coagulopathy (DIC) may occur with a dead baby ,it rarely occurs with a live one. In severe cases there maybe fetal demise, a nonreassuring fetal tone is suggestive of fetal compromise.

Diagnosis is mainly clinical though there are few investigations that aid in management. These include an ultrasound, which aids in excluding praevia as a cause of APH or on occasion a long-standing clot may be detected. The Kleihauer-Betke test for fetal hemoglobin may be done. Coagulopathy, particularly hypofibrinogenemia, is suggestive of abruption; a fibrinogen level below 200 mg/dL and thrombocytopenia (less than 100,000 platelets per cubic milliliter) is highly suggestive of severe abruption.

Abruptio placentae can be grade into three:

Grade 0	Abruptio that is not clinically recognizable before delivery, diagnosed by the presence of a retroplacental clot after placental delivery
Grade I	The symptoms and signs of abruptio placentae are present but Fetal heart rate is good
Grade II	As in grade I(but more servere) + foetal distress
Grade III	As in grade II(but more servere) +Foetal death

IIIA without coagulopathy

IIIB with coagulopathy

The patient presented here had abruptio placentae grade IIIA.

Patients suspected to have abruptio are closely monitored with close observations of the vital signs. Intravenous access with a wide bore canula, blood for haematocrit coagulation profile and grouping and cross matching is done. Maternal resuscitation usually involves the rapid transfusion of packed red blood cells, fresh frozen plasma, and platelets with the goal of restoring the fibrinogen level to 150 to 200 mg/dL, the hematocrit to greater than 25 percent, and the platelet count to greater than 60,000 platelets per cubic milliliter.

Mild abruptio remote from term is managed conservatively within the hospital. Corticosteroids are given to enhance lung maturation in gestations less than 34 weeks Women with more severe clinical manifestations should be monitored on the Labor and Delivery Unit. The mode and timing of delivery depend upon the condition and gestational age of the fetus, the condition of the mother (eg, hypotension, coagulopathy, hemorrhage), and the status of the cervix. The term or near term fetus should be expeditiously delivered, since rapid maternal or fetal deterioration may occur with expectant management. In the event that there is DIC heparin sould not be given due to the potential aggravation of bleeding and the likelihood that it will have reduced effect because of low levels of antithrombin III.

The mode of delivery is determined by the fetal maturity and well-being. Women with DIC are better delivered vaginally due to the risk of severe bleeding from the incision sites. Vaginal delivery only necessitates uterine contraction to aid in control of bleeding and uterotonic drugs can enhance this. Even in the presence of a couvelaire uterus uterine contraction can be effected. There should be close fetal monitoring during labour and fetal distress may necessitate delivery by emergency caesarean section. On occasion very severe maternal bleeding or coagulopathy may necessitate

caesarean delivery[8]. Tocolysis is generally contraindicated in the setting of a severe abruption with coagulopathy or evidence of fetal compromise. Tocolysis may be of value in mild cases with active preterm labor (i.e., demonstrable cervical change) prior to 33 weeks of gestation to delay delivery long enough to administer corticosteroids when there is no evidence of fetal compromise or maternal coagulopathy.

Abruption is associated with a nine-fold increase in stillbirth, a four-fold increase in preterm birth and doubling of the rate of IUGR. Stillbirths occur when the placental separation was at least 50 percent, while preterm delivery developed with milder abruptions.

There is an increased risk of a repeat abruption in a subsequent pregnancy. The risk of recurrence has been reported as 5 to 15 percent, compared to a baseline incidence of 0.4 to 1.3 percent in the general population[7]. After two consecutive abruptions, the risk of a third rises to 25 percent[9]. When the abruption is severe enough to kill the fetus, there is a 7 percent incidence of the same outcome in a future pregnancy[10].

REFERENCES

1. Cunningham FC, MacDonald PC, Gant NF et al. Common obstetrical Complications; Obstetrical haemorrhage. Williams Obstetrics 20th edition 1997; 32: 746-755.
2. Kirima JM. Antepartum haemorrhage at KNH. MMed thesis,University of Nairobi 1981.
3. Salafia CM, Lopez-Zeno JA, Sherer DM et al. Histologic evidence of old intrauterine bleeding is more frequent in prematurity. Am J Obstet Gynecol 1995;173:1065.
4. Benedetti TJ. Obstetrical Hemorrhage. In: Obstetrics. Normal and Problem Pregnancies. Gabbe SG, Niebyl JR, Simpson JL (Eds), Churchill Livingston Inc. New York, New York 2002.
5. Sibai BM, Mabie WC, Shamsa F et al. A comparison of no medication versus methyldopa or labetalol in chronic hypertension during pregnancy. Am J Obstet Gynecol 1990; 162: 960.
6. Kramer MS, Usher RH, Pollack R et al. Etiologic determinants of abruptio placentae. Obstet Gynecol 1997; 89: 221.
7. Clark SL. Placentae Previa and Abruptio Placentae. In: Maternal Fetal Medicine, 4th ed, Creasy RK, Resnik R (Eds), WB Saunders Company, Philadelphia, Pennsylvania 1999. p.623-624.
8. Sher G. A rational basis for the management of abruptio placentae. J reprod Med 1978; 21: 123.
9. Pritchard JA, Mason R, Corley Met al. Genesis of severe placental abruption. Am J Obstet Gynecol 1970; 108: 22.
10. Burrows RF, Ray JG, Burrows EA. Bleeding risk and reproductive capacity among patients with factor XIII deficiency: a case presentation and review of the literature. Obstet Gynecol Surv 2000; 55: 103.

OBSTETRIC CASE NO 8

POST-TERM PREGNANCY - SUCCESSFUL INDUCTION OF LABOUR

Name	RJK
Age	20 Years
IP NO.	0752272
DOA	24/7/02
DOD	27/7/02

PRESENTING COMPLAINT

She was admitted as a referral from a peripheral health center because she had passed her expected date of delivery by two and a half weeks. Her fetal movements were normal. She had no complaints.

OBSTETRICS AND GYNAECOLOGY HISTORY

She was a para 0 + 0 gravida 1 at a gestation of 42 weeks and 4 days. Her LMP was on 1/10/01 and her EDD was on 9/7/02. She was getting regular menses prior to conception lasting 4 days and occurring every 30 days, and had never been on any contraceptives. She however could not remember the time of quickening, and she did not have an early pregnancy scan done.

PAST MEDICAL HISTORY

This was not significant.

FAMILY AND SOCIAL HISTORY

She was in good general condition, and was not pale or jaundiced. She had no oedema. Vital signs were normal.

The respiratory, cardiovascular and central nervous systems were normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended with a fundal height corresponding to term pregnancy. Fetal lie was longitudinal with cephalic presentation. The station was 4/5 and the amount of liquor was adequate. Fetal heart rate was normal at 144 beats/min. There were no uterine contractions.

VAGINAL EXAMINATION

This was not indicated at admission.

DIAGNOSIS

A diagnosis of post-term pregnancy was made.

PLAN OF MANAGEMENT

She was admitted and started on a fetal kick chart. Amniocentesis and ante natal profile were done and an obstetric scan was ordered to assess fetal gestational age and amount of liquor.

RESULTS

- Fetal kick chart - Recorded > 10 kicks in 12 hours
- Ante natal profile
  Haemoglobin - 11.8 g/dl
  Blood Group - O Positive
- Obstetric Scan - Single viable fetus in cephalic presentation with normal cardiac activity. Liquor was normal and estimated gestation was 40 weeks by femur length and BPD.
- Surfactant Test - Both dilutions 1:1 and 1:2 positive.

FURTHER MANAGEMENT

The tests confirmed fetal maturity and a decision to induce labour was made. The patient consented to induction and a cervical score was done which revealed a score of 6. Cervical ripening was done by use of PGE2 3mg pessaries. After 6 hours of the first pessary, she started getting mild contractions and was transferred to labour ward where she was found to have a cervical dilatation of 3 cm. ARM was done and oxytocin 51U units in 500ml 5% dextrose was commenced.

Labour was monitored on a partogram and she progressed well and delivered a male infant weighing 3.35kg. the fetal skin was dry and wrinkled with long finger and toe nails.

There was no meconium staining.

Both mother and baby remained well and were allowed home on the 3rd post delivery day.

POST NATAL REVIEW

She was well on review 6 weeks postpartum, with no complaints. Systemic examination was normal. She was counseled on family planning and opted to use oral contraceptives. She was then discharged to be followed up in the FP clinic.

DISCUSSION

The patient presented was a 20 years old primigravida who presented with a post term pregnancy and an unfavorable Bishop score. She was successfully induced and delivered a live male infant.

A pregnancy is post-term if it extends beyond 293 days (42 weeks) from the first day of the last menstrual period (1). This assumes that previous menses were regular, spontaneous and not due to withdrawal bleeding and that conception occurs on the fourteenth day of the cycle. Post-term pregnancy ranges in frequency from 7-12% of all pregnancies at 42 weeks, and 3-4% at 43 weeks and above (2,3). Post-term pregnancies are associated with increased perinatal morbidity and mortality as shown by Clifford (1954) who demonstrated a "U" curve with the nadir at 270-289 days.

Although the reported incidence is 7-12% not all cases are true postdates but rather are due to wrong dates and the fetuses do not show signs of post maturity after delivery. True post term babies have evidence of post-maturity and are at a potential risk of dying (2). The features of post-maturity include a hard skull with narrow skull sutures and small fontanelles, well developed external genitalia and features of intra-uterine malnutrition e.g. dry skin with little subcutaneous fat (1,2). These babies account for an observed doubling of perinatal mortality which occurs after the 42nd week - though the risk of prenatal death is low (2.4/1000 for normally formed babies) in post-term pregnancy (4).

Various conditions that characteristically lead to lower estriol levels than found in normal pregnancies are associated with post-term pregnancy. It is thought that estrogens are needed in some pathways that lead to prostaglandin formation, which initiate labour. These include anencephaly, fetal adrenal hypoplasia, absence of fetal pituitary, placental sulfatase deficiency and extra-uterine pregnancy (2). Hereditary factors might play some role as it often runs in families and manifests in consecutive pregnancies in the same individual. Our patient did not have any obvious predisposing condition.

The post-term pregnancy is at risk for a number of perinatal complications. Most of the dangers are due to placental insufficiency leading to fetal hypoxia, and due to oligohydramnios. Some of the problems include:-

- Low APGAR score
- Meconium aspiration,
- Abnormal fetal heart tracing with persistent late or variable decelerations,
- Increased rate of unexplained fetal demise,
- Increased fetal growth - macrosomia causing difficult delivery due to feto-pelvic disproportion,
- Diminution of amniotic fluid after 40 weeks possibly due to placental aging,

- Compression accidents as a result of oligohydramnios, Growth retardation due to decreased supply of nutrients to the fetus.

Fortunately our patient did not suffer from any of these compilations.

Diagnosis of post-term pregnancy is usually by history and physical examination and is based on the date of the last menstrual period (LMP), early pregnancy ultrasound scan, early ANC booking and follow-up, and obstetric scan done on encountering the patient both to estimate fetal age and the liquor amount (1,2). Diagnosis in our patient was made by the calculation of the gestational age from the LMP and estimation of age by ultrasound scanning. Fetal maturity was further confirmed by the surfactant test.

The management of post-datism depends on the certainty of the diagnosis. If there is certainty that the patient is post-term, induction of labour is usually executed. This policy "is not associated with any major disadvantage", and may reduce the already small risk of perinatal death. It also slightly reduces the risk of delivery by caesarean section (4,5).

If there is uncertainty, monitoring should be done using a fetal kick chart (FKC) and liquor volume assessed clinically. If the head ballots, the liquor volume is good. If possible, a cardiotocography (CTG) should be done and liquor volume checked on by ultrasound twice weekly. If fetal movements or liquor are reduced, delivery should be effected. In grand multiparous patients with an unripe cervix, a caesarean section may need to be done, but if cervix is ripe, artificial rupture of membranes (ARM) alone may be successful (5). Our patient had both a FKC and ultrasound scan done as surveillance tools before induction of labour was effected.

Induction of labour is defined as an intervention designed to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix and birth of the baby (6). The term is usually restricted to pregnancies at gestations greater than the legal definition of fetal viability, taken at 24 weeks in most centers. Induction of labour is indicated when it is agreed that the fetus or the mother will benefit from a higher probability of a healthy outcome than if birth is delayed.

The process of induction should only be considered when vaginal delivery is felt to be the appropriate route of delivery (6,7,8). The onset of labour is a complex set of trigger mechanisms with prostaglandin being thought to mediate the final pathway in the chain of events.

The risks of elective inductions include:-

- Iatrogenic prematurely,
- Uterine hyper stimulation

- Increased rate of Caesarean Section (by factor of about 2%) due to failed induction, unforeseen CPD, hemorrhage or fetal distress,
- Cord prolapse,
- Change in presentation
- Intra-uterine infection,
- PROM,
- Uterine rupture,
- Water Intoxication,
- Increased neonatal morbidity and mortality.

In our set up, induction is mostly done for maternal complications related to hypertensive disorders (7). Various substances have been used for cervical ripening before labour induction. Prostaglandin gels and pessarries have been shown to change the cervical score from unfavorable to favorable, leading to decrease in induction time, increase in rates of successful induction and decrease in CS rates (2,6,7). Prostaglandins are used in our set up and the same was used to successfully induce our patient.

Intrapartum management of post-date pregnancy includes the use of electronic fetal monitoring and uterine contraction monitoring. The timing of amniotomy is still a problem as this further decreases the amniotic fluid volume and increases the possibility of cord compression. Despite this, amniotomy helps in identifying thick meconium staining and also provides a route for the fetal scalp electrode (2).

More recently, there has been a trend to begin labour induction or fetal surveillance at the end of 41 weeks,41 weeks 10days and even 40 completed weeks because of the small number of unexplained still births that occur with post-dates(2).

REFERENCES

1. Chamberlain G (ed) 1995
   Turnbull's Obstetrics. Churchill Livingstone, Edinburgh

2. Cunningham F. G., Gant F. N., Mcdonald P. C,
   Breech Presentations.
   In William Obstetrics.
   20th Ed 1997, Chapter 18; p. 435-443.
   Appleton and Lange, USA

3. J. Bartinick
   Post-Term Pregnancy: Computer Analysis of the Ante Partum Fetal Heart Rate
   Int J. Gyne & Obstet Vol. 37, No. 4, April 1994 Pg. 243.

4. Donald I
   Practical Obstetric Problems, Lloyd Luke Med Publications, 5th Ed. 1989
   Chap II - Induced Labour

5. Kaguta T
   Review of Induced Labour: Outcome and Complications as seen at KNH
   MMed Thesis, UON 1984

6. RCOG Clinical Guidelines : Induction of Labour
   RCOG Press, London, August 2001

OBSTETRIC CASE NO 9

PRETERM PREMATURE RUPTURE OF MEMBRANES (PPROM) - INDUCTION-LIVE BABY

NAME: M.N.		PARITY:	0+0
AGE:	21 Years	D.O.A.	31-7-00
IPNO:	0676328	D.O. D.	4-8-00

PRESENTING COMPLAINT

The patient presented with a one-day history of drainage of liquor.

HISTORY OF PRESENTING COMPLAINT

The patient started experiencing wetness on her thighs and when she stood up there was sudden gush of fluid, which drained down to the feet. The drainage started spontaneously and liquor was clear. She did not have vaginal bleeding and also did not have any abdominal pains. She did not have dysuria, urinary frequency or preceeding history of vaginal discharge.There was no change in fetal movements.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was a primigravida. Her last menstrual period was on 29-11-99 and the EDD was

6-9-00. The gestation by dates at the time of admission was 34* weeks. She had not attended any antenatal clinic. She attained her menarche at the age of 15 years. Her menses were regular occurring every 28 days and flow lasting 3-4 days. She had never used any contraceptives.

SOCIAL AND FAMILY HISTORY

She was a single lady in college. She lived with her parents at Ngong. She never smoked cigarettes nor took alcoholic drinks. There was no history of chronic illness in the family.

PHYSICAL EXAMINATION

The patient was in good general health, with no jaundice, not pale, afebrile and had no eodema. Her blood pressure was 130/80mmHg, the pulse rate was 84 beats per minute and the temperature was $36.7^{0}C$.

The respiratory, cardiovascular and central nervous systems were essentially normal.

ABDOMINAL EXAMINATION

There was no tenderness on palpation. The fundal height corresponded to 34 weeks, the lie was longitudinal and presentation was cephalic. Fetal heart was heard and was regular at 144 beats per minute. There were no palpable contractions.

SPECULUM EXAMINATION

Vulvo-vaginal toilet was done, after which the speculum was inserted into the vagina aseptically. The vaginal walls were normal in appearance. The cervix was about 1 cm long, central, closed and there was obvious active drainage of clear liquor through the cervical os which was not foul smelling. There was also a pool of liquor in posterior fornix.

IMPRESSION

An impression of preterm premature rupture of membranes was made.

INVESTIGATIONS AND RESULTS

Haemogram:

Haemoglobin	-	13.0g/d/
WBC	-	$8.2x10^{9}/1$
RBC	-	$3.9x10^{12}/1$
PLT	-	$220x10^{9}/1$

Ultrasound (1-8-00)

A single viable fetus in cephalic presentation was demonstrated. Fetal heart rate was at 130 beats per minute. Age by biparietal diameter correspond to 35 weeks and 2 days. Abdominal circumference corresponded to 34 weeks and 2 days. Femur length corresponded to 34 weeks and 4 days. Liquor was markedly reduced. Placenta was fundo-posterior.

MANAGEMENT

The patient was admitted for bed rest and was started on metronidazole and amoxyl. The following day after the ultrasound a decision to deliver the patient was made. The decision was conveyed to her, after which she was taken to labour ward. She was put on syntocinon and went into active labour. Labour progressed well and after 6 hours she delivered vaginally a live male infant weighing 2800gms with an Apgar score 8 and 10 at 1 minute and 5 minutes respectively. The placenta weighted 500gms. The baby was initially admitted to the New Born Unit where prophylactic antibiotics were started and on 2nd post-delivery day the baby joined the mother in the ward and both discharged on the same day. She was advised to come for review after 6 weeks, but she did not come as scheduled.

DISCUSSION

The patient presented was para 0+0 at 34 weeks gestation who presented with a history of spontaneous draining of liquor for one day. She was found to be afebrile, clinically at 34 weeks gestation and not in labour. Active management was employed after ultrasound confirmation of the gestation and a live infant was delivered vaginally. The policy in KNH is towards active management for any patient presenting with PPROM after 34 weeks gestation.

Fetal membranes are composed of 2 layers (amniochorial membrane) derived from amnion and chorion. They are sealed and contain amniotic fluid by 12th week of pregnancy (1).

Premature rupture of membranes (PROM) is rupture of fetal membranes with leakage of amniotic fluid more than 8 hours before onset of labour, regardless of gestation (2,3).
Preterm premature rupture of membranes (PPROM) is rupture of membranes before 37 completed weeks. The patient presented was at 34 weeks gestation, therefore, she had PPROM.

Premature rupture of membranes (PROM) occurs in 10.7% of all pregnancies and 94% the fetus is mature while in 5% it is preterm (2,3). The incidence of Kenyatta National hospital has been quoted as 9.3% in 1974(4) and 8.2% in 1980 (5). It has been shown that PROM contributes to 20% of all perinatal deaths (6).

The cause of PROM is not known and rupture usually occurs without a warning in a woman whose pregnancy has appeared to be progressing normally. Risk factors associated with PPROM include, previous preterm delivery, early and late pregnancy bleeding, cigarette smoking, material infections (e.g. urinary tract infection, general infections, intrauterine infection), cervical incompetence, multiple pregnancies, polyhydramnios, nutritional deficit (e.g copper and zinc deficiencies), digital pelvic examination and decreased tensile strength of membranes (2,6,7).

The unifying factor for the risk factors is weakness in the chorioamnion membrane (2,6,7). *Pseudomonas aeruginosa* strains that produce collagenase have been found to decrease fetal membrane strength and elasticity. Other organisms associated with PPROM include *Staph aureus, Strep agalactiae, Bacteroides melaninogenicus* and Enterobacteriaciae spp that produce non-specific collagenases. Group B streptococci and E coli, which are implicated in chorioamnionitis, have been known to bind, invade and cross the chorioamnion membranes. Engulfing of the bacteria by amnion has been shown to activate the peroxidase-hydrogen peroxide system. Amnion, chorion, decidua and placental macrophages all contain peroxidase activity, as do cervical mucus and endometrial cells. Some bacteria produce hydrogen

peroxide, thus providing free radicals leading to local tissue destruction, necrosis and cleavage of the peptide bonds in collagen.

The diagnosis of PROM requires thorough history, physical examination and laboratory testing. History alone has an accuracy of 90% (8). A mother may describe a "gush of amniotic fluid", intermittent leaking of small amounts of fluid or increased perineal moisture. The next step is to do a sterile speculum for confirmation. The most reliable sign of rupture is direct observation of amniotic fluid flowing from the cervix into the vaginal vault. If fluid cannot be visualized application of slight fundal pressure or asking the patient to cough or bear down by Valsalva manoeuvre induce leakage of amniotic fluid if the membranes are ruptured. The presence of meconium often verifies the diagnosis. In some cases, amniotic fluid may be difficult to distinguish from urine, mucus and seminal fluid if the flow of fluid from the cervix cannot be visualized.

In the event of uncertainty a number of diagnostic tests could be carried out. The most common used tests are analysis of vaginal PH with nitrazine paper (which turns blue due to alkaline pH of amniotic fluid) and evaluation of vaginal secretion with arborization test. When the diagnosis is in doubt, other modalities including cytology, alpha fetal protein detection on the draining fluid and intra-amniotic dye instillation using indigo carmine should be used as indicated (8). Complications of instillation of indigo carmine include injuries to the fetus and risk of feto-maternal transfusion. Diagnosis of PPROM in the patient presented was made from history and speculum examination, which revealed a pool of liquor in the posterior fornix with drainage from the cervical os.

The management of a patient with PPROM needs to be selective and individualized. There is general agreement that initial management of PPROM should include confirmation of rupture, determination of the presence or absence of bacterial infection, assessment of the gestational age, determination of fetal pulmonary maturity status, early detection of fetal

distress and early detection of maternal/fetal infection. Also considered is availability of efficient neonatal care unit, fetal presentation, degree of cervical dilatation and the presence or absence of uterine contractions. Most authors advocate for conservative management for a patient between 28 to 32 weeks, active management for patients after 36 weeks. Between 32 and 36 weeks there is no consensus just as between 23 and 28 weeks of gestation (9).

The expectant management is aimed at prolongation of gestation as prematurity is the greatest risk. The need for bed rest, careful observation of the mother and fetus, daily heart rate monitoring and prompt maternal and fetal evaluation at the onset of labour usually imply that a patient with PPROM is hospitalized. Daily monitoring of liquor drainage, twice weekly white cell blood counts, culture of the cervix and vagina swabs and urine culture in all the patients with PPROM where delivery is not imminent (9).

Most patients with PPROM deliver within 48 hours of membrane rupture. Approximately 90% term patients will progress spontaneously into labour with latency period of less than 48 hours, 80% of those at 33-36 weeks and 66% of those at 20-32 weeks will develop spontaneous labour (10). The patient presented was at 34 weeks and had drained liquor for 3 days and had no contractions, hence, reason for augmentation.

Prophylactic use of antibiotic in patients for conservative management still remains controversial. There is no data to show conclusive evidence of the effectiveness of the antibiotics preventing chorioamnionitis and perinatal septicaemia. Antibiotic therapy does not alter overall fetal outcome as measured by perinatal mortality (1). The use of glucocorticoids and tocolytics is debatable. While earlier investigators had claimed efficacy of these, recent studies have shown mixed results. Infact there is increased risk of endometritis with steroid use (12). Overall there has been found to be an increase in endometritis with the use of steroids without corresponding benefit to the fetus, hence not recommended (12).

Complications of PPROM include perinatal mortality, prematurity, chorioamnionitis, cord prolaspse, placenta abruptio and the oligohydramios tetrad of pulmonary hypoplasia, peculiar faces, limb deformities and growth deficiency (11,). Prophylactic transabdominal amnionfusions with 150-350mls warmed normal saline (5-50mls/min) at weekly intervals has been shown to have a positive effect on latency period in a patient with PPROM and oligohydramnios (10).

REFERENCES

1. Thompson, V., Liu, D., Billet, E. Amniotic Membrane Collagen: Content and Type. Distribution in Women with Preterm Rupture of Membrane in Pregnancy.
   Br. J. Obstet. Gynaecol. 1997; **104**: 1087-1091.

2. Pernoll, M. L. Late Pregnancy Complications. Current Obstetric and Gynaecology ,Diagnosis and Treatment, 8th Ed. 1994; Appleton and Lange, Connecticut, **15**: 331-343.

3. Oxorne, H., Amniotic Fluid in Preterm Labour. Hary Oxorne-Foote Human Labour and Birth, 5th ed.1988; Appleton and Lange, **43**:721-724.

4. Otieno, J. A. Spontaneous Rupture of Membranes at Kenyatta National Hospital
   M.Med. Thesis, 1981;University of Nairobi.

5. Wanjala, S.H.M. Premature Rupture of Membranes at Kenyatta National Hospital
   M.Med. Thesis, 1980;University of Nairobi.

6. MacDonald, P. C., Gant, N. F., Levant, K. J. Peterm Post-term Pregnancy and Fetal growth Retardation: Williams Obstetrics, 19th ed. 1993; Appleton and Lange, **38**:861-865.

7. Mengal, H. J., Using, A. W., Fuomala, R. E. Risk factors for Preterm Premature
   Rupture of Fetal Membranes: A Multi-centre case control study. Am. J. Obstet.
   Gynaecol, 1990; **163**:130-37.

8. Kim, M., Davidson. Detection of Premature Rupture of the Membranes. Clin.

Obstet. Gynaecol, 1991; **34**: 715-22.

9. Major, C., Kitzmiller, J. L. Perinatal Survival with Expectant Management of
Mid-Trimester. Am. J. Obstet. Gynaecol. 1990;**163**:838.

10. Duff, P. Management of Premature Rupture of Membranes in Term Patients.
Clin. Obstet. Gynaecol. 1991; **34**: 723-29.

11. Greenberg, R. T., Gary, D.V., Henkin. Antibiotic Therapy in Preterm Premature
Rupture of Membranes. Clin. Obstet. Gynaecol, 1991; **34**: 742-50.

12. Eriksen, N. L., Jorge, d., Blanco. The role of Corticosteroids in the Management
of Patients with Preterm Rupture of Membranes. Clin. Obstet. Gynaecol, 1991;
34: 694-701.

13. Kyle, P., Turner, D.P. J. Chorioamnionitis due to *Pseudomonas Aeruginosa* A Complication of Prolonged Antibiotic Therapy for Premature Rupture of Membranes. Br. J.
Obstet.Gynaecol.1996;**103**:181.

OBSTETRIC CASE NO 10.

DEEP VENOUS THROMBOSIS IN PREGNANCY - LIFE BIRTH

Name:	A.A.	Age:	21 years
Sex:	Female		Parity: 0+0
D.O.A.:	6.8.02	D.O.D.:	18.10.02
WARD:	GFA		

PRESENTING COMPLAIN

She was referred form Pumwani Maternity Hospital with complaint of painful swelling of the right leg for 1 week.

HISTORY OF PRESENTING COMPLAIN

She was well until one week prior to admission when she developed swelling of the left leg which began in the thigh region then extended to the calf by evening.

It was associated with pain which increased progressively and was unbearable by the third day. The pain was non-radiating and worsened by walking. She then sought help from Pumwani Maternity Hospital and was started on heparin 5000 IU 8 hourly without improvement and was referred to Kenyatta National Hospital due to lack of laboratory back up. She had no history of trauma nor chest pain.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She is a para 0+0. Her L.M.P was on 19.1.02 and her E.D.D. was 26.10.02, gestation by dates was 29+ weeks.

She attended ante-natal clinic at Umoja. There was no antenatal profile done. Her menarche was at 14 years, cycles were regular lasting 3 days and coming after 28 days. There was no history of contraception use.

PAST MEDICAL HISTORY

This was not significant.

FAMILY AND SOCIAL HISTORY

She is a married housewife who did not smoke cigarettes or drink alcohol. Her husband drinks occasionally. There is no family history o chronic illness.

EXAMINATION

She was in fair general condition, not pale, clinically afebrile. Her blood pressure was 120/80mmHg, pulse rate 76/minute.

RESPIRATORY SYSTEM

Not in distress with normal breath sounds.

ABDOMINAL EXAMINATION

Fundal height was 30 weeks, longitudinal lie, cephalic presentation. Fetal heart was heard and regular at 148/minute.

MUSCULO SKELETAL SYSTEM

Left lower limb was swollen at the thigh and calf with increased local temperature. It was shiny and tender.

A diagnosis of deep venous thrombosis in pregnancy at 29+/40 gestation was made.

MANAGEMENT.

She was started on heparin infusion of 8000IU 8 hourly and the lower limb was elevated using pillows.

Investigation

Blood group A +ve

VDRL - negative

HIV - negative

Blood count - WBC - $4.3x10^9/l$

- Hb 9.8 g/dl
- HCT 29.5g/dl
- Platelets $325x10^9/l$

Doppler ultrasound showed no flow through the left femoral and popliteal veins with fresh hypoechoic masses on left femoral veins.

Baseline coagulation screen was done on 8.8.02

APTT test - 37 seconds

APTT control - 33 seconds

Prothrombin time - test 15 seconds

- control 14 seconds

Prothrombin time index 93%. Subsequent follow up coagulation screens showed an increased INR to between 1.5-2.0 baseline.

FOLLOW UP.

She was put on sc heparin for one week and then changed to wafarin . Both were given for 3 days before stoppage of heparin. Measurements of both thigh and calf circumferences were done which showed a reduction in the left leg circumference.

At 36 weeks she was converted back to heparin.

She subsequently went into spontaneous labour on 12/10/02 at 38 weeks gestation. Heparin was withheld and Protamine sulfate injection kept at standby. She was grouped and cross matched. She had normal labour and had a spontaneous vertex delivery to a life male infant weighing 3400 grams who scored 8/1, 9/5. She did not develop post partum haemorrhage.

She continued on heparin and converted to warfarin 10mg daily for 3 months and for follow up in the medical outpatient clinic.

She was adviced not to use oral contraceptive and was put on copper "T" after 6 weeks.

DISCUSSION

A.A. presented with deep venous thrombosis (DVT) of the left leg at 28 weeks gestation. She was managed on heparin and warfarin. She went into spontaneous labour at 38 weeks. DVT and its sequelae, pulmonary embolism is a major cause of maternal morbidity and mortality (1).

Incidence of DVT in pregnancy is 1-5/1000 pregnancies, this increase in women with previous DVT to 12-35% (2).

Virchow's triad of damage to vessel wall, reduced blood flow and increase in blood coagulability is the pathophysiology of DVT. Coagulation factors increase in pregnancy such as factor VII, VIII and fibrinogen. There is also decrease in natural anticoagulants: There is also a decrease in antithrombosis III and protein S in pregnancy (3).

Other risk factors of thrombosis include age (>35 years), smoking, cancer, surgery, fractures, immobilization and oral contraceptives. Inherited thrombophilias give an increased tendency to thrombosis ,this include deficiencies of antithrombin, protein S., protein C. factor V leiden mutation (3).

Almost 90% of DVT in pregnancy are on the left side as compared to 55% in those not pregnant.

This may be due to compression of the left iliac vein by the ovarian arteries (4). Clinical presentation of DVT varies greatly depending on the site, intensity of thrombosis and inflammatory response.

In pregnancy, 72% are illiofemoral as compared to calf vein thrombosis in 9%. Classically, puerperal thrombophlebitis or phlegmonia alba dolens of the lower extremity is abrupt in onset, with severe pain and oedema (3).

Diagnosis of DVT include contrast venography ,biochemical assays and Doppler ultrasonography.: venography is the gold standard but it is expensive, time consuming and cumbersone that it has been replaced by non-invasive methods.Real time ultrasound along with duplex and colour Doppler ultrasound is currently the procedure of choice (5).Other investigations that can be used include magnetic resonance imaging, computed tomographic scanning and impendence plethysmography.

Pulmonary embolism is the major most dangerous complication of DVT. Pulmonary embolism precedes clinical DVT in only half of the cases, the remaining half are usually asymptomatic until pulmonary embolism (PE) has occurred.Clinical evidence of PE include dyspnoea, chest pains, cough, haemophysis and findings include tachypnoea, dyspneoa, pleuric pain.Investigations for PE include CXR, and ventilat6tion - perfusion scintigraphy, pulmonary angiogram is the fold standard for diagnosis (6).

Treatment of DVT is intially in the line of heparin, bed rest and analgesia. Heparin was started as an intravenous bolus of 5000 unit followed by an infusion of 1400 units/hour until the patient is stable then converted to subcutaneous heparin to maintain an APTT 2-2½ times normal.

Warfrarin is associated with congenital malformation and should be avoided in the 1st 12 weeks and after 36 weeks. Low molecular weight heparin (LMWH) is now being used in pregnancy and has been found to be safe and effective especially for home therapy.

In case of LMWH, control is determined by measuring LMWH levels in blood 6 hours after injection (7).

If Warfarin is used after delivery, it should be given with heparin for 3 days and an INR of 2-3 times. Major side effects of heparin are osteoporosis, thrombocytopaenia and haemorrhage.

During labour, the heparin should be stopped and is started after delivery if there is no bleeding post partum within several hours. Protamine sulfate is the anti-dote for heparin with 1mg being given per 100units.

Veno-caval filters like the green filed and Gunther tulip filters may be placed to avoid pulmonary embolism (3).

In the pueperium, Warfarin should be used for six weeks or six months since DVT occurred.

Estrogen containing contraceptives should be avoided (8).
The patient presented was initially on heparin then warfarin and later converted to heparin from 36 weeks. IUCD was offered as the family planning method.

REFERENCES

1. Maternal and neonatal haemostasis task guidelines on the prevention, investigation and management of thrombosis associated with pregnancy. J. Clin Pathol 1993: 46:489-496.
2. Rutherford S., Montora M, McGehee W., Strong T. Thromboembolic disease associated with pregnancy: In 11 year review. Am. J. Obstet Gynecol 1991:164 Supp 286
3. Antonie L.W.A., Pradon's P., Martin H.P., Buller H.P. Deep vein thrombosis Lancet 1999:353:479-85
4. Geer I.A.: Thombosis in pregnancy: Maternal ana fetal issues Lancet 1999:353 1258-1264.
5. Polak J.F., Wilkinson D.L.: Ultrasonographic diagnosis of symptomatic deep venous thrombosis in pregnancy. Am. J. Obstet Gynecol 1991:165:625-629.
6. PIOPED investigators: Value of the ventilation/perfusion scan in acute pulmonary embolism JAMA 1990:263:2753-275.
7. Ginsberg J.S., Hirsh J.: Use of antithrombolic agents during pregnancy. Chest 1992 102 Suppl 385-390.
8. Kierkegaard A.: Incidence ano diagnosis of deep vein thrombosis associated with pregnancy Acta Obstet Gynecol Scnd 1983:62:639-43

OBSTETRIC CASE NO11

MALARIA IN PREGNANCY:

LIVE INFANT

Name P.L. Parity 4+0 Gravida 5.

Age 32 yrs D.O.A 04/09/02

IPNO 0834125 D.O.D 08/09/02

Presenting complaint

Body aches, fever and chill for 3 days.

History of presenting illness

The patient gave a history of having traveled from western Kenya where she had been for the preceding 4 weeks attending a funeral following her sister's death. She had not taken antimalarial prophylaxis prior to or during her visit to Western Kenya. The fever was intermittent she had a persistent headache and there was no associated joint pains, vomiting, diarrhoea. There was no history of altered consciousness or convulsions.

ANC

She had booked to attend the KNH antenatal clinic from 32 weeks gestation. Though she had turned up for 2 visits she was yet to have antenatal profile performed.

Obstetric/gynaecological history

Regular periods 4/30 without dysmenorrhoea or menorrhagia.

Para 4+0 gravida 3

LMP 15/01/02 EDD 22/10/02. GBD 34 weeks

Previous deliveries

Year, delivery	Bwt, sex	Current state
1986 SVD	3.0kg,female	Died at 2 yrs, malaria
1990 SVD	3.0kg,male	Alive, well
1991 SVD	2 kg female	Died at 1 yr malaria
1996 SVD	4kg male	Alive, well

Contraception

Has used Depo-Provera in the past as contraception. .

Past medical history.
She had previous laparotomy in April 2001 where oophorectomy was done. She is not on medication currently.

Family social history

Housewife, resides in Nairobi's Dandorra estate, she does not report cigarette smoking or alcohol ingestion.

Physical examination

Woman in good general condition. Not pale, no jaundice nor oedema

Blood pressure. 110/60mmHg Pulse 110/min, regular. Respiratory rate 20/min

Temperature 38.5^{0}C

Respiratory Chest clear

Cardiovascular examination Normal

Nervous system Normal

Per abdomen

Uniformly distended Fundal height 32/40 Longitudinal lie Cephalic presentation
Foetal tachycardia No uterine contraction felt. Descent 5/5 ↑

Pelvic examination

NEG No discharge, cervix posterior long, os closed.

Investigations

- Malaria slide -negative
- PCV 30 %
- Blood group positive.

Diagnosis. Malaria in pregnancy

Management

In view of the history of travel to a malaria -endemic region and the physical findings, P.L was managed for malaria in pregnancy. Given the fact that she had no history of vomiting oral dihydroartemisisnin was administered 120 mg initially and thereafter 60mg once daily. Fever was controlled using aspergic and phenobarbitone for sedation.

She responded well to treatment and was allowed home after 3 days hospitalization to complete her treatment as an outpatient .She was planned for follow-up in a week's time.

FOLLOW UP

She did not return for review however about two weeks after discharge she returned in labour . she had an uneventful labour and delivered a live male infant weight 3.5kg with an apgar score of 8: 1 and 10: 10. The malaria infection she had had resolved.

DISCUSSION

The patient presented at 34 weeks gestation with a history of having traveled to western Kenya and area that is holoendmic for malaria. Despite the negative blood slide for malaria parasites she had constitutional symptoms of malaria and was managed as a patient with malaria. She returned two weeks later having fully recovered and delivered a healthy male infant weighing 3.5kg.

WHO estimates that nearly 300 to 500 million persons (40% of the world population) are malaria infected at any one given time with 2 billion at risk

of contracting the disease[21]. Malaria accounts for 5-15% of deaths among children in endemic areas[2]. In Kenya it accounts for 30% of out patient hospital attendance annually[3].

There are four species that cause human malaria: *vivax*, *ovale*, *malariae* and *falciparum*. Organisms are transmited by the bite of a female *anopheles* mosquito. Malarial anemia can cause death, particularly in children and pregnant women who are infected with *Plasmodium falciparum* anemia[1]. *P. falciparum* can invade red cells of all ages, with the levels of parasitemia occasionally exceeding 50 percent and the potential for severe hemolysis. The others cause less severe disease because they do not infect cells of all ages. *P. vivax* and *ovale* invade reticulocytes only and *P. malariae* mature cells only, they therefore result in parasitaemia levels of up to 1 to 2 percent only.

Malaria presents as an illness characterized by fever, chills, headache, myalgia and malaise which may occur at intervals. A laboratory finding of malaria parasites on a blood slide or QBC further enhances but does on obviate the diagnosis of malaria. The patient may have a low haemoglobin. The anaemia often correlates to the degree of parasitaemia as found by Rukaria and associates[5]. Anaemia is associated with high morbidity and mortality if it is not corrected.

There is a high recrudescence of malaria disease in pregnancy and puerperium especially in non immune nulliparous women[6]. Once a diagnosis of malaria has been made treatment is instituted; mild to moderate infections can be managed with sulpha and pyrimethamine combination e.g. Fansidar or metakelfin. However during the year 2002 there developed malaria resistance to these drugs resulting in increased morbidity and mortality from malaria at epidemic levels. Currently the ministry of health is reviewing the treatment protocols for malaria.

Severe malaria infections are managed with either oral or intravenous

quinine the route being determined by the patient's condition. Patients with severe malaria are prone to hypoglycaemia and should receive dextrose infusion. More recently dihydro artemesin based drugs have proved highly effective in treatment of severe malaria with a more convenient dosage regime. However the recrudesce rate with these drugs is higher. Women with severe anaemia defined as a haemoglobin of 5g/dl or less should receive blood transfusion. Blood supplements such as folate and iron should be incooperated in the treatment regimen.

Neonatal outcomes include normal infants at term, preterm delivery, intrauterine growth restriction, abortion due to severe pyrexia and congenital malaria. In immune women it may be as low as 0.3 percent but in non-immune women up to 7 percent[7]. It has been estimated that 75,000 to 200,000 infant deaths are associated with malaria infection in pregnancy each year[8]. The failure to apply known effective antimalarial interventions through antenatal programs continues to contribute substantially to infant deaths globally.

Malaria prophylaxis is recommended for women after the first trimester, Fansidar two tablets every 12 weeks until delivery. The ministry of health together with the private sector is campaigning for the use of pre-treated mosquito nets, which are proving highly efficacious in the control of malaria. Research continues to look for a vaccine for malaria and we look forward to the eradication of the disease in Africa and the world at large

REFERENCES

1 World Health Organisation: Control of tropical diseases (CTD): Malaria control. Geneva, WHO Office of information 1995.

2 Ibhansebhor SE, Okolo AA. Placental malaria and pregnancy outcome. Int J Obstet Gynecol 1992; 37: 247-252.

3 Ministry of health. National guidelines for the diagnosis, treatment and prevention of malaria for health workers. Kenya January 1997.

4 Phillips RE, Pasvol G. Anaemia of Plasmodium falciparum malaria. Baillieres Clin Haematol 1992; 5: 315.

5 Rukaria KRN, Ojwang SBO, Oyieke JB. Haemoglobin levels in pregnant women with malaria parasitaemia. J obstet Gynaecol East Central Afric 1996; 12: 18-21.

6 Nathwani D, Currie PF, Douglas JG et al. plasmodium falciparum malaria in pregnancy: A review. Br J Obstet Gynecol 1992; 99:118.

7 Cot M, Roisin A, Barro D et al Effect of chloroquine chemoprophylaxis during pregnancy on birth weight: Results of a randomized trial. Am J Trop Med Hyg 1992; 46: 21.

8 Steketee RW, Nahlen BL, Parise Meet al. The burden of malaria in pregnancy in malaria-endemic areas. Am J Trop Med Hyg 2001; 64: 28.

OBSTETRIC CASE NO 12

BREECH PRESENTATION IN A PRIMIGRAVIDA WITH REDUCED FETAL MOVEMENTS: EMERGENCY CAESARIAN SECTION

Name: R. W
Age: 27 years
IP. No: 0823244
DOA: 19.07.2002
DOD: 30.07.2002
Diagnosis: Breech presentation with reduced fetal movements
Parity: 0 + 0

Presenting Complaints:
The patient complained of reduced fetal movements over a period of 12 hours.

History of presenting Complaints:
She reported having noticed reduction in the perception of the fetal movements over a period of 12 hours. There was no preceding trauma, no abdominal pains or drainage of liquor amnii.

Obstetric and Gynaecological History
She was a para 0 + 0, gravida 1 whose last menstrual period was on 27.10.01, estimated date of delivery 03.08.2002 and gestational age about 38 weeks.
She had attended antenatal clinic at the Kenyatta National Hospital from about 20 weeks of gestation and received tetanus toxoid injection twice.

The haemoglobin at booking was 13g/dl, she was of blood group A - Rh - positive and VDRL was negative.
An ultrasound scan done on 2.7.2002 had a report of a normal fetus at about 37 weeks gestation in breech presentation.
Her menarche was at 15 years and her menstrual flow lasted 3 to 4 days. The cycles were reportedly irregular and she had episodes of dysmenorrhoea.

Past Medical History:
There was nothing of relevance.

Family and Social History:
She was married, unemployed and lived in Maringo, Nairobi with the husband who was a businessman. She never smoked and did not drink alcohol. One of her sisters had been treated for pulmonary tuberculosis in 1999, a period during which they used to live with her.

Drug:
There was no known history of allergy.

Systemic Enquiry:
There was nothing of much relevance elicited.

General Physical Examination:
She was in good general condition, was afebrile, was not pale and had no oedema.

Abdominal Examination:
The abdomen was grossly distended, moved with respiration and had no areas of tenderness. The fundal height was term, the fetus was in longitudinal lie, breech presentation with a regular heart rate of 126 per minute.
There was no engagement of the presenting part.

Vaginal Examination:
The external genitalia appeared normal as was the vaginal wall. The cervix was 1cm long, closed, soft and central.
Other Systems - These were essentially normal.

Diagnosis:
Reduced fetal movements with breech presentation.

Plan of Management:
The examination findings were explained to the patient who was then taught how to record the fetal kicks on a chart and an emergency ultrasound scan with the assessment of the biophysical profile done. The latter was found to be 8 /8 and the patient was sent to the antenatal ward to await elective caesarian section. The other relevant investigations such as urea and electrolytes plus haemogram were carried out.

On 20.7.2002, the fetal kick chart showed unsatisfactory pattern and a decision to carry out an emergency caesarean section was made.
Informed consent was obtained from the patient, grouping and cross-matching of two units of blood done and 0.6mgs of intramuscular atropine for premedication given.

In theatre, she was aseptically catheterized and clear urine obtained. While in supine position, the abdomen was cleaned and draped then general anesthesia induced. The abdomen was opened via a midline infraumbilical incision, the paracolic gutters packed and the lower uterine segment exposed and opened via a transverse incision. The membranes were ruptured and clear amniotic fluid carefully drained. A hand was put through the incision and the feet grasped between the fingers and gently delivered through the incision.

Traction was maintained till the breech appeared then both hands used to grasp the thighs and the trunk delivered. When more than half of the shoulder blade had been delivered and the axilla appeared, the fingers were used to deliver the fetal upper limbs in turn. The head was then delivered by extension of the neck and the nostrils cleaned. The umbilical cord was found encircling the neck x1 and was released. The infant was male, weighed 3100g and had an Apgar score of 4 at 1 minute, 7 at 5 minutes and 8 at 10 minutes. It was taken to the newborn unit for further observation. The placenta and membranes were removed complete, the intrauterine cavity cleaned, the uterine incision repaired in 2 layers then the uterovesical peritoneum stitched. Haemostasis was achieved, the abdominal packs removed, swabs and instruments counted and found to be of the correct number and the abdomen closed in anatomical layers. Vulvovaginal toilet was done and minimal vaginal bleeding noted. The Catheter was pulled out and it was noted that the urine was clear.

Post-operatively, the vital signs were observed ½ hourly until the patient was fully awake then 4 hourly. She was infused with 500mls of normal saline alternating with 500mls of 5% dextrose 4 hourly and was starved of both fluids and solid foods until the bowel sounds were audible. She was maintained on adequate analgesia with 100mg of intramuscular pethidine six hourly and also given prophylactic gentamicin and crystalline penicillin intravenously.
She remained in the ward until the 7th post-operative day when the stitches were removed then she was transferred to the mothers', hostel within the hospital to await the baby's discharge and to be reviewed at the postnatal clinic 5 weeks from the date of discharge.

Discussion

A 27 year old para 0 + 0 with breech presentation at 38 weeks with reduced fetal movements is presented.
Breech presentation is when the buttocks of the fetus enter the pelvis first and for a number of reasons it is common remote from term. Most often, however, before the onset of labour the fetus turns spontaneously to acephalic presentation so that breech presentation persists in only about 3 to 4 percent of singleton deliveries (1).
Locally, the incidence of breech presentation was found to be 2.7% in the Nairobi birth survey (2) while at the Kenyatta National Hospital Njuki found an incidence of 3.5% (3).
Factors other than gestational age that appear to predispose to breech presentation include uterine relaxation associated with great parity, multiple fetuses, hydramnios, oligohydramnios, hydrocephalus, anencephalus, previous breech delivery, uterine anomalies and pelvic tumours. The frequency of breech presentation is also increased with placenta previa, but only a small minority of breech presentation are associated with a previa. No strong correlation has been found between breech presentation and a contracted pelvis (1). Our patient was a

primigravida and the cause of breech presentation was not obvious. The geatational age was 37 weeks.
In the persistent breech presentation, increased frequency of the following complication can be anticipated.

1. Prenatal mortality and morbidity from difficult delivery.
2. Low birth weight from preterm delivery, growth restriction or both.
3. Prolapsed cord
4. Placenta praevia
5. Fetal, neonatal, and infant anomalies
6. Uterine anomalies and tumours
7. Multiple fetuses
8. Operative intervention

Njuki found corrected perinatal mortality in breech presentation at the Kenyatta National Hospital to be 2 ½ times greater than for cephalic presentation (1, 3). The varieties of breech presentation are complete or flexed breech in which both knees are flexed as are the hips; incomplete breech where one knee is flexed, the other extended and hips flexed; Frank or extended breech in which both knees are extended while the hips are flexed and finally footling breech where the knees are flexed and the hips partly deflexed (1, 4, 5). The variety of breech presentation in our patient was not ascertained.

The diagnosis of breech presentation may be made by palpation, pelvic examination or ultrasonography. Typically, with the first Leopold manouvre, the hard, round, readily ballotable fetal head is found to occupy the fundus.
The second manouvre indicates the back to be on one side of the abdomen and the small parts on the other. On the third manouvre, if engagement has not occurred - the intertrochanteric diameter of the fetal pelvis has not passed through the pelvic inlet - the breech is movable above the pelvic inlet. After engagement, the fourth manouver shows the firm breech to be beneath the symphysis and fetal heart sounds are usually heard loudest slightly above the umbilicus, whereas with engagement of the fetal head the heart sounds are loudest below the umbilicus.

On vaginal examination the frank breech presentation may be heralded by the ability to palpate both the ischial triberosities, the sacrum and the anus. If labour is prolonged and the buttocks become oedematous, differentiation of face and breech may be very difficult as the anus may be mistaken for the month and the ischial tuberosities for the malar eminences. In breech presentation, the finger may be stained with meconium while in face presentation, the mouth and malar eminences form a triangular shape as opposed to the ischial tuberosities and the anus that are in a straight line. The sacrum and its spinous processes may also be palpable. In complete breech, the feet may be palpated alongside the buttocks and in footling breech presentation, one or both feet are intefior to the buttocks (1,4,5,6). In our patient, both clinical assessment and ultrasound scan assisted in clinching an accurate diagnosis.

Once breech presentation is diagnosed the mother is followed up closely to see if spontaneous version occurs. (4)
If by 37 weeks the malpresentation persists, external cephalic version could be attempted although this is not encouraged in some centers including ours because of poor success rates and fear of fetal morbidity. Published success rates vary from 39% to 82% and may be predictable based on factors such as parity, estimated fetal weight, gestational age, amniotic fluid volume, type of breech presentation and position of the fetal spine (6). The feared complications of external cephalic version include frequent and sometimes serious fetal heart rate changes, feto - maternal haemorrhage, abruptio placenta, premature rupture of membranes and fetal injuries.

Many centers now recommend delivery by caesarian section notably under circumstances such as:
1. A large fetus
2. Any degree or contraction of unfavourable shape of the pelvis
3. A hyperextended head
4. No labour, with maternal or fetal indications for delivery such as pregnancy - induced hypertension or ruptured membranes for 12 hours or more.
5. Uterine dysfunction
6. Footling presentation
7. An apparently healthy but preterm fetus of 25 to 26 weeks or more, with the mother in either active labour or in need of delivery.
8. Severe fetal growth restriction
9. Previous perinatal death or children suffering from birth trauma
10. A request for sterilization - this is also controversial.

The anaesthetist and paediatrician have to be before hand so that they are aware and in case of any emergency, are readily available to assist. Labour usually progresses just as in presentation.

Assisted breech delivery
The mother should only be allowed to bear down when she is fully dilated. Epiduaral anesthesia should be given early during the first stage for relief of pain. Premature bearing down is avoided since perineal reflexes are depressed and assisted breech delivery is well controlled. If epidural anaesthesia is not given then pudendal is well should be given. As the breech distends the perineum, an episiotomy should be given. The mother should be encourage to bear down until the abdomen is delivered.

The pelvis of the baby is grasped with a towel and with gentle traction and posterior flexion of the body will deliver the anterior shoulder. Incase of extension of the legs, pinards manoeuvre is to deliver then(flexion of the

knee at the popliteal fossa and abduction of the thigh) .The posterior shoulder is delivered by rotating the trunk so that the posterior shoulder becomes anterior and is delivered. Lovsets manoeuvre can be used to deliver the shoulders. Caution is also taken at the level of umbilicus to loosen the cord as it may be too tight or can get compressed.

The fetus is them allowed to hang and in the process there is flexion and descent of the head. The fetus is grasped by the ankles and the trunk is lifted in the direction of the mother abdomen(Burns-Marshal method). In the process the head is delivered. In case of difficulty in delivering the head then mauriceau- smellie-veit maneuver is used. In this method, the baby is placed on the left forearm with the limbs hanging on either sides ,1st and 2^{nd} finger on mallar bones on either side(originally the thumb was put in the mouth in addition) ,this maintains the flexion of the head. The 3^{rd} and 4^{th} finger of the right hand are placed on the babies right shoulder and the 2^{nd} finger is placed on the sub-occipital region. Traction is now given in downward and backward direction till the nape of the neck is visible under the pubic arch.

Breech extraction

This is in case of fetal distress when faster delivery of the baby is required. In the delivery of the 2^{nd} twin, breech extraction can be done if the fetus is breech or transverse.

Our patient underwent emergency caesarian section due reduced fetal movements, although she had been scheduled for elective caesarian section since in our set up, the policy is to avoid difficult deliveries in breech presentation as would occur in a primigrarida like her.

At the Kenyatta National Hospital, many authorities tend to favour caeserian delivery and this is almost the norm currently unless the patient is seen when labour is so advanced that she is likely to deliver before preparations for caesarian delivery are put in place. Birth anoxia and injuries are some of the complications of vaginal breech deliveries.

REFERENCES:

1. Cunnigham,FG Grant,FN Leveno JKet al.
   Breech presentation and delivery,
   Williams Obstetrics, 21st edition pages 509 - 535.
2. Mati JKG, Aggarwal VP, Sanghvi HCG et al
   The Nairobi Birth Survey: Labour and delivery.
   J. Obstet. Gynecol. East, Centr. Afr. 1983 2:47.
3. Njuki S.K.
   Breech presentation at the Kenyatta National Hospital - modes of delivery and outcome.
   Mmed thesis - University of Nairobi, 1979.
4. Joseph V. Collea
   Malpresentation and cord prolapse
   In: Current obstetric and gynecologic
   Diagnosis and treatment 8th edition
   Appleton and Lange. pages 410 - 427. 1994
5. Driesen F.
   Obstetric problems In:
   A practical manual published by AMREF, Nairobi 1991 pages 9 - 11.
6. Atlanta Maternal - Fetal medicine.
   Management of term Breech presentation,
   Vol. 2 No: 3 March 1994.

OBSTETRIC CASE NO 13

HIV IN PREGNANCY - ELECTIVE CAESAREAN - LIVE BABY

Name:	S.C.	DOA:	9-8-02
Age:	34 years	DOD:	18-8-02
IP No:	0802257	Parity:	0+0

HISTORY OF PRESENTING COMPLAINTS

The patient was admitted from the antenatal clinic for elective caesarian section at 38 weeks gestation. She had no complaints.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was a para 0+0. Her last menstrual period was on 10.11.01 with expected date of delivery on 17.08.02 and gestational age of 38 plus weeks. She had started her antenatal care at 20 weeks gestation and antenatal profile was done. The results were haemoglobin concentration of 8 g/dl, VDRL-Negative, blood group '0' Rhesus positive and Elisa for HIV antibodies was positive. She had pre and post-test counseling for the HIV. After testing she was referred to cytotoxic leukocyte (CTL) project for further management. She had routine antenatal care upto 34 weeks gestation where she was started on AZT at 300mg BD and counseled on the mode of delivery and breast-feeding. She opted for elective caesarian section and not to breast-feed. She was also put on hematinics.

Her menarche was at 15 years. The periods were regular every 28 days with a flow of 3-4 days. She did not have dysmenorrhea.

PREVIOUS MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She was a single lady working as a computer operator. She neither smokes nor takes

alcohol. There was no history of chronic illness in the family.

PHYSICAL EXAMINATION

She was in good general condition, not wasted, not pale, not jaundice, no lymphadenopathy and was afebrile. Her vital signs were blood pressure 120/80mmHg, pulse rate 80/min, respiratory rate 28/min, and temperature 36.4°c

The cardiovascular, respiratory and central nervous systems were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was a term; fetus in longitudinal lie, cephalic presentation, and the fetal heart was heart and regular at 146/minute. Pelvic examination was not done.

DIAGNOSIS

HIV infection in pregnancy at term

MANAGEMENT

Pre-operative investigations were done and the results were haemoglobin concentration of 13.1g/dl and the urea and electrolytes were within the normal limits. One unit of cross-matched blood was preserved for surgery. Informed consent was obtained. She underwent elective caesarian section as described in the introduction. The outcome was a live female infant weighing 3750grams with Apgar score of 8 in one minute and 10 at 5 minutes.

The post-operative period was uneventful and both mother and baby were discharged on the 4th post-operative period to be followed up in the CTL programme.

DISCUSSION

The patient presented was a 34-year-old para 0+0 at 38 weeks gestation with HIV disease who was delivered a female baby weighing 3750grams by elective caesarian section.

The global HIV epidemic in women continues to expand at an alarming rate and women and children are becoming the fastest growing group of newly infected patients.

HIV has become the most common complication of pregnancy in some countries not only because the incidence is increasing in child bearing women, but also with longer survival after infection, more infected women are becoming pregnant (1). In Kenya and the rest of sub-Saharan Africa the obstetrician is very likely to care for an HIV positive mother (2). It is currently estimated that there are more then 11 million women infected with a majority living in sub-Saharan Africa. More than 80% of infections in women occur in the reproductive age and most acquire HIV heterosexually (3). The actual prevalence in Africa among antenatal mothers is not known as the majority of mothers deliver outside health institutions but rates exceed 20% in many areas and have been reported to be as high as 20-42% in certain areas (3). In Kenya, prevalence ranged from 4-10% in low seroprevalence sites to 20-25% in high seroprevalence sites in 1998. In the entire sentinel sites the proportion of pregnant women testing HIV positive continues to increase at alarming proportions (4).

Perinatal transmission of HIV accounts for more than 90% of all paediatric acquired immunodeficiency syndrome cases (5). Infants infected with HIV at birth are more susceptible to opportunistic infections and rapid progression to AIDS, including a 50% chance of developing AIDS by three years of age and a 90% chance of dying by 10 years of age (6). In Kenya, it is estimated that about a hundred thousand infants are infected with HIV annually due to mother to child transmission (MTCT) (4).

Appropriate management of pregnant patients who have HIV will, therefore, in the light of the above statistics have a major impact on maternal and infant health. The goals of therapy are to properly manage the pregnancy, treat the infection and minimize the risk of vertical transmission of HIV. Early detection of HIV through aggressive screening programs is necessary to initiate timely therapy. Prenatal screening programs include testing on a voluntary basis, targeting only women at risk, and mandatory perinatal HIV screening. When examining these options, legal implications, the number of cases identified, programmatic costs and long term health costs must be considered. Targeting at risk women misses a significant proportion of seropositive women but costs are lower. Mandatory testing has the greatest direct costs and place the greatest burden on the rights of women. Voluntary programs with proper counseling, education, testing, treatment and intervention achieves most of the benefits of prenatal HIV screening without violating the civil liberties of women and are much to be encouraged.

The goals of screening are multiple and include: assessing future risks, reinforcing HIV risk-reduction behaviour, allowing referral to prevention services, making an early diagnosis and thus starting treatment early, informing patients about reproductive decisions, preventing transmission to others, obtaining psychological and social support services and reducing perinatal transmission. In our unit, voluntary screening programs are used and there is a countrywide programme of setting up voluntary counseling and testig (VCT) centes.

Various tests are used in the diagnosis of HIV. These can be divided into four main categories: - antibody detection, antigen detection, testing for viral nucleic acid (RNAor DNA). Elisa antibody detection is the test used often to detect HIV infection. Third generation ELISA's, which use recombinant antigens, are highly specific and sensitive. It is therefore recommended that laboratory diagnosis of HIV, two ELISA's for antibody detection should be done ,one for screening and the other for confirmation.The two have to be positive for one to make a diagnosis of HIV infection. In the event that one

ELISA is positive and the other negative, testing for viral nucleic acid (polymerse chain reaction-PCR) can be used for confirmation of the serostatus (5).

The effect of pregnancy on the rate of progression of HIV disease is unclear with some authors claiming no effect while others suggesting clinical illness is more likely to develop presumably because of suppressed cell mediated immunity (2,8). Similarly the influence of HIV infection on pregnancy is also unclear, however, many studies done in Africa report increased incidences of preterm labour, urinary tract infection, herpes zooster, low birth weight infants, IUGR, chorioamnionitis and puerperal infection in HIV positive mothers (9-12).

Much attention and energy has now focussed at means of preventing mother to child transmission (vertical) of HIV. As described earlier perinatal transmission of HIV infection accounts for virtually all-new cases of HIV infection in children with estimates of 100,000 infants affected annually in Kenya. The prognosis for these infants is poor as most develop early and rapidly progressing disease putting a further strain on our already burdened health system.

Transmission rates range from 15-35% with the lowest reported rates in Europe and the highest rates in Africa (7). Transmission can occur in utero, during labour and delivery and from breast-feeding. It is estimated that about 65% of transmission occur in late pregnancy and delivery. Breast-feeding carries an additional risk of transmission of between 10-20% but with rates as high as 40-50% being reported.

MTCT of HIV infection is dependent on a number of maternal risk factors and intrapartum events. Maternal factors favouring MTCT include low CD4+ lymphocyte counts, high viral loads, advanced AIDS, preterm delivery, placental membrane inflammation, maternal p24 HIV core antigenemia at

birth and HIV infection acquired during pregnancy (13,14). In our patient CD4 lymphocyte counts, viral loads and p24 HIV core antigenemia were not obtained. These tests are expensive and not routinely done in government hospitals.

Intrapartum events that favour MTCT include, mode of delivery, vaginal delivery has a higher risk of transmission than elective caesarian section, rupture of membranes for longer than 4 hours before delivery, episiotomy, intrapartum hemorrhage, use of invasive fetal monitoring devices, instrumental deliveries and twin deliveries, the first twin has a higher risk of infection than the second twin.

Elective caesarian section (ECS) has been shown to reduce the risk of MTCT by 50% in patients not receiving zidovudine and by upto 80% in those on zidovudine therapy; however, ECS is not available in many settings locally and also there is fear of post-operative morbidity due to increased sepsis. Efforts should be made at least in pregnancies where labour is expected to be prolonged or where other obstetrical complications may be associated with increased MTCT (e.g. abruptio placenta, placenta praevia, preterm PROM) to seek early referral and delivery by ECS (4). Physicians should also discuss the risks and benefits of different birth options with patients to allow them make an informed decision regarding mode of delivery (7).

In those mothers who opt for a vaginal delivery or in situations where ECS is not practicable a number of additional precautions have been shown to be useful to reduce MTCT (4). These include avoidance of episiotomy unless absolutely necessary, avoidance invasive fetal monitoring and operative vaginal deliveries unless indicated, avoidance of prolonged rupture of the membranes, immediately after birth baby should be washed with chlorhexidine or wiped dry with a towel to remove maternal body fluids. Suction of the newborn with suction tubes should be avoided unless indicated and even then under direct vision with a laryngoscope.

Studies have also shown that treatment of HIV infected women and their infants with zidovudine (ZDV) reduce the risk of perinatal transmission. The ACTG 076 trial with long course of ZDV reduced transmission by 67% (15). The challenge has been to find out if the combination treatment could reduce transmission further and if the length of treatment can be shortened. A study with short course ZDV started at 36 weeks without breast-feeding in Thailand reported a reduction rate of 50% (16) and is currently used in the Kenyatta National Hospital. The HIV net 012 study in Uganda utilizing a single oral dose of Nevirapine showing a 47% reduction is very promising for our region because it is easy to administer and is cheap. Our patient was on ZDV from 34-week gestation and had opted for elective caesarian delivery and not to breastfeed.

Recent data suggests that more aggressive antiretroviral therapy using combinations of three to four agents may provide greater benefits than use of zidovudine alone. The safety and effectiveness of various agents in pregnancy is currently an area of active research with recommendations that are continually being updated and modified (7). More emphasis is being put to take care of the mother postpartum by introducing PMTCT-Plus where the mother is started on highly active antiretroviral therapy (HAART) if she meets the criteria for starting therapy.

Reducing perinatal transmission to below 5% is thus a realistic goal, especially in mothers who know their status, accept advice regarding the use of antiretrovirals perinatally and refrain from breast-feeding coupled with improved obstetric management. The European Collaborative study reported transmission rate of 9% if zidovudine is combined with elective caeserian section but a rate of 15% with vaginal delivery,both arms of the study were not brestfeeding (19).

Over the next decade it is anticipated that the quality of life and survival will improve in settings in which new highly active combination antiretroviral therapy is available and affordable. In most of the developing world such

therapy is not available and where available not affordable to the vast number of those infected by HIV. In these countries, development of successful strategies for primary prevention must be made top health priorities. Encouraging reports from South Africa, DRC and Uganda indicate that HIV prevalence among pregnant women may be stabilizing or even decreasing (17,18). While this may take place as part of the intrinsic dynamics of the epidemic there is evidence that the decline may be related to prevention efforts and changes in sexual behaviour. These reports give a glimmer of hope in AIDS control programs and prevention activities.

REFERENCES

1. Fowler M.G., Melnick S.C., Mathieson B.J.Women and HIV. Epidemiology and Global Overviews.Obstet and Gynaecol clinics of North America.1997; **24**:705-29

2. Katz, D.A.The profile of HIV infection in women: A challenge to the professional social work. Health Care. 1997; **24**: 127-34

3. Ojwang, S.B.O.Challenges of Human Immunodeficiency Virus-HIV mother to child transmission in Kenya, Paper presented at the 25th Annual KOGS scientific conference at Whitesands Hotel, Mombasa, Kenya.

5. A guide to the clinical care of women with HIV. Preliminary Ed. 2000, HIV and Reproduction.

6. US Public Health Science recommendations for HIV counseling and Voluntary Testing for pregnant women. CDC. MMWR Morb Mortal Wkly Rep 1995; **44**:1-15.

6. Landesman S.H., Kalish L.A., Burns D.N. Obstetrical factors and transmission of HIV from mother to child N. Engl. J. Med. 1996; **334**: 1617-23.

7. Krist, A.H Obstetric care in-patients with HIV disease AM. Family Physician.2001; 63.

8. Temmerman, M. Bwayo. J. Ndinya-Achola, J. HIV-1 and immunological changes during pregnancy. A comparison between HIV-1 seropositive and HIV-1 seronegative women in Nairobi Kenya. Aids September. 1995; **9**:1057-60.

9. Mmio, F.A., Ndugwa, C.M. The effect of HIV infection on the outcome of pregnancy in Ugandan women. Journal of Obstetrics and Gynaecology of East and Central Africa, 1993;11:32.

10. Vurns D.N., Tuomala R., Chang B.H. Vaginal colonization or infection with candida albicans in human immunodeficency virus-infected women during pregnancy and during the postpartum period. Women and infant transmission study group. Clinical Infections Diseases.1997; 24: 201-10.

11. Taha T.E., Dallabeta G.A., Canner J.K The effect of human immunodeficiency virus infection on birth weight and infant and child mortality in Urban Malawi
International Journal STD AIDS.1992; 3:418-22

12. Leroy, V., Ladner, J., Nyiraziraje, M.Effect of HIV-1 infection on pregnancy outcome in women in Kigali Rwanda 1992 to 1994. Pregnancy and HIV study group. AIDS.1998; 12:643-50.

13. Minkopp, H; Burns, D.N.The relationship of the duration of ruptures membranes to vertical transmission of HIV.Am J. Obstet Gynaecol.1995; 173:589-90

14. Fowler, G.M; Swionds, R.J.Update on perinatal HIV transmission. Paed. Clins. of North America. 2000; 43.

15. Public health services task force recommendation for the use of antiretroviral Drugs in pregnant women infected with HIV-1 for maternal health and for Reducing perinatal transmission of HIV-1 in the United States (ACTG 076).

16. Vuthipongse P., Chaisilwattana, P., Roongpisuthipong, Administration of Zidovudine during late pregnancy and delivery to prevent Perinatal

HIV transmission - Thailand 1996- 1998.Morbidity and Mortality Weekly Report.1988; 47:152-154.

17. Mertens, T; Low-Beer, D. HIV and AIDS. Where is the epidemic going? WHO Bulletin.1996; 74:121-9.

18. Asiimwe-Okiror, G; Opio, A.A., Musinguzi, J. Changes in sexual behaviour and decline in HIV infection among young pregnant women in urban Uganda. AIDS, 2000;11:1757-63.

19. Anonymous. Therapeutic and other interventios to reduce the risk of mother to child transmission of HIV-1 in Europe. The European Collaborative Study. Br. J of Obstet. Gynacol. 1998; 105: 704-9.

OBSTETRIC CASE NO 14

CERVICAL INCOMPETENCE-CERVICAL CERCLAGE, LIVE BABY AT TERM

Name	P.S	Parity	1 + 6
Age	30 years	LMP	18/11/00
IP NOl	0723082	EDD	25/8/01
DOA	21.03.01	Gestation	17 weeks 3 days
DOD	28.03.01		

HISTORY OF PRESENTING COMPLAINTS

The patient was admitted through the antenatal clinic for insertion of a Mcdonald stitch. She had no complaints at that time.

OBSTETRICS AND GYNAECOLOGY HISTORY

She was a para 1 + 6. Her first delivery was to a live male baby. She did not know the weight of the baby. Subsequently, she had six abortions between 5 - 6 months in 1991, 1993, 1994, 1995, 1996 and 1997.

All her pregnancies till the index pregnancy were at home in Kakamega. All the six abortions started with drainage of liquor, followed by pain and spontaneous expulsion of the products of conception. She had never sought medical advice, and no investigations or evacuations had ever been done.

She could not recall when she attained menarche. Her menstrual cycles were regular occurring every 30 days and lasting 4 - 5 days. Her last menstrual period was on 18/11/00. her EDD was 25/8/01. she was at a gestation of 17+ weeks. She had never used any method of family planning.

ANTENATAL CARE

She was booked for antenatal care at Kenyatta National Hospital at 16+ weeks. She had no complaints. Her history had been reviewed and she was examined. On vaginal examination, her cervix was found to be very short with a defect noted at the 3 O'clock position and easily admitting one finger. The need of cervical cerclage was advised. An antenatal profile, urea and electrolyte levels and ultrasound scan were requested for and the patient was advised for admission once they were all done.

She was seen in the ward three days later and arrangements were made for her admission.

FAMILY AND SOCIAL HISTORY

She was married and lived in Kakamega. The husband lived in Kibera and worked as a gardener at a private residence. He visited her once a year during annual leave. Her marriage was unhappy due to her inability to "bear children". Her plight was heard by some local ministries, who provided financial assistance and transport to Nairobi and referral for proper medical assistance.

She did not smoke or drink alcohol. There was no history of chronic illness in the family.

PAST MEDICAL HISTORY

A part from that already mentioned,it was not contributory.

PHYSICAL EXAMINATION

She was in a good general condition. She had no fever, pallor or oedema. Her blood pressure was 120/70 mmHg, pulse 80 beats per minute, regular and of good volume, respiratory rate 24/min and temperature was 36.0^{0}C.

ABDOMINAL EXAMINATION

She had a fundal height corresponding to 18 weeks gestation. There was no tenderness. Fetal parts were felt.

VAGINAL EXAMINATION

She had normal external genitalia. There was no discharge, bleeding or drainage of liquor. The vaginal walls appeared normal. The cervix was very short about 0.5 cm long, soft, central and there was a defect at the 3 O'clock position. The internal os easily admitted one finger but the membranes were not building.

The nervous, respiratory and cardiovascular systems were normal.

INVESTIGATIONS

1. Haemogram;
   Haemoglobin - 11.3 g/dl
   White Blood Cells - 8.3 X 10^9/L
   Platelets - 201 x 10^3/L
2. VDRL Negative
3. Blood Group B rhesus positive
4. Urea and Electrolytes;

Sodium	143 mmol/L
Potassium	4.3 mmol/L
Urea	2.0 mmol/L

5. Obstetric Ultrasound; Single viable fetus in cephalic presentation corresponding to 17 weeks gestation. No gross abnormalities are seen. The placenta is fundo anterior and amniotic fluid is adequate.

DIAGNOSIS

30 years old para 1 + 6 with cervical incompetence at 17 weeks gestation.

MANAGEMENT

The diagnosis and management were discussed with the patient and informed consent obtained for insertion of a McDonald stitch in theatre under general anesthesia.

In theatre, anesthesia was administered and the patient positioned in lithotomy. The vulva and perineal area was cleaned with hibitane solution and draped. She was catheterized and about 30 mls of clear urine drained. A repeat vaginal examination confirmed the previous findings.

The cervix was exposed by use of 2 Sims speculums and held in place by an assistant. The anterior and posterior cervical lips were held with two sponge holding forceps and gentle traction applied. Cerclage was done using a No. 2 silk suture on a traumatic round body needle with bites taken at 5, 2, 10, 7 O'clock position at the junction of the cervix and vaginal mucosa. The purse string was tightened to barely admit the tip of the small finger and knotted at 5 O'clock position. Enough suture length was left for easy identification and removal later.

No bleeding or leakage of liquor was noted. Anesthesia was reversed and the patient observed in the recovery room.

POST OPERATIVE MANAGEMENT

Vital signs were observed half-hourly till she was fully awake then she was transferred to the wards. She was commenced on ventolin tabs 4 mg 8 hourly, phenobarbitone tabs 30 mg 8 hourly, paracetamol 500 mg 8 hourly and advised on bed rest.

Post-operatively ,she remained well and did not develop any vaginal bleeding, liquor drainage, abdominal pain or uterine contractions. She was discharged after five days with advice to continue with her medication and to abstain from sexual intercourse. She was booked to be reviewed in the antenatal clinic after one week.

FOLLOW UP

The rest of the antenatal period was uneventful. She was seen in the clinic after 37 completed weeks and advised to go for stitch removal in labour ward. This was done easily and since she was not in labour, the patient was allowed home to await onset of spontaneous labour. A week later she was readmitted in active labour. She progressed well and delivered a live baby, 3100 grams who scored 8 at 1, 9 at 5, and 10 at 10. she was discharged the following day to be followed up in Kakamega and advised to report early during her next pregnancy.

DISCUSSION

Cervical incompetence is a nebulous term used to explain spontaneous pregnancy loss due to the inability of the cervix to retain products of conception as a result of cervical weakness[1,2] .

Many authors feel that the term cervical incompetence is derogatory and many women who receive this diagnosis, may feel they are unfit or incompetent as mothers or as women and hence a call to change the terminology to "premature cervical dilation without labour" which is both more descriptive and less prejorative to women.

Cervical incompetence is an important, but undoubted over-diagnosed condition because they are no set definitions or diagnostic criteria and this is reflected in the reported rates of incidence ranging from 0.05-2 per 100 pregnancies[3]. Njagi (1978) reported a rate of 1 per 90 pregnancies at Kenyatta National Hospital[2].

Cervical incompetence remains a presumptive diagnosis that is poorly understood and whose actual etiology is not known. Cervical trauma from conization, laceration or excessive mechanical dilation has been implicated. The occurrence in primigravidas suggest alternative causes such as associated uterine anomalies, prenatal exposure to diethylstilbestrol, abnormal histology of cervix and an inherent weakness of the cervix[3]. In Kenyatta National Hospital, Kagia found that 33% of the patients had a history of prior abortion and evacuation. In the patient presented, a discemable cause was not determined. [2]. [4]

Unfortunately, to date it has proved impossible to define cervical incompetence on objective grounds and diagnosis has been based mainly on the clinical history and physical findings.

Classically as first described by Lash and Lash (1950)[5] , the patient presents with repetitive, acute, painless midtrimester abortions without bleeding or uterine contractions and with decreasing gestation.
Cervical dilation causes prolapse and ballooning of the membranes into the vagina, followed by rupture of the membranes and expulsion of the fetus,

and unless treated, this sequence tends to repeat itself in each pregnancy with decreasing gestation. In practice, most patients do not present with this classic picture. Our patient had a history of acute, repetitive midtrimester abortions that was preceded by rupture of the membranes.

Numerous methods have been described to aid the diagnosis of cervical incompetence, usually by documenting a more widely dilated internal cervical os than is normal. In the non-pregnant women these have included histerography, which may show funneling and shortening of the cervix, pull through techniques of inflated catheter balloons and the easy passage without resistance at the internal os of No. 8 Hegar's dilator[5]. During pregnancy, attempts have been made with moderate success to predict premature cervical dilation using ultrasound techniques. Transvaginal ultrasound (TVS) has shown some promise and is based on measuring the cervical length. The usual length of the cervix is about 4.0 cms as measured by TVS and women with cervical length less than 2.5 cm have been found to be increased risk.

Baden in 1960(6) suggested a grading system for the severity of cervical incompetence ranging from mild to very severe and based on the gestational age at which abortion occurred, however this has not proved to be very useful in clinical practice.

Treatment of cervical incompetence is principally by surgery consisting of reinforcement of the weak cervix by some type of purse string suture (cerclage). Prior to surgery, sonography to confirm a living fetus and to exclude major fetal anomalies must be done. Obvious cervical infection must be treated, and patients advised that there should be no sexual intercourse for at least a week before surgery and thereafter till removal of the stitch. Surgery (cerclage) should generally be delayed until after 14 weeks to allow early abortion due to other factors to occur. It is rarely done after 26 weeks. Njagi found the optimal time at Kenyatta National Hospital to be between 14-19 weeks.[(2)]. In the case presented cerclage was successfully performed at 17 week gestation.

Contraindications to surgery include ruptured membranes, uterine contractions, uterine bleeding, chorioamnionitis polyhydrammos, cervical dilation of greater than 4 cm, or a known fetal anomaly.

Several types of cerclage procedures have been described; the Mcdonald, modified Shirodkhar and the Shirodkar procedures are commonly performed.

The Shirodkhar operation places a reinforcing band around the cervix beneath the mucosa at the level of the internal os. The Mcdonald procedure places a reinforcing purse string suture around the proximal cervix with the suture not being buried in its entirety. It has the advantage of simplicity and ease of removal and is the commonly performed procedure in our unit.

In certain cases, especially in cases of anatomical defects of the cervix or failed transvaginal cerclage an intra-abdominal approach may be employed with the placement of a band at the level of the internal os in a avascular space between the branches of the uterine arteries. Subsequent delivery is then by caesarian section.

Success rates with cerclage are difficult to assess because of the difficulteis in diagnosis of cervical incompetence. An overall review of the literature has shown successful pregnancy rates of over 70%, following cerclage in patients who had poor results without its use[6]. Njagi at Kenyatta National Hospital reported success rates of 53% while Ruminjo in a rural set up in Kenya reported success rates of 69.5%[7].

Postoperative care is not uniform and has not been well established. Bed rest for several days and reduced activity thereafter, is recommended. Prophylactic antibiotics and tocolytic agents are used in some centers and also in our unit. The patient should also avoid coitus after the procedure. The patient presented was advised on these.

Complications of cervical cerclage include hemorrhage, rupture of membranes, infections, uterine rupture, cervical dystocia, vesicovaginal fistulae and fetal death. Complications usually vary with the timing of cerclage placement and the type of procedure performed.

The cerclage suture is removed after 37 completed weeks, when fetal pulmonary maturity is confirmed or if the patient goes into labour. Earlier removal is indicated when there is rupture of membrane, infection, fetal death and hemorrhage. In our patient the stitch was removed after 37 completed weeks. She subsequently went into labour a week later with good outcome.

REFERENCES

1. Cunnigham FG, Mcdonald PC, Gant NF et al
   Abortion
   In William's Obstetrics, 20th Ed 1997, Chapter 26 Page 588
   Appleton + Lange, Conneticut, USA

2. Njagi PEN,
   Cervical Cerclage for Management of Cervical Incompetence at Kenyatta National Hospital.
   MMed Thesis University of Nairobi, 1978.

3. Whitfield CR
   Abortion and Ectopic Pregnancy
   In Dewhursts Text Book of Obstetrics and Gynaecology for Post-Graduates
   5th Ed,, Chapter 12, Page 143
   Blackwell Sciences

4. Rock JA, Thomson JD
   Management of Abortion
   In Telindes Operative Gynaecology, ,8th Ed 1997, Page 481
   Lippincott - Raven Publishers, USA

5. Kagia JW
   Radiological Changes of Incompetent Cervix at Kenyatta National Hospital
   MMed Thesis,University of Nairobi, 1980

6. Baden WP, Badon EG,
   Cervical Incompetence; Current Therapy
   Am Jourm Obstetric & Gynaecology (1960) 79, 545

7. Lash AF, Lash SR,
   Habitual Abortion; Incompetence Internal Os of the Cervix
   Am J. Obstetric Gynaecology 1950, 9;68

8. Ruminjo JK, Nuwagobu C,
   Experience with Cervical Cerclage in a Rural setting
   East African Medical Jour. August, 1991, Vol 68, No; 8

OBSTETRICS CASE NO 15

TWIN PREGNANCY IN LABOUR, SVD, LIVE BABIES

NAME:	C.A	DOA:	19/11/00
AGE:	28YEARS	DOD:	20/11/00
PARITY:	1+0	LMP:	11/3/00
IP NO:	0697540	EDD:	18/12/00
		GESTATION:	36 weeks

PRESENTING COMPLAINTS

She was admitted to labour ward from home through casualty with complaints of labour pains for 12 hours and drainage of liquor for 4 hours

HISTORY OF PRESENTING COMPLAINTS

She was well prior to the onset of the present complaints. Twelve hours prior to admission, she developed lower abdominal pain, which progressively increased in intensity. It was intermittent and radiated to the back. Later on, she also started draining clear liquor, but she had no vaginal bleeding.

OBSTETRIC AND GYNECOLOGICAL HISTORY

She had her menarche at 14 years and her menstrual periods were regular, occurring every 30 days and lasting 5 days. She had no dysmenorrhea. She had not used any contraceptives. She was para 1+0, her last delivery was in 1996 by SVD at term and the child was alive and well. Her last menstrual period was 11/3/00 and her expected date of delivery was 18/12/00. She was 36 weeks of gestation at the time of admission. She had attended antenatal clinic at a private clinic, which she said was uneventful. Hemoglobin level was 11g/dl, blood group was O positive, and urinalysis had trace protein on two occasions. Her weight gain was noted to be excessive, though blood pressure remained within normal range 120-130/70-80mmHg. A diagnosis of multiple pregnancy had not been made antenatally though the fundal height was always greater than expected dates. An ultrasound scan had not been done antenatally.

PAST MEDICAL HISTORY

This was not significant. She had no past history of fertility drug use.

FAMILY AND SOCIAL HISTORY

She was a housewife living with the husband at Dandora. The husband worked at Jomo Kenyatta Airport as a store man. There was no family

history of twinning or chronic illnesses. She did not smoke cigarettes or use alcohol.

PHYSICAL EXAMINATION AT ADMISSION

She was in fair general condition. She had no jaundice or fever. She was mildly pale and had puffiness of face. She had mild bipedal oedema. Her vital signs, BP-140/90mmHG, pulse rate 78 beats per minute, respiratory rate of 20per minute, temperature of 35.5^{0}c.

Respiratory, cardiovascular and central nervous systems were examined and found normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended and the fundal height was term. She had moderate abdominal wall oedema and prominent striae. There were multiple foetal parts palpated and both twins were presenting by cephalic. Two foetal hearts were heard and they were both normal and regular. She had three uterine contractions every 10 minutes, lasting between 20-40 seconds. The presenting part of first twin was 2/5 up.

PELVIC EXAMINATION

She had normal external genitalia and her cervix was fully effaced and the OS 9cm dilated. The presenting part was cephalic and well applied to the cervix. There was no caput or moulding. Clear liquor was draining. The pelvis was clinically adequate. Aseptic catheterization was done and 200mls of clear urine drained

DIAGNOSIS

A diagnosis of twin pregnancy at 36 weeks gestation in first stage labour, with first twin in cephalic presentation.

MANAGEMENT

An intravenous line was established and 10% dextrose infusion started. Injection buscopan 40mg was given intravenously and a partograph was started. Patient was informed that she was expecting twins. Vaginal delivery was expected and she was due for review after one hour.
Before the next review, she went on and had vaginal delivery to 1^{st} twin, a male, who weighed 2.4kg and scored 10/1, 10/5. Review after delivery of the first twin indicated that the second twin was in cephalic presentation. Stabilization of the head was done and syntocinon drip put up. Membranes were artificially ruptured and delivery effected. The second twin was a live female infant who weighed 2.0kg , scored 10/1 and 10/5.

After 20 minutes the placenta was delivered by controlled cord traction, it was large with a weight of 650gms and diamnionic monochorionic. Estimated blood loss after delivery was about 600mls. Syntocinon infusion with 20.I.U in 500mls of 10% dextrose was given after delivery with good effect.

Both infants were examined and found to have no obvious malformations. The mother was observed in the recovery room, and no complications were noted. The mother and the infant were discharged home the following day after nutritional counseling, mother was also started on haematenics and was advised to come to postnatal clinic after 6 weeks but she failed to honour her appointment.

DISCUSSION

Presented here is a para1+0, who presented to our unit in labour and was realized to be having twin gestation, with both twins in cephalic presentation. She progressed well in labour and delivered twins vaginally.

Multiple pregnancy is the term used when more than one foetus, is carried by a woman in the uterus at he same time. Twin pregnancy means two foetuses and is the most frequent occurrence of all multiple pregnancies. Twins produced from a single ovum are monozygitic or true twins, while those those produced from separate ova are dizygotic of false twins. Monozygotisms is random, without any discernible genetic pattern while dizygotism has hereditary determinants. Nearly 50% of twins are monzygotic and about 70% are dizygotic (1)

Before the introduction of assisted reproductive technologies (ART), the frequency of monzygotic twins was relatively constant throughout the world. The incidence was 4 per 1000 births, with a ratio of 2:1 for dizygotic pairs (2)

The incidence of naturally occurring dizygotic twins varies and is affected by maternal race, age, nutritional status , family history and use of ovulation induction drugs. (2)
This may be related to higher levels of gonadotrophins in certain groups of women. The highest incidence of dizygotic twins has been found in black women, lowest in Asians and intermediate in whites (1,2)

The frequency of multiple births among white women is 1 in 100 pregnancies, while it is 1 in 80 pregnancies among black women. In some areas of Africa, the frequency is very high, in rural Nigeria, it has been found to be 1 in 20 pregnancies (3)

At Kenyatta National Hospital (KNH), the twining rate was found to be 1 in 50-60 births (4,5). The incidence of multiple births has been steadily increasing. In the U.S, between 1973 and 1990, twin births increased by

65% with an incidence of 1 in 43 pregnancies from 1 in 80 pregnancies in the 1970s. (6)

Higher birth orders increased by 22% with incidence of triplets of 1 in 1341 (6). The rate of singleton births increased by only 32% during this period. This has been due to the more widespread use of ART. (7)

Patients who conceived after treatment with ovulation inducing agents or in vitro fertilization proceedures do so with a multiple gestation rate of 7-50%, 25-50% for twins 5-7% for triplets and higher order births. (2)

Recent trends towards delaying child rearing in developed counties have also contributed to the increase in multiple births. There is a natural occurring greater incidence of twins among older women (6,7,8)
The patient presented here was aged 28 years, of African origin, but with no obvious predisposing factors to twining.

Monozygotic foetuses have identical genotype while multizygotic ones have different genotypes. Muiltizygotic fetuses are thought to be the result of multiple ovulation. (2)

All dizygotic twins have separate diagnostic dichorionic placentae. Higher order multiple gestations can contain any combination of monozygotic and multizygotic fetuses. (2)

Factors that increase the chance of conceiving a multiple gestation include a family or personal history of spontaneous twins and the use of ovulation induction or gamete or zygote transfer procedures(2)

Currently, over 90% of twins are diagnosed before delivery in the developed countries. Early diagnosis of multiple gestations is important because outcomes are much better than if the multiple births are a surprise in the delivery room.(2)
Both maternal and Perinatal morbidity and mortality are increased appreciably in multiple foetus pregnancies. Early diagnosis, follow-up and management of any complication is important in order to reduce the morbidity and mortality. But occasionally the diagnosis is made late in pregnancy or even in labour (2). The diagnosis for the patient presented was made when she came in labour.

A familial history of twins give only a weak clue, but knowledge of recent administration of either clomiphene or pituitary gonadotropin gives a strong clue. (3)
During the second trimester, a discrepancy develops between gestational age determined from menstrual data and that from uterine size. The uterus that contains two or more foetus clearly becomes larger than one with a single foetus (3).

Other common clinical signs or symptoms suggestive of twins include, hyperemesis gravidarum, auscultation of two or more fetal heart rates and accelerated maternal weight gain (2) .Ultrasound has become indispensable for the identification, assessment and later management of multiple gestations. (2)
Higher levels of biochemical pregnancy markers such as beta-HCG, progesterone, oestriol and maternal alpha-fetoprotein than in a singleton are also suggestive of a multiple gestation, but are not specific enough for a diagnosis without ultrasound examination. (2)
At diagnostic ultrasound, multiple sacs can be seen at 4-5 weeks with trans-vaginal probe, embryos within the sacs are seen at 5-6 weeks and foetal heart activity can be identified at 6-7 weeks. It is advisable to reserve the diagnosis of twins until foetal poles, each with a beating heart are seen (2). The patient had not had an obstetric ultrasound done during pregnancy. She had attended antenatal clinic at a private facility.

Examination of the placenta after birth, blood grouping and DNA-mapping techniques are methods used to determine zygosity. In our set-up we utilize visual examination of placenta after birth, as we are not able to do DNA-mapping techniques.

Multiple gestation contribute significantly to perinatal morbidity and mortality, accounting for 12.6% of Perinatal mortality. The overall Perinatal mortality for twins in developed countries is about 50 per 1000 births. The risk of Perinatal death is 3-10 fold higher for a twin than for a singleton. The Perinatal mortality rate for triplets, corrected for congenital malformations is 11per 1000 births. (2,8,9)
The relatively high incidence of perinatal mortality is largely due to complications of prematurely, 50% of twins and 88% of triplets are born before 37 weeks either because pre-term labour, pre-term PROM or other foetal/maternal complications. (6)

Prematurely results in babies being born at low birth weight and birth-weight has been shown to be the most important factor for predicting morbidity and mortality in twins. (2). The patient presented had pre-term labour at 36 weeks and the foetal weights were 2.4kg and 2.0 kg which were low for the gestational age.

Foetal growth restrictions complicates about - 47% of multiple gestation and the degree of growth restriction tends to increase with increasing number of foetus (2).Growth discordance between the foetus complicates about 15% of twins and 54% of triplets. It is associated with even higher morbidity and mortality especially for the smaller twin. (2)

The incidence of congenital malformations in multiple gestation is 1.5-3 times higher than in singleton (2).
Intra uterine foetal demise of one twin may occur and if it occurs later in gestation, it is associated with increased risk of pre-term delivery, foetal growth restriction and high Perinatal mortality in the survivors. (2)

Abortion is more likely to occur with multiple gestations than in singleton. (3) .Women carrying multiple fetuses are at greater risks of medical and obstetric complications than women carrying singleton pregnancies. Such complications include hyperemesis gravidarum, cholestasis of pregnancy, acute fatty liver of pregnancy, hematological complications of iron and folate deficiency anaemia, gestational diabetes, urinary tract infections and pre-eclampsia. (2)
Obstetric complications include pre-term labour, pre-term PROM, haemorrhage and high rate of caesarean delivery (2). The complications noted in the patient were growth restriction and pre-term labour.

Antepartum management included multi-foetal pregnancy reduction, which reduces both maternal and Perinatal morbidity and mortality. (2)
Prenatal diagnosis by ultrasound and biochemical marker screening to identify serious anomalies and selective termination of the abnormal foetus may also be done (2)

An intensive antenatal care, with patient education on likely complications, nutrition, pre-term birth prevention and foetal surveillance may decrease the perinatal morbidity and mortality in multi-foetal pregnancies. (2)
Supplemental iron and folate should be given from the time the diagnosis is made ,prenatal vitamins and calcium are also useful. Patients with multiple gestation also require increased fluid intake, and a diet rich in protein and calories. (1,2,3)

For prevention of pre-term labour, prophylactic cerclage has not been universally recommended, hospitalization and bed rest have no been found too be of benefit unless when other complications warrant it, and prophylactic tocolytic therapy has not been supported, and it may pause a significant risk in multiple gestations. (2)

But once pre-term labour has been diagnosed in absence of ruptured membranes and bleeding. Tocolysis is indicated. (1,2)

Administration of betamethasone or dexamethasome within several hours to 7 days of birth has been shown to decrease the incidence of respiratory distress syndrome, intraventricullar haemorrhage and necrotizing enterocolitis. But the efficacy and safety of weekly administration of antenatal corticosteroids is not proven and is not currently recommended (2)

An ultrasound done early confirms the diagnosis, assesses chorionicity and establishes good dating. A repeat scan at 18-20 weeks screens for foetal anomaly, confirms chorionicity and assesses the cervix. Thereafter, a scan is done every 3-4 weeks or more frequently in complicated cases to assess foetal growth, amniotic fluid volume and cervical length (2). The patient presented had not had any ultrasound antenatally.

All multiple gestations are at some increased risk for unexplained demise and uteroplacental insufficiency and antepartum foetal testing should be done. In most centers, the non-stress test is the primary method and is performed at least weekly form 32 weeks gestation in uncomplicated case. An abnormal screening test should be followed by a more sensitive and specific test, such as foetal-acoustic stimulation test or biophysical profile. (2)

Contraction stress may be performed safely in some cases of multiple gestations, but this form of foetal surveillance is rarely used, because multiple pregnancies are often complicated by conditions for which CST is contra-indicated. (2)

The foetal biophysical profile is also a reliable method of foetal surveillance in multiple gestation; it has the advantage over non-stress test in the ability to assess amniotic fluid volume. In women with additional risk factors for utero-placenta insufficiency or fetuses already with growth restriction, it should be done weekly (2). Foetal surveillance was not done on the patient presented, as diagnosis was not made antenatally.

Doppler velocimetry of the umbilical artery is good predictor of poor perinatal outcome, but its use should be limited to pregnancies at highest risk. (2)

Controversy exists regarding the timing of delivery in multiple gestations. Uncomplicated twins should not be electively delivered before 38 weeks and there is no contra-indication to expectant management until at least the due date as long as there are reassuring test results. The elective delivery of higher order pregnancies, which is almost always by caesarean section, can be justified slightly earlier, at 37 weeks (2)

Multiple gestations however are at higher risk, as gestation progresses and consideration should be given to earlier delivery in these situations only after confirmation of foetal lung maturity, unless there is and absolute foetal or maternal indication for delivery. (2)

Delivery of all multi-foetal pregnancies, even the seemingly uncomplicated have the potential for serious complications. Intrapatum management of twins considers the relative presentation of twin A and twin B. There is widespread agreement that vaginal delivery of vertex-vertex twins is appropriate. During labour, twin A can be monitored by scalp electrode once the membranes are ruptured while twin B can be monitored by external cardiotocography (2). The patient presented had vertex-vertex twins and vaginal delivery was accomplished in both.

The time interval between deliveries of the twins is not critical factor as long as the well being of the second twin is continuously assessed. But if labor has not resumed within 10 minutes of delivery of A, a careful

syntocinon augmentation can be used. (2). Caesarean delivery of either or both twins should be undertaken for the same indications as in singletons.

There is no definite conclusion at the time regarding the optimal management of vertex-non-vertex twin gestation. One option is that of elective caesarean delivery because of the possibility of birth trauma or birth asphyxia to the vaginally delivered non-vertex twin (10). Two other options after delivery of first twin vaginally, are external cephalic version with subsequent vaginal delivery or total or assisted breech extraction. (2). When considering these options, sonographic assessment of sizes of both foetus is necessary, if twin B is larger than twin A, the option of elective caesarean section should be considered. Vaginal breech delivery for the second twin is recommended after a failed version attempt, only if the standard criteria for vaginal breech are met. (2). These criteria include adequate maternal pelvis, a flexed foetal head and an estimated foetal weight of 2000-3500 Gms. But if these criteria are not met or if there is evidence of foetal distress, immediate caesarean section should be performed. Caeserean delivery is usually recommended for twins when the first is not vertex, because the safety of vaginal delivery in this setting has not been established and there is a potential risk of interlocking foetal heads (2). The patient presented came in advanced labour with both twins A and B in cephalic presentation. Vagina delivery was achieved for both twins.

Most authorities still recommend caesarean delivery for all high order multiple gestations. The complexity of both maternal and foetal problems seen with multiple gestation argues for antepartum and intrapartum management by multidisplinary team of experienced personel (2)

REFERENCES:

1. Martin L. Pernoll, Ralph C B. Muiltiple pregnancy. In current obstetric and gynaecologic Diagnosis and treatment. 8th Ed, Appleton and Lange, 1991, pages 352-363.

2. Multi-foetal pregnaies, epidermiology , clinical characteristics and management. In: Medicine of the foetus and mother, second editon by E. Alber reece and John C. Hobbins, Lippincott-Raven publishers, Philadelphia, 1999 page 243-262.

3. Cunningham FG, MacDonald PC, Gant NF. Multi foetal pregnancy. In: Williams obstetrics, 21st edition, Appleton and Lange - Connecticut, 2002, pages 891-918.

4. Oyieke J B - a two and half year review of some aspects of twin pregnancy at KNH MMED thesis,University of Nairobi, 1978

5. Mutungi A - prospective study to twin delivery at K.N.H and PMH. ANC and delivery. MMED Thesis University of Nairobi, 1990.

6. Luke B. the changing pattern of multiple births in the United States, maternal and infant characteristics, 1973 and 1990. obstet. Gynecol 1994: 84: 101-106.

7. Jewell SE, Yip R. increasing trends in plural births in the United states. Obstet Gynecol 1995: 85: 229-233.

8. Spellacy WN, handler A, Fere CD. A case - control study of 1253 twin pregnancies from 1982 -1987, Perinatal database. Obstet gynecol 1990, 75: 168-171.

9. powes WF, Kiely L. the risk confronting twins. A national perspective. Obstet gynacol 1994: 170: 456-461

10. Prins RP. The second-born twin: can we improve outcomes? AM J. Obstet Gyecol 1994:170:1649-1656

LONG COMMENTARY IN OBSTETRICS

TITLE

KNOWLEDGE, ATTITUDE AND PRACTICE ON PERINATAL HIV TRANSMISSION AND PREVENTIVE MEASURES AMONG ANTENATAL MOTHERS AT KENYATTA NATIONAL HOSPITAL

ABBREVIATIONS

ARV Anti-Retro Viral drugs

AIDS Acquired Immune Deficiency syndrome

VCT Voluntary Counseling and Testing

PMTCT Prevention of Mother to Child Transmission of HIV

MTCT Mother to Child Transmission of HIV

KAP Knowledge Attitude and Practice

C/S Caesarean Section

ABSTRACT

BACKGROUND; Perinatal Human immunodeficiency virus (HIV) transmission has been shown to be a major route of HIV transmission in children and it accounts for over 90% of HIV infection in children in Kenya (3). Prevention of perinatal HIV transmission is a major goal in the care of HIV pregnant women (9). High awareness (90%) on perinatal HIV transmission has been shown previously but this has not translated into decrease in pediatrics HIV infection from perinatal HIV transmission (1). By assessing Knowledge, attitude and practice (KAP) on Perinatal HIV transmission and preventive measures, the gaps can be identified to allow effective interventions to be adopted.

OBJECTIVE; To determine the knowledge, attitude and practice on perinatal HIV transmission and preventive measures among antenatal mothers at Kenyatta National Hospital.

STUDY SITE; The study was carried out in the antenatal clinic of Kenyatta National Hospital

STUDY DESIGN; This was a cross-sectional survey

STUDY METHODOLOGY; A total of 220 antenatal clients were recruited into the study and gave written consent to participate. Systemic sampling method was used where every 3rd client was selected. A pre-tested questionnaire was administered in a private room after the client had been attended to and undergone through all the clinic routine which included history taking, physical examination, antenatal profile data, and HIV voluntary counseling and testing (VCT). The questionnaire was used to collect information on socio-demographic characteristics; reproductive history, knowledge, attitude and practice on preventive measures on perinatal HIV transmission. The HIV results were recorded as soon as they were available in the clinic.

RESULTS; HIV sero- prevalence was 11.4% in the study population. 87% (195) of the antenatal clients had correct knowledge on perinatal HIV transmission with 100% (25) of the HIV positive and 87% (170) of the HIV negative . This difference was not statistically significant (p=0.12).
Correct knowledge, attitude and practice (KAP) on prevention of Perinatal HIV transmission as regards breastfeeding (average of 81% of HIV positive and 83% of HIV negative) and antiretroviral drugs (average of 75% of HIV positive and 82% of HIV negative) was high . In both cases, HIV serostatus had no statistical significance on type of KAP. 88% of clients had cultural beliefs and practices as regards breastfeeding that promote Perinatal HIV transmission. Correct KAP on elective caesarean section(c/s) was low; the average for HIV positive was 33% and for HIV negative was 49%.

CONCLUSION; **The seroprevalence of HIV was similar to that found in the national surveys on HIV. Correct knowledge on Perinatal HIV transmission was high as well as correct KAP on PMTCT of HIV except for elective c/s. The cultural beliefs and practices on breastfeeding mostly favored Perinatal HIV transmission. HIV serostatus had no significance statistically on type of KAP on PMTCT.**

INTRODUCTION AND LITERARUTE REVIEW

Worldwide heterosexual transmission is responsible for most infection with the human immunodeficiency virus (HIV) which causes Acquired Immunodeficiency Syndrome (AIDS)(1). In sub-Sahara African up to 80% of all HIV infection can be accounted for by heterosexual transmission, In Kenya it is 90% (2,3). Globally, approximately 2 million HIV infected women give birth each year to about 600,000 infected infants. (4). The world Health organization estimates that a total of 5-10 million had become infected with HIV through perinatal transmission, most of them in developing world by February 1999. (5) mother to child transmission rates differ considerably between the developed and developing countries. (1).Rates are higher in developing countries.

In Africa the sero-prevalence of HIV infection in pregnant women exceeds 20% in many areas. Perinatal HIV transmission rates have been reported to be 20-42%. (3). In Kenya urban sentinel sites in 1998 HIV prevalence among antenatal women ranged between 4-10% in low sero-prevalence sites to 20-35% in high seroprevalence sites. (3) HIV seroprevalence rates in pregnant women range from 0.3-1% in North America, 1-5% in South America, 10% in Caribbean Countries while in Europe rates are less than 1% (4).

In Kenya in 1999 10% of reported Aids cases were in children under 5 years of age and over 90% of HIV infection in children was due to perinatal HIV transmission. (3) it is estimated in Kenya that 100,000 infants are infected with HIV-1 annually due to Perinatal transmission (3). This can occur in utero, during labour and delivery and through breast feeding which is a common cultural practice (3).

The AIDS epidemic is eroding advances made over the past 50 years in maternal child health survival. In Kenya the united Nations programme on AIDS(UNAIDS) estimates the number of adults and children with HIV infection and AIDS to be 1.6 million with 50% being women.These statistics point to to HIV/AIDS as being one of the most serious reproductive health problem facing Sub-sahara Africa in general. The disease has negative effects on life expectancy. Infants mortality, adult mortality and dependency ratio. (7).

Perinatal HIV Transmission

The vertical transmission which is a process through which an infected mother passes infection to the child is thought to occur trans-plansplacentally during in utero development, during the intrapartum period (labour and deliver) and in the post partum by breast feeding from the milk of a woman who has HIV infection (8).Early vertical transmission has been defined as transmission that is detected within the first 48 hours of life. Later transmission is defined as negative virologic evaluation during the first week with evidence of HIV detection between 7 and 90 days of age (8).Approximately 30 to 60% of infants with HIV infection have detectable levels of virus in the blood (by RNA testing) within 48 hours of birth, indicating that these infections may have occurred during in utero development (8). Approximately 90% of the infants with HIV infection will demonstrate presence of viral markers within 12 to 30 days of infection, and almost 100% within 30 to 90 days of birth (8). The vertical transmission s associated with some factors like:- Higher HIV RNA viral load in blood and genetic variation, breast feeding (0.5% risk of infection each month that the baby is breastfeeding), sexually transmitted infections/chorioamnionitis, cigarattes smoking during pregnancy, older maternal age, prematurity and obstetric practices like instrumental deliveries, amniocentesis, external cephalic version, use of scalp electrodes, episiotomy, Rapture of membrane for more than 4 hours with 2% risks per hour of raptured membrane, repeated vaginal examinations and routine nasogastric suction of the newborn (3).

HIV- 1 has been isolated from breast milk in upto 70% of HIV infected mothers. The risk of transmission from breast feeding alone may be as high as 29% and this is related to duration of breastfeeding (9,10,11,12). Although estimates vary, a significant proportion of HIV positive children worldwide are believed to have been HIV infected after birth through breast feeding. The additional risk of transmission from breast feeding has been estimated to be from 10-14% in developing countries (13). Another estimates has been that there is an approximately additional risk of 0.5% per month of breast feeding (8). The dilemma for many HIV positive mothers in developing countries is that the risk of their infants dying of other diseases if not breast fed could be even greater than the risk of transmitting HIV infection through the breastmilk.Mothers who seroconvert to a HIV positive status after delivery and while breast feeding appear to have a higher risk of transmission than woman who were previously infected(8).

Although viral load is generally correlated with the risk of perinatal HIV transmission, women with undetectable viral loads have infact given birth to infants with HIV infection, and other women with very high HIV RNA levels have given birth to uninfected infants(8). The viral genotype and phenotype thus also plays an important role(3). Other factors associated with increased transmission which are assumed to reflect viral load include low CD4 cell

counts, advanced HIV disease, increased level of neopterin or Beta-2-microglobulin (15).

It is well documented that other sexually transmitted infection such as gonorrhoea, syphilis and herpes simplex infections may increase the transmission of HIV. Likely mechanisms include impairment of genital mucosal immunity, local and systematic effects on host immunity. The recent prospective randomized controlled trial in Tanzania that investigated the effects of treating STI's on HIV incidence indicated a decrease transmission in the treatment arm compared to the placebo group. Though the result did not examine vertical transmission specifically, it would however be reasonable to expect reduced infant HIV incidence due to reduced maternal HIV prevalence and reduced genital laceration and hence intrapartum HIV exposure (16).

Other risk factors for perinatal HIV transmission include intrapartum haemorrhage, twin deliveries where studies have shown that there is a discrepancy in vertical transmission rates between the two infants i.e first born twins who spend more time in the birthcanal in contact with cervicovaginal secretions had increased risk of HIV infection(8).HIV virus has been detected in cervical secretions of 40% of HIV positive pregnant women (16, 17, 18).

Prevention of mother to child transmission of HIV(PMTCT)

Preventions of perinatal HIV transmission is a major goal in the care of HIV pregnant women (19). This is achieved by anti-retroviral therapy ,caesarean section delivery,Breast feeding options and modification of routine care during delivery like avoiding the following :-Early rupture of membranes, episiotomy, instrumental delivery, scalp electrodes, repeated vaginal examinations and routine nasopharygeal suction. Vaginal cleansing with Hibitane may also reduce perinatal HIV transmission as well as early treatment of sexually transmitted infections. Good nutrition, mineral and vitamins supplementation has also been shown to have preventive role.

Anti-retroviral drugs administered to the mother have been shown to significantly reduce mother to child transmission of HIV infection thus reducing the cost of caring for HIV positive infants to the health care system and the family structure (3). The choice of anti retroviral regimes depends on the cost and financial status of the mother and the time point when she presents for care as there are those who attend antenatal clinic early, there are late attenders, non-attenders who present to the health care system in labour with unknown HIV status and those who deliver before arrival to labour ward and may not have attended antenatal clinic. Patients who are already on anti-retroviral drugs before pregnancy should continue with the same drugs she has been using. The welfare of the mother surpasses those of her unborn child(3) and thus the current WHO concept on MTCT plus.

Patient should be counseled that in the absence of anti-retroviral prophylaxis, the risk of vertical transmission is 25% but with the following

regimes, the risk is reduced accordingly; Zidovudine (AZT) short courses 300mg twice daily from 36 weeks and then 300mg orally every 3 hours during labour reduces the risk of perinatal HIV transmission by 50% in non-breast feeding and 38% in breast feeding while AZT given in long course regime of 100mg orally twice daily from 14-34 weeks then 2mg/kg intravenously for the first hour then 1mg/kg/hr during delivery followed by 2mg/kg AZT syrup for six weeks to the baby reduces vertical transmission in non breast feeding by 68%.Nevirapine given as single dose at the onset of labor and 2mg/kg single dose in the first 72 hours to infant reduces perinatal HIV transmission by 46% (3). Other combination of drugs therapies are also available like in the PETRA regime -AZT+3TC-twice daily beginning at 36 weeks gestation and orally in labor(AZT 600mg and 3TC 150mg orally at onset of labor, then AZT 300mg orally every 3hrs and 3TC 150mg every 12 hr) and postpartum to the infant and mother and this reduces transmission by approximately 50%

Long terms use of AZT(more than 6 months) may cause anaemia thus with haemoglobulin less than 8g/dl, it is advisable not to initiate AZT. The short and long term data on zidovudine have revealed a reassuring safety profile among exposed infants followed through preschool age (4). It is questionable whether resistance testing should guide antiretroviral drugs selection in pregnancy. Although guideline from the international AIDS society -USA proposed that resistance testing is indicated in pregnancy (20), there is no clinically demonstrated benefit in reducing transmission. To date resistance has not been significantly related to perinatal HIV transmission in most investigations, but a recent study did demonstrate a 5 fold increased risk in transmission among pregnant women with zidovudine resistance mutations (21).

Caesarean delivery perfomed before rupture of membranes or initiation of contractions may alter 2 different potential exposures; it may negate exposure to genital tract virus, reduce transplacental transfer of cellular material that significantly increases with labor or both(3).A series of observational studies reported variable results with regards to the protective effect of caesarean delivery,a meta-analysis of 8533 mother-infant pairs from 20 European and North American centers showed that in those women who were not taking anti-retroviral agents during pregnancy, the transmission rate for those who under went C-section was 10% compared with a rate of 19% in those with vaginal delivery. In women who had received anti-retrovirals during pregnancy, the rate of HIV transmission to the infant was 2% in women undergoing elective C-section, versus 7.3% in those who delivered vaginally. This study concluded that elective caesearean section was associated with 43% decrease in HIV transmission rate after adjusting for use of anti-retroviral therapy, advanced maternal HIV disease and low infant birth weight. [22] Because morbidity in HIV infected women undergoing caesarean delivery is increased, use of prophylactic antibiotics should be considered. [19] Other practical issues should be considered. It is impossible to tell, before delivery, whether a fetus has already acquired HIV infection, although this risk would seem to be very low. A caesarean delivery may therefore be futile in certain situations. It is difficult to carry out a planned ceserean delivery before

rupture of membranes and the onset of labour if fetal lung maturing is not jeopardized. Operative intervention places the pregnant women at significantly greater risk of postpartum complications; thus, it is unlike the issue of antiretroviral therapy where maternal and fetal treatment goals are compatible [4].

Therefore a careful, thoughtful counseling session is required to help the woman make an informed choice [4]. The patients' autonomy in making the decision regarding route of delivery must be respected. A patients informed decision for vaginal delivery must be honoured, with caeserean delivery performed only for other accepted indications and with patients consent [19].

Four out of every 10 children born to HIV infected women acquire HIV infection. Thirty to fifty percent of these infants acquire infection through breast-feeding. Overall half of the breast milk transmission takes place by 6 weeks, and three-quarters by six months. [3] The standard in infant feeding is breast milk-babies should be exclusively breast fed for the first 6 months of life. There is early evidence that mixed feeding increases the risk transmission of HIV. The benefits of bottle-feeding when an accessible and safe form of nutrition is available have been demonstrated in a randomized clinical trials. [23] However, breast-feeding issues are complex. This same study detected an increase in maternal mortality for women who breastfed [24] and other studies have uncovered a risk to mixed {bottle and breast} feeding. Prohibiting breast-feeding is not adequate, women must be instructed on how to successfully suppress lactation with use of compression, ice packs, bromocryptine and oral contraceptives. Women should be counseled about the different possible infant feeding alternatives. [3]. We need to respect the mothers' choice of infant feeding. Inform them of effects of treating breast milk with heat (rids it of HIV virus). [3] The mother is to make informed choice.

Knowledge attitude , practice and Uptake of PMTCT interventions

Voluntary counselling and testing must be encouraged during antenatal care so as to be able to strategize the preventive measures.Previous studies done on antenatal mothers else where in Nairobi showed 60-100% acceptance rate of testing after standard voluntary counselling but lower return rates for results of 50-100%. [1, 17, 25,26,27,28,29].

A study done at Agha Khan hospital in Nairobi recently [1] showed 90% awareness of perinatal HIV transmission (91.7% HIV positive and 89.1% HIV negative), perinatal HIV transmission through breast-feeding awareness was 75% for HIV positive and 73.5% for HIV negative while on prevention of mother to child transmission (PMTCT), 25% of HIV positive and 28.6% of HIV negative were aware of role of Anti-retroviral(ARV) drugs,25% of HIV positive and 15.5% of HIV negative were aware on the role cesarean section.

On the uptake of PMTCT interventions, UNICEF findings presented on the 3rd conference on global strategies for the prevention of HIV transmission from

mothers to infants held in Kampala, Uganda in September 2001 from their monitoring of United Nations-Sponsored PMTCT programs is summarised in the table 1 below.

Table 1: UNICEF/UNAIDS PMTCT Pilot Projects in Africa

Country	National ANC Coverage (%)	Antenatal HIV Prevalence		No. of Sites	HIV Testing Uptake	% of HIV positive accepting intervention	
		Urban	Rural			ARV's	Replacement Feeding
Burundi	79	18.6	19.7	1	72	42.7	No data
Botswana	92	43	30	25	45	39.9	90
Cote d'Ivoire	84	10.6	10	6	74	23.7	72
Kenya	92	15.2	12.7	3	52	43.4	33
Rwanda	94	19	7.5	1	82	62.5	86
Tanzania	49	13.7	18.6	5	83	51.9	25
Uganda	91	13.8	7.7	5	74	54.5	44
Zambia	96	27	13.9	6	61	38.9	60
Zimbabwe	93	29.7	30	3	78	23.9	25

The integration of HIV and obstetric care is essential to maximize patient adherence and ensure optimal outcome. The treatment plan including medication, route of delivery and follow up recommendations, must be delineated jointly during the antenatal care. The pediatrician should also be integrated into the care plan ahead of time so that neonatal considerations are not overlooked.

DEFINITIONS

- *Vertical transmission*

Process through which a HIV infected mother passes infection to the child.

- *Counselling*

This is the process which aims at providing the patient with information to enable her/him make an informed choice. It must be voluntary, confidential and must emphasize help available. Information must be sensitive to the patients needs. It aims to break the silence as well as destigmatize HIV/AIDs infection.

- *ELISA for HIV testing*

This is enzyme-linked immuno absorbent assay test that detects antibodies against HIV, which takes 1-3 months to develop after initial infection (window period).

STUDY OBJECTIVES

Broad Objective

To determine the knowledge, attitude and practice on perinatal HIV transmission and preventive measures among antenatal mothers at Kenyatta National Hospital.

Specific Objectives

1. To determine the proportion of antenatal mothers having correct knowledge on Perinatal HIV transmission.

2. To determine the proportion of antenatal mothers with correct knowledge, attitude and practice on preventive measures on Perinatal HIV transmission .

3. To compare the proportion of HIV positive and HIV negative antenatal mothers with correct knowledge, attitude and practice regarding preventive measures on Perinatal HIV transmission after voluntary counseling and testing.

RATIONALE

The studies done in Kenya and elsewhere show high awareness about HIV infection (26). 90% awareness on Perinatal HIV transmission has been shown with 70% awareness of Perinatal HIV transmission through breast-feeding (1).

This high awareness has not translated into decrease in Paediatric HIV infection from Perinatal HIV transmission (1). Despite this high awareness there seems to be low intervention measures during Perinatal periods to reduce Perinatal HIV transmission which could be influenced by attitudes and practices including cultural beliefs. It is with this in mind that the study was designed to determine the knowledge, attitude and practice of antenatal mothers regarding preventive measures on Perinatal HIV infection.

The awareness may be expected to be high but its correlation with attitudes and practices on preventive measures will be determined.

Excess Perinatal HIV transmission risk of 14% has been attributed to breast-feeding while caesarean section performed before rupture of membranes or the initiation of contractions in women with low or undetectable viral load reveal a baseline risk of transmission of 0% to 2%. Use of anti-retroviral drugs have demonstrated 50% reduction in vertical transmission rates. Other preventive measures that reduce HIV transmission have been documented including using of condom and avoidance of certain obstetric practices if the sero status of the mother is known.

The findings of the study will be used to design strategies of disseminating information in order to reduce Perinatal HIV transmission. This will increase child health and survival thus decreasing load on the health system. A healthy child is highly priced in a family and promotes quality of life to the mother.

STUDY DESIGN

This was a descriptive cross-sectional survey done from November 2002 to Jan.2003.

MATERIALS AND METHODS

Study Area

The study was done in the antenatal clinic at Kenyatta National Hospital. It is mainly a high-risk antenatal clinic although hospital staff members are also booked in this clinic. Kenyatta National Hospital is a teaching and referral hospital. Most of the patients seen in the Antenatal Clinic are from Nairobi and its surrounding i.e Thika, Kiambu. The antenatal clinics are conducted on Tuesdays, Wednesdays and Thursdays. During antenatal period, any antenatal morbidity is managed accordingly either as out patient or in patient.

Study Population

These were every third consenting pregnant women attending antenatal clinic in their first visit at Kenyatta National Hospital and had to meet all the eligibility criteria for the study. Booking is done every Monday. The criteria for booking include primigravida, grandmultipara, previous operative deliveries, medical conditions complicating pregnancy, bad obstetric history, those who have had delicate or difficult gynaecological operations like urinary fistula or myomectomy among other high risk factors. To avoid contamination of the mothers' knowledge through group counselling as they await to be seen, only the first early comers were recruited.

Inclusion Criteria

1. All pregnant women attending antenatal clinic in their first visit at Kenyatta National Hospital were considered for the study.

2. An informed consent was sought from each client and only those who agreed to participate in the study were included.

Exclusion Criteria

1. Pregnant women attending antenatal clinic not in their first visit were excluded.

2. Those women attending antenatal clinic for the first time but were too ill were not recruited.

3. All antenatal mothers who have been previously tested for HIV

4. All those clients who declined to give consent for participation were excluded.

Data Collection

A structured questionnaire containing open and closed ended questions on socio-demographic characteristics, reproductive history,knowledge on perinatal HIV transmission, knowledge, attitude and practice on preventive measures on perinatal HIV transmission was used. The study recognizes certain controversial areas on PMTCT like breastfeeding (especially exclusive breast feeding),STI's and condom use, however categorization of Correct KAP on PMTCT as defined in the results section is based on the general consensus discussed in the literature review. Also on the issue of practice, the survey measures what the clients would do given the different scenarios and not exactly what they had done .The questionnaire was filled by direct interview of each participant in a private room after she had been attended to and undergone all the clinic routines which included history taking, physical examination, antenatal profile

data and HIV voluntary counseling and testing. The HIV results were recorded as soon as they were available in the clinic. Kenyatta National Hospital now has routine antenatal voluntary counseling and testing for HIV and use of anti-retroviral drugs as a policy. All HIV positive clients are put either on zidovudine therapy if they are detected from 36 weeks or on nevirapine as a single dose at the onset of labour for those detected after 36 weeks. Usually after voluntary counselling, the antenatal mothers are sent to the lab where venous blood (5ml) is taken for ELISA test for HIV 1 and 2. The antenatal mothers are then given appointment to come for results and post test counseling.

The interviews were conducted with the help of three trained research assistants under the supervision of the principle investigator. The questionnaire were pretested at the antenatal clinic at New Nyanza Provincial Hospital in Kisumu by the principal investigator by requesting 20 antenatal mothers booking antenatal clinic to fill out the questionnaires. All ambiguous and inappropriate questions were corrected.

SAMPLING METHOD: Systemic Sampling - Every 3rd Client to be registered was selected. The first one selected by simple random sampling method.

SAMPLE SIZE

This was calculated using the formula:

$$n = \frac{Z^2PQ}{d^2}$$

Where

n = desired sample size

z = The standard normal deviate usually set at 1.96 which corresponds to 95% confidence interval.

Q = I - P

P = Prevalence of the condition = 15%

HIV prevalence among antenatal mothers in Nairobi = 15% (with KNH approximately 10%).

d = Degree of accuracy with which P is determined . It is set at 0.05.

The required sample size.

$$\frac{1.96 \times 1.96 \times 0.15 (1-0.35)}{0.05 \times 0.05}$$

= 219

Sample size of 220 will be used.

ETHICAL CONSIDERATIONS

1. Permission to carry out the study was sought through the department of obstetrics and gynaecology of the University of Nairobi from:-

    - The Ethical and Research Committee at Kenyatta National Hospital

2. Informed consent was sought from each woman and only those who consented were included in the study.

3. Participation in the study was voluntary and no inducements were offered.

4. The antenatal mothers who were ill were not recruited in the study.

5. The questionnaire did not contain the participants name or ethnicity and was not used to get back to or reprimand the participant.

6. Incorrect knowledge, attitude and practice on Perinatal HIV transmission and preventive measures was corrected.

7. The study did not interfere with service provision at the clinic and those found to be HIV positive got anti-retroviral drugs as per the hospital policy.

8. All the information obtained from the study was treated with utmost confidentiality and used only for the intended purpose.

RESULTS

A total of 220 antenatal clients were recruited and table 2-17 describes their socio-demographic characteristics, knowledge, attitude and practice on Perinatal HIV transmission and preventive measures as well as chi square tests of significance done at 95% confidence interval.

Table 2 Social -Demographic Characteristics Of Client Interviewed

	CHARACTERISTICS: N=220	NUMBER	PERCENTAGE
1	AGE (YEARS)		
	13-20	5	2.3
	21-28	140	63.6
	29-35	59	26.8
	>35	16	7.3
2.	RESIDENCE		
	Nairobi	188	85.5
	Outside Nairobi	32	14.5
3	MARITAL STATUS		
	Single	21	9.5
	Married	199	90.5
4.	RELIGION		
	Catholics	70	31.8
	Protestants	146	66.9
	Muslims	2	0.9
	Others	2	0.9
5.	EDUCATION LEVEL		
	Primary	34	15.5
	Secondary	91	41.4
	University/College	95	43.1
6.	OCCUPATION		
	Unemployment	56	25.5
	Domestic servant	17	7.7
	Business Lady	45	20.5
	Professional	99	45
	Other	3	1.3
7.	REPRODUCTIVE HISTORY		
	Viable pregnancies		
	0-2	204	92.7
	>2	3	7.3
	Abortions		
	0 - 2	217	98.6
	>2	3	1.4

Table2.This indicates that most of the clients interviewed were in the age group of 21-28yrs forming 63.6%of the study population followed by the group of 29-35 yrs forming 26.8% .Other characteristics can be summarized as follows;

Residence: Majority of the clients were from Nairobi forming 85.5%

Marital status: 90.5% were married

Religion: they were mostly Christians with 66.4% being Protestants.

Education Level: 84.5% had attained an education level of at least secondary level with 43.1% having gone to the university/college
Occupation: 25.5% were unemployed with 74.5% having some form of employment like domestic servant 7.7%, business 20.5%, professional 45%
Parity: 92% had history of 0-2viable pregnancies while 98% had 0-2 abortions

HIV Knowledge and Awareness: 99.5%(219) of clients had heard about HIV with only 0.5%(1) having not heard. Table 3.1 summarizes the results of the knowledge about what HIV is.

Table 3.1: comparison of knowledge on HIV and HIV serostatus

Variable	HIV Negative N = 195 No:	%	HIV Positive N = 25 No:	%
What HIV is				
• Don't know	1	0.01	1	4
• Killer disease	33	17	5	20
• Virus infection	94	48.4	7	28
• STI with no cure	53	27.3	7	28
• Acquired Human Immuno deficiency Syndrome	14	7.3	6	20

The knowledge that the HIV is a virus infection was 28% for HIV positive and 48.4% for HIV negative. In both cases those who did not know what HIV is was very low (0.01% for HIV negative, 4% for HIV positive). Comparison of correct and incorrect knowledge with HIV serostatus based on categorizing the correct knowledge to be killer disease, virus infection, STI with no cure, acquired human Immuno Deficiency Syndrome and incorrect knowledge to be not knowing what HIV is summarized in table 3.2 below.

Table 3.2: Comparison of correct and incorrect knowledge on HIV and serostatus

Knowledge on what HIV is	HIV posititve N=25	Percentage	HIV negative N=195	Percentage
Correct Knowledge	24	96	194	99.5
Incorrect knowledge	1	4	1	0.5
	25		195	

99.5% of HIV negative and 96% of HIV positive had correct knowledge about what HIV
Is and only 1% of HIV positive and 0.5% of HIV negative had incorrect knowledge.
From the Chi-square test of significance at 95% confidence interval

P value is 0.23.Therefore HIV serostatus has no significance on the type of knowledge regarding what HIV is. Table 4 summarizes the results on knowledge on HIV transmission

Table 4:Comparison of Knowledge on HIV transmission and HIV serostatus

VARIABLE	HIV negative N=195		HIV negative N=25	
Transmission of HIV infection	No:	%	No:	%
• Sex only	32	16.4	2	12
• Mother to child (birth, Breast-feeding transplacental) only	0	0	0	0
• Parentral (blood transfusion, needles, injuries) only	4	2	0	0
• Combination of the above	159	81.6	22	88
• Don't know	0	0	0	0

81.6% of HIV negative and 88% of HIV positive had correct knowledge on route of HIV transmission i.e. sex, mother to child, parentral (blood transfusion, needles, injuries) while 0% of both HIV positive and HIV negative did not know how HIV is transmitted

The main source of information (52%) on HIV knowledge and awareness was from a combination of media, medical staff, and friends/spouse. Media only was 30%(66), medical staff only 14%(31) and friends and spouse only 4%(9).

<u>Perinatal HIV transmission</u>

Knowledge on Perinatal HIV transmission

On knowledge on Perinatal HIV transmission "yes" response is categorized as correct knowledge about an HIV infected mother getting a baby with HIV infection and "no" as incorrect knowledge. Table 5 summarizes the comparison of HIV serostatus and the knowledge on HIV Perinatal transmission.

Table 5: Knowledge on perinatal HIV transmission and serostatus

Knowledge on Perinatal HIV transmission	HIV positive		HIV Negative	
	N=25	Percentage	N=195	Percentage
Correct Knowledge	25	100	170	87
Incorrect Knowledge	0	0	25	13

100% of HIV positive and 87% of HIV negative had correct knowledge on Perinatal HIV transmission. From the chi-square test of significance at 95 % confidence interval, the P value is 0.12 thus HIV serostatus has no significance on the type of knowledge.

By categorizing correct knowledge on having sexual intercourse with HIV positive partner having effect on mother to child HIV transmission as "Yes" and "No" as incorrect knowledge, table 6 below summarizes the results:

Table 6: effect of sexual intercourse with HIV positive on Perinatal HIV transmission:

Knowledge	HIV positive		HIV Negative	
	N=25	Percentage	N=195	Percentage
Correct Knowledge	19	76	148	76
Incorrect knowledge	6	24	47	24

76% of both HIV negative and HIV positive had correct knowledge with only 24% in both cases having incorrect knowledge. From Chi-square test of significance at 95% confidence interval, P value is 0.81 thus HIV serostatus has no significance on the type of knowledge.

On knowledge whether having other sexually transmitted infection (STI) affect mother to child HIV transmission (MTCT) "Yes" response is categorized as correct knowledge and "No" as incorrect knowledge Table 7 summarizes the comparison of HIV serostatus and the knowledge on STI and MTCT.

Table 7: knowledge on STI affecting MTCT

Knowledge on effect of STI on MTCT	HIV positive		HIV Negative	
	N = 25	Percentage	N = 195	Percentage
Correct Knowledge	13	52	125	64
Incorrect Knowledge	12	48	70	36

64% of HIV Negative and 52% of HIV Positive had correct knowledge on effect of STI's on MTCT. Using chi square test of significance, P-value is 0.34; thus HIV serostatus has no significance on type of knowledge regarding effect of STI on MTCT.

Prevention of Perinatal HIV transmission

Breast Feeding and Perinatal HIV Transmission:

On knowledge on effect of Breast Feeding and Perinatal HIV transmission, correct knowledge is categorized as "Increased transmission" and incorrect knowledge as "No effect", decreases transmission" and "Not Sure". On attitude on breast feeding, correct attitude is categorized as those who think that HIV mothers should not breast feed while incorrect attitude are those who think they should breast feed or are not sure .On practice on Breast feeding, correct practice is categorized as no breast feeding for HIV positive mothers while incorrect practice are those who will breast feed if HIV positive or are not sure. The cultural beliefs on breast-feeding and Perinatal HIV transmission were categorized as those that increases and decreases HIV transmission. Table 8 summarizes the results.

Table 8: Knowledge, attitude, practice and cultural beliefs on Breast feeding and Perinatal HIV transmission

Breast feeding variable	HIV Positive		HIV negative		P value
	N = 25	%	N = 195	%	
1. Type of knowledge					0.14
• Correct knowledge	18	72	162	86	
• Incorrect knowledge	7	28	28	14	
2. Type of attitude					0.99
• Correct attitude	22	88	167	86	
• Incorrect attitude	3	12	28	14	
3. Type of practice					0.75
• Correct practice	21	84	154	79	
• Incorrect practice	4	16	41	21	
4. Type of cultural belief					0.78
• Increases Perinatal HIV transmission	22	88	171	88	
• Decreases Perinatal HIV transmission	3	12	24	12	

86% and 72% of HIV negative had correct knowledge while incorrect knowledge was low in both cases i.e. 14% for HIV Negative and 28% for HIV Positive. The p value is 0.14 thus HIV serostatus has no significance on type of knowledge regarding effect of breast-feeding on Perinatal HIV transmission.

88% of HIV posititve and 86% of HIV Negative had correct attitude on Breast-feeding and only 12% of HIV positive and 14% of HIV Negative had incorrect

attitude. The P value is 0.99 thus the HIV serostatus has no significance on type of attitude regarding breast-feeding and Perinatal HIV transmission.

84% of HIV posititve and 79% of HIV negative had correct practice on breastfeeding while only 16% of HIV positive and 21% of HIV negative had incorrect practice. The P value is 0.75 thus HIV serostatus has no significance on the type of breast-feeding practice.

88% of both HIV positive and HIV Negative had cultural beliefs about breast-feeding that increases Perinatal HIV transmission while only 12% in both cases had cultural beliefs that decreases Perinatal HIV transmission. The P value is 0.78 thus HIV serostatus has no significance on type of cultural belief and Perinatal HIV transmission.

The sources of information on effect of Breast feeding and Perinatal HIV transmission is summarized in table 9.

Table 9: Sources Of Information On Effect Of Breastfeeding And HIV Transmission:

Information source	HIV Positive		HIV Negative	
	N = 25	%	N =195	%
Medical Staff Only	8	32	87	45
Media only	7	28	26	133
Spouse/friends only	0	0	6	3
Combination of the above	10	40	76	39

The main source of information for HIV positive (40%) was a combination of medical staff, media, spouse/friends followed by medical staff only (32%) while for HIV negative, the main source was medical staff only (45%) followed by a combination (39%) of medical staff, media, spouse/friends.

Antiretroviral Drugs And Perinatal HIV Transmission:

On knowledge on cure for HIV/AIDS, correct knowledge is categorized as no cure available while incorrect knowledge is availability of cure or not sure. On knowledge of availability of Antiretroviral (ARV) drugs that reduce Perinatal HIV transmission, correct knowledge is categorized as yes and incorrect knowledge is No/Not sure. On knowledge of the names of ARV drugs available that reduce Perinatal HIV transmission, correct knowledge is categorized as AZT/Nevirapine and incorrect knowledge as Kemron/herbs or don't know. On attitude on putting all HIV positive mothers on ARV, correct attitude is categorized as those who think that all HIV positive mothers should be put on ARV drugs while incorrect attitude is those who think they should not or are not

sure. On practice on taking ARV drugs by HIV positive mothers to reduce Perinatal HIV transmission, correct practice is categorized as those who would take the drugs if they tested HIV positive while incorrect practice are those who will not or are not sure. Table 10 summarizes the results.

Table 10: Knowledge, attitude and practice on antiretroviral (ARV) drugs and Perinatal HIV transmission.

ARV variable	HIV Positive		HIV negative		P value
	N = 25	%	N = 195	%	
Knowledge on availability of cure for HIV					0.76
• Correct knowledge	23	92	171	88	
• Incorrect knowledge	2	8	24	12	
2. Knowledge on availability of ARV drugs that reduce Perinatal HIV transmission					0.46
• Correct knowledge	17	68	150	77	
• Incorrect knowledge	8	32	45	23	
3. Knowledge on names of ARV drugs that reduce Perinatal HIV transmission					0.96
• Correct Knowledge	16	64	120	62	
• Incorrect knowledge	9	36	75	38	
4. Attitude on use of ARV to prevent Perinatal HIV transmission					0.32
• Correct Knowledge	18	72	161	83	
• Incorrect knowledge	7	28	34	17	
5. Practice on taking ARV drugs to reduce Perinatal HIV transmission					0.88
• Correct practice	21	84	166	85	
• Incorrect practice	4	16	29	15	

92% of HIV positive and 88% of HIV negative had correct knowledge while only 2% of HIV positive and 12% of HIV negative had incorrect knowledge on availability of cure for HIV. The P value is 0.76 thus HIV serostatus has no significance on type of knowledge regarding HIV cure.

68% of HIV posititve and 77% of HIV Negative had correct knowledge on availability of ARV drugs that reduces Perinatal HIV transmission. The P value is 0.46 thus there is no significance on the HIV serostatus and type of knowledge.

64% of HIV positive and 62% of HIV Negative had correct knowledge on the names of the ARV drugs that reduce Perinatal HIV transmission. The P value is 0.96 thus HIV serostatus has no significance on type of knowledge.

72% of HIV positive and 83% of HIV negative had correct attitude on use of ARV to prevent Perinatal HIV transmission. The P value is 0.32 thus HIV serostatus has no significance on type of Knowledge.

84% of HIV positive and85% of HIV negative had corrective practice as regards to use ARV drugs to prevent Perinatal HIV transmission. The P value is 0.88 thus HIV serostatus has no significance on type of practice.
The sources of information about ARV drugs is summarized in table 18

Table 11: Source of information about ARV drugs

Information source	HIV positive		HIV Negative	
	N = 25	%	N = 195	%
Medical Staff Only	12	48	127	65
Media Only	5	20	30	15
Spouse/friends only	0	0	6	4
Combination of the above	8	32	32	16

The main source of information about ARV drugs is the medical staff only for both HIV positive (48%) and HIV negative (65%), this is followed by a combination of medical staff, media, spouse/friend in both cases i.e. 32% for HIV positive and 16% for HIV negative.

Caeserian Section And Perinatal HIV Transmission:
On knowledge on role of caeserian section in preventing Perinatal HIV transmission, correct knowledge is categorized as yes and incorrect knowledge is NO/Not sure. On attitude of offering HIV positive mothers the option of elective caeserian section, correct attitude is categorized as yes and incorrect attitude is No/not sure .On practice on the option of elective caeserian section to HIV positive mothers, Yes response is categorized as correct practice while No/not sure as incorrect practice Table 12 summarizes the results.

Table 12: Caeserian Section and Perinatal HIV transmission

Caeserian section Variable	HIV Positive		HIV negative		P value
	N = 25	%	N = 195	%	
1. Knowledge on role of caeserian section in prevention of Perinatal HIV transmission					0.3
• Correct knowledge	7	28	80	41	
• Incorrect knowledge	18	72	115	59	
2. Attitude on offering elective caeserian section to HIV positive mothers					0.3
• Correct attitude	9	36	95	49	
• Incorrect attitude	16	64	100	51	
3. Practice on elective caeserian section to HIV positive mothers					0.045
• Correct practice	9	36	113	58	
• Incorrect practice	16	64	82	42	

72% of HIV positive and 59% of HIV Negative had incorrect knowledge on role of caeserian section in prevention of Perinatal HIV transmission using .The P value is 0.3 thus HIV serostatus has no significance on type of knowledge.

64% of HIV positive and 51% of HIV Negative had incorrect attitude on the option of offering elective caeserian section to HIV positive mother to prevent Perinatal HIV transmission. The P value is 0.3 thus HIV serostatus has no significance on type of attitude

Only 36% of HIV positive and 58% of HIV negative had correct practice. The P value is 0.045 thus HIV serostatus has significance on type of practice regarding the option of elective caeserian section on prevention of Perinatal HIV transmission.
Table 13 summarizes the sources of information on elective caeserian section.

Table 13: Source of information about elective Caeserian Section.

Information source	HIV positive		HIV Negative	
	N = 25	%	N = 195	%
Medical Staff Only	17	68	115	58
Media Only	3	12	21	11
Spouse/friends only	0	0	13	7
Combination of the above	5	20	46	24

The main source of information on elective caeserian Section for both HIV positive (68%) and HIV Negative (58%) is the medical staff only.

Other Preventive measures (use of Condoms, Obstetric practices, Sexually Transmitted Infections treatment, Voluntary Counseling and Testing) and Perinatal HIV transmission.

Use Of Condoms:

On knowledge on use of condoms in prevention of Perinatal HIV transmission yes is categorized as correct knowledge and No/Not sure as incorrect knowledge. Correct attitude are those who think that all pregnant women whose spouse test HIV positive should use condoms while incorrect attitude are those who do not think so. Correct practice is categorized as those who will encourage spouse to use condoms if they tested positive while incorrect practice are those who will not. Table 23 summarizes the results of condom use and Perinatal HIV transmission.

Table 14: Condoms use and Perinatal HIV transmission

Use of condoms	HIV Positive		HIV Negative		P valu
	N = 25	%	*N = 195*	%	
1.Type of knowledge					0.52
• Correct Knowledge	17	68	115	59	
• Incorrect knowledge	8	32	8	41	
2. Type of attitude					0.64
• Correct	20	80	143	73	
• Incorrect	5	20	5	27	
3. Type of Practice					0.51
• Correct	21	84	148	76	
• Incorrect	4	16	47	24	

68% of HIV positive and 59% of HIV negative had correct knowledge. P value is 0.52 thus HIV serostatus has no significance on type of knowledge.

80% of HIV positive and 73% of HIV Negative had correct attitude. The P value is 0.64 thus HIV serostatus has no significance on type of attitude.

84% of HIV positive and 76% for HIV negative had correct practice. The p value is 0.51 thus HIV serostatus has no significance on type of practice.

The source of information on role of condoms in preventing Perinatal HIV transmission is summarized in table 15:

Table 15: Source of information on condoms

Information source	HIV positive		HIV Negative	
	N = 25	%	N = 195	%
Medical Staff Only	10	40	75	39
Media Only	9	36	52	27
Spouse/friends only	0	0	12	5
Combination of the above	6	24	56	29

The main source of information on role of condoms in preventing Perinatal HIV transmission is the medical staff for both HIV posititve (40%) and HIV Negative (39%)

Obstetric practices, sexually transmitted infections and prevention of Perinatal HIV transmission;

On Episiotomies and prevention of Perinatal HIV transmission, correct knowledge is that it does not prevent while incorrect knowledge is that it prevents. For repeated vaginal examinations, correct knowledge is no, while incorrect knowledge is yes. For early rupture of membranes, correct knowledge is no, while incorrect knowledge is yes. On sexually transmitted infections and prevention of Perinatal HIV transmission, correct knowledge on multiple sexual intercourse during pregnancy is No while incorrect knowledge is yes. Correct knowledge on avoiding sex when having vaginal discharge is yes while incorrect knowledge is No. Correct knowledge on early treatment of vaginal discharge is yes while incorrect knowledge is No. Table 25 summarizes the results.

Table16: Knowledge on obstetric practices, and sexually transmitted infection and Perinatal HIV transmission.

1. Obstetric practice and type of knowledge	HIV positive		HIV negative		P value
	N = 25	%	N = 195	%	
(a) Episiotomies					0.71
• Correct knowledge	14	56	121	62	
• Incorrect knowledge	11	44	74	38	
(b) Repeated vaginal examinations					0.88
• Correct knowledge	13	52	100	51	
• Incorrect knowledge	12	48	95	49	
c) Early rupture of membranes					0.066
• Correct knowledge	20	80	110	56	
• Incorrect knowledge	5	20	85	44	
2. Knowledge on Sexual transmitted Infections					
(a) Multiple sexual intercourse during pregnancy					0.04
• Correct knowledge	23	92	142	73	
• Incorrect knowledge	2	8	53	27	
(b) Avoiding sex when having vaginal discharge					0.57
• Correct knowledge	19	76	133	68	
• Incorrect knowledge	6	24	68	32	
(c) Early treatment of vaginal discharge					0.47
• Correct Knowledge	20	80	138	71	
• Incorrect knowledge	5	20	57	29	

56% of HIV positive and 62% of HIV negative had correct knowledge on episiotomies. The P value is 0.71 thus HIV serostatus has no significance on type of knowledge.
52% of HIV positive and 51% of HIV negative had correct knowledge on repeated vaginal examinations. The P value is 0.88 thus HIV serostatus had no significance on type of knowledge.
80% of HIV positive and 56% of HIV negative ad correct knowledge on early rupture of membranes. The P value is 0.04 thus serostatus has significance on the type of knowledge.
92% of HIV positive and 73% of HIV negative had correct knowledge on multiple sexual intercourse during pregnancy. The P value is 0.066 thus HIV serostatus has no significance on the type of knowledge.
76% of HIV positive and 68% of HIV negative had correct knowledge on avoiding sex when having vaginal discharge. The P value is 0.57 thus HIV serostatus has no significance on type of knowledge.
80% of HIV positive and 71% of HIV negative had correct knowledge on early treatment of vaginal discharge. The P value is 0.47 thus HIV serostatus has no significance on the type of knowledge.

Voluntary Counseling and Testing (VCT) and Prevention of Perinatal HIV Transmission:

The correct attitude on testing all pregnant mothers is Yes while incorrect is No. The correct attitude on all mothers disclosing HIV status to health workers and spouse is Yes whole incorrect attitude is No. Correct practice for the mothers who test HIV positive is to inform health care providers, spouse and encourage spouse to be tested. Incorrect practice is to do otherwise. Table 26 summarizes the results.

Table 17: VCT and Perinatal HIV transmission

VCT attitude and practice	HIV Positive		HIV negative		P value
	N=25	%	N=195	%	
1. Attitude on testing all pregnant mothers					0.16
• Correct attitude	22	88	188	96	
• Incorrect attitude	3	12	7	4	
2. Attitude on all mothers disclosing HIV status to:					
(a) Health workers					0.46
• Correct attitude	19	76	164	84	
• Incorrect attitude	6	24	31	16	
(b) Spouse					0.57
• Correct attitude	24	96	176	90	
• Incorrect attitude	1	4	19	10	
3. Practice would inform health care providers if they tested HIV positive					0.67
• Correct practice	24	96	178	91	
• Incorrect practice	1	4	17	9	
4. Practice- would inform spouse if they tests HIV positive					0.98
• Correct practice	24	96	183	94	
• Incorrect practice	1	4	12	6	
5. Practice - would encourage spouse to be tested if they tests HIV positive					
• Correct practice	24	96	192	98	0.94
• Incorrect practice	1	4	3	2	

88% of HIV positive and 96% of HIV negative had correct attitude on testing all pregnant mother. The P value is 0.16 thus serostatus has no significance on the type of attitude.

76% of HIV positive and 84% of HIV negative had correct attitude on all mothers disclosing HIV serostatus to Health workers while 96% of HIV positive and 90% of HIV negative had correct attitude for disclosure to spouse. The P value for the former is 0.46 while for the latter is 0.57 thus HIV serostatus in both cases has no significance on the type of attitude.

96% of HIV positive and 91% of HIV negative had correct practices of informing the health provider if they tested HIV positive while 96% of HIV positive and 94% of HIV negative had correct practice of informing the spouse. The p value for the former is 0.67 while for the latter is 0.98 thus HIV serostatus in both cases has no significance on the type of attitude.

96% of HIV positive and 98% of HIV negative had correct practice as regards to encouraging spouse to be tested if they tested HIV positive. P value is 0.94 thus HIV serostatus has no significance on type of practice.

DISCUSSION

In Kenya, 10% of reported AIDS case in children are under 5 years of age and over 90% of HIV infection in children is due to perinatal HIV transmission. It is estimated in Kenya that 100,000 infants are infected with HIV-1 annually due to perinatal transmission. This can occur in utero, during labour and delivery and through breast-feeding which is a common cultural practice. There is high awareness on Perinatal HIV transmission but this has not translated to decrease in pediatric HIV infection from perinatal transmission possibly due to diverse socio-cultural factors influencing attitude and practice on preventive measures. The current estimated HIV prevalence is 10.2% and mother to child transmission is of growing importance because of high infection rates among young women. In this study, 25 antenatal mothers were HIV positive and 195 were HIV negative giving an HIV prevalence of 11.4% which is within the range of Nairobi region (10-20%) but slightly lower than the finding in a recent study done in the same set up(27) which showed a prevalence of 12%.

The study population was a relatively low risk, with 90.5% in stable marriages and about 84.5% had education level of secondary and above. 73.2% had some form of employment ranging from domestic servants, business to professional .85.5% were residents of Nairobi and were mostly Christians with 66.4% being protestants. They are mostly young people with the age group of 21-28years forming 63.6%.

In this study, 99.4% of the clients were aware of HIV/AIDS. 99.5% of HIV negative and 96% of HIV positive had correct knowledge about what HIV is with 81.6% of HIV negative and 88% of HIV positive having correct knowledge on routes of HIV transmission. However HIV serostatus had no significance on the type of knowledge regarding route of transmission with P value = 0.23. The Kenya demographic and Health survey (KDHS) of 1998 reported also this high level of awareness (99% of men and 95.5% of women with the sexual route known to 96% of men and 95% of women). A recent study done in the same clinic also showed high awareness of 90.3%(27). The main source of information on HIV knowledge and awareness was a combination of media, medical staff, friends and spouse contributing to 52% while medical staff only was 14%. The many ways of channeling information, education and communication (IEC) on HIV/AIDS the country has adopted seems to have yielded a positive result on HIV awareness/knowledge. Knowledge on Perinatal HIV transmission was also high with 100% of HIV positive and 87% of HIV negative having correct knowledge on the transmission through the sexual route, 76% of both HIV positive and HIV negative had correct knowledge on effect of sexual intercourse with HIV positive partner on Perinatal HIV transmission while 52% of HIV positive and 64% of HIV negative had correct knowledge on STI effects on MTCT of HIV. In all the instances HIV serostatus had no significance on the type of knowledge with p value being 0.12, 0.81 and 0.34 respectively. The knowledge on Perinatal HIV transmission is higher than

that of a recent study in the same clinic (27) which found it to be 72.8% while Amoth found 90% awareness at Aghakan Hospital recently. These reflect probably the impact of health education talks clients receive.

On effect of breast feeding and Perinatal HIV transmission, 72% of HIV positive and 86% of HIV negative had correct knowledge,88%of HIV Positive and 86% of HIV Negative had correct attitude, 84% of HIV positive and 79% of HIV negative had correct practice but in all cases, the HIV serostatus had no significance on type of knowledge, attitude and practice with p values being 0.14, 0.99, 0.75 respectively. Amoth had almost similar findings at Aghakan hospital in Nairobi with 75% of HIV positive and 73.6% of HIV negative having correct knowledge on HIV Perinatal transmission through breastfeeding. Recent study in the same set up(27) also had similar findings with correct knowledge of the study population being 74.9%. Despite the good knowledge, attitude and practice on breastfeeding, the most significant findings of this study was that cultural practices and beliefs increases Perinatal HIV transmission with up to 88% in both HIV positive and negative clients. It is therefore not surprising that a recent survey on the update of PMTCT intervention on pilot project in Africa (UNICEF/UNAIDS PMTCT pilot projects) done by UNICEF found that only 33% of HIV positive would accept replacement feeding in Kenya (Botswana - 90%, cote d'ivore - 72%, Rwanda - 86%, Tanzania 25%, Uganda - 44%, Zambia - 60% Zimbabwe 25%). Since breastfeeding contributes to 30-50% of Perinatal HIV transmission, more health education needs to target the cultural practices and beliefs regarding breastfeeding so that more mothers can accept replacement feeding in order to reduce Perinatal HIV transmission. The campaigns can be done through combination of channels, which seems to be the main source of information i.e. medical staff, media, spouse/friends. The spouse should be involved in the antenatal care clinics and be part of the decisions made so as to make it easy for the mothers to accept replacement feeding.

On ARV drugs and Perinatal HIV transmission, 68% of HIV positive and 77% of HIV negative had correct knowledge, 72% of HIV positive and 83% of HIV negative had correct attitude while 84% of HIV positive and 85% of HIV negative had correct practice. HIV serostatus had no significance on type of knowledge; attitude and practice. The p value was 0.46,0.32 and 0.88 respectively. These findings were higher than a recent finding (27) in the same clinic (47.3% awareness) and also what Amoth found at Aghakan hospital in Nairobi (25% of HIV positive and 28.7% of HIV negative had correct knowledge). UNICEF found low acceptance rate of ARV drugs intervention on their PMTCT pilot sites in Kenya with only 43.4% of HIV positive accepting ARV drugs.
The main source of information was identified as medical staff. The intensified health education on use of ARV drugs may be attributed to this improvement.The short course ARV drugs(AZT and Nevirapine) are available in this clinic and are known to reduce Perinatal HIV transmission with up to 50% in non-breastfeeding and 38% in breastfeeding(for AZT) while Nevirapine given as a single dose at the onset of labour and 2mg/kg single dose in the first 72hours to the infant reduces Perinatal HIV transmission by 46%. These campaigns and health education must be promoted and wholly incorporated in the antenatal care and the intervention scaled up through out the republic of Kenya. A further research is necessary into the issue of MTCT plus as currently

recommended by WHO as the way forward on the wholistic care of the HIV positve mothers with incorperation of HAART-Highly Active Anti Retroviral therapy.

On caeserian section and Perinatal HIV transmission, only 28% of HIV positive and 80% of HIV negative had correct knowledge, only 36% of HIV positive and 95% of HIV negative had correct attitude. However p value in both case was 0.3% thus HIV serostatus had no significance on type of knowledge and attitude. 36% of HIV positive and 58% of HIV negative had correct practice thus p value was 0.045. This means HIV serostatus has significance on type of practice. Amoth found recently at Aghakan hospital in Nairobi that 25% of HIV positive and only 15.6% of HIV negative had correct knowledge. The main source of information was medical staff. Since elective caeserian section reduce Perinatal HIV transmission by up to 43%, the medical staff needs to be sensitized more on its importance so that the clients can be informed accordingly. Where facilities permit, it should be offered whenever the patients choose the option

On other preventive measures (use of condoms, obstetric practices, sexually transmitted infections treatment, voluntary counseling and testing) and Perinatal HIV transmission; 68% of HIV positive and 59% of HIV negative had correct knowledge on use of condoms, 80% of HIV positive and 73% of HIV negative had correct attitude while 84% of HIV positive and 76% of HIV negative had correct practice. P value was 0.52,0.64,0.51 respectively thus HIV serostatus had no significance on type of knowledge, attitude and practice. These findings are higher that what Kamau found recently (60% correct knowledge on use of condoms) in the same clinic and may be a reflection on improvement on Health education at the clinic since the main source of information was found to be the medical staff. Correct knowledge on safe obstetric practices to prevent Perinatal HIV transmission was as follows: on episiotomies-56% of HIV positive and 62% of HIV negative, on repeated vaginal examination- 52% of HIV positive and 51% of HIV negative ,on early rupture of membranes - 80% of HIV positive and 56% of HIV negative. In all the cases, the HIV serostatus had no significance on the type of knowledge with p value being 0.71,0.88,0.066 respectively. The knowledge on sexually transmitted infection and Perinatal HIV transmission was 83% correct knowledge for HIV positive and 71% for HIV negative. On voluntary counseling and Testing (VCT), 88% of HIV positive and 96% of HIV negative had correct attitude on testing all pregnant mothers, 76% of HIV positive and 84% of HIV negative had correct attitude on disclosure of HIV serostatus to health workers while 96% of HIV positive and 90% of HIV negative had correct attitude on disclosure of HIV serostatus to spouse. HIV serostatus had no significance on type of attitude in all the cases with p value being 0.16, 0.46,0.57 respectively. Correct practice of informing the health care provider if they tested positive was 96% for HIV positive and 91% for HIV negative, for informing spouse - 96% of HIV positive and 94% of HIV negative. The correct practice for encouraging spouse to be tested also was 96% of HIV positive and 98% of HIV negative. HIV serostatus had no significance on type of practice in all the cases with p values being 0.67, 0.98, and 0.94 respectively. The good response on the correct attitude on VCT was also recently found by an investigator in the same setting - 94.5%. Amoth also

found similar good attitude and practice at Aghakan hospital in Nairobi after good counseling. An earlier report by UNICEF on the UNICEF/UNAIDS PMTCT pilot projects in Africa showed low HIV testing uptake in Kenya of only 52% while other sites were as follows: Burundi 72%, Botswana 45%, Cote d'Ivoire 74%, Rwanda 82%, Tanzania 83%, Uganda 74%, Zambia 61% and Zimbabwe 78%. The improvement noticed on the VCT may be the impact on the good counseling being offered in the clinic. HIV testing must be encouraged and incorporated in the antenatal care to allow any meaningful interventions to be adopted.

CONCLUSIONS FROM THE STUDY:

1. The correct knowledge on Perinatal HIV transmission is high(93.4%)
2. The correct knowledge, attitude and practice on prevention of Perinatal HIV transmission is high except for caeserian section.
3. The cultural beliefs and practices on breastfeeding encourages Perinatal HIV transmission.
4. HIV serostatus has no significance on type of knowledge, attitude and practice regarding prevention of Perinatal HIV transmission.

RECOMMENDATIONS:

It is thus recommended that:

- HIV voluntary Counseling and testing be incorporated in the routine antenatal profile
- A vigorous Health education campaigns on breast-feeding substitutes to all mothers who are HIV posititve. More research needs to be done on these cultural beliefs and practices that increase Perinatal HIV transmission with a view to come up with a permanent solution. Alternatives like heat treatment of expressed breast milk to get rid of HIV virus can be encouraged. Encouraging couple decision making is also important
- To continue promoting and increasing correct knowledge, attitude and practices on other preventive measures for Perinatal HIV transmission .For the HIV positive, the benefits must be stressed especially for ARV drugs, elective caeserian section and breast-feeding substitute.
- Continuous medical Education to Health workers on prevention of

mother to child HIV transmission is necessary including safe obstetric practices,

- Scaling up of PMTCT of HIV interventions to cover the whole country
- Research on the current issue of MTCT plus

REFERENCES

1. Amoth P.O. knowledge, attitude and practice of antenatal mothers towards antenatal HIV testing and perinatal HIV transmission at Aga Khan Hospital in Nairobi, MMed thesis 2000,University of Nairobi,Kenya.

2. Piot P, Plummer FA, Mhal FS et al: Aids An International Perspective - Science, 1998, 239; 573- 579.

3. Ministry of Health And Kenya Obstetrical And Gynaecological Society: Clinic guidelines for the management of HIV infected pregnant women and prevention of mother to child transmission of HIV in Kenya February 2001.

4. Women and HIV: The continuing challenge; 2000 HIV / AIDS treatment updates-2000 medscape internet search.

5. AIDS Epidemic update, December 1998. Joint United Nations Programme on HIV/AIDS (UNAIDS).

6. UNAIDS epidemiological fact sheet - Kenya June 1998: 2-12.

7. Ministry of Health: Sessional paper No. 4-1997-AIDS in Kenya.

8. Www.Pedaids. Org-Perinatal and postnatal transmission of HIV infection: A fact sheet - February 1999.

9. Thiry L, Sprenchers, Jonckeherrt. Isolation of AIDS virus from cell free breast milk of three healthy virus carriers. Lancet 1995; 11:891-2

10. Cutting Wa - Breast feeding and HIV. A balance of risks. J. Trop. Paediatric 1994; 40(1): 6-11.

11. Datt P. Embree Je, Kreiss J. K et al: Mother to Child transmission of HIV-1 Report from the Nairobi Study. J infect. Dis 1994, 70(5) 1134-40.

12. Nduati Rw, John G, Kreiss J. Postnatal transmission of HIV I though pooled breast milk. Lancet 1994; 334: 1432.

13. Geneva, 1 February 1999 - early data from mother -to-child HIV Transmission study in Africa finds shortest effective regimen ever.

14. CDC (Center for Disease Control and Preventions): Administration of Zidovudine during late pregnancy and delivery to prevent prenatal HIV transmission-Thailand, 1996-1998. JAMA 1998 April 8: 279 (14): 1061-2.

15. Lancet 1992:339: 1007 - 12- European Collaborative Study - RISK factors for mother to child transmission of HIV I

16. Grosskurth H, Mosha F, Toddj, Kiokke J et al: Impact of improved treatment of sexually transmitted disease on HIV infection in rural Tanzania. Randomized controlled Trial. Lancet 1995; 346: 530-35.

17. Kiarie S K Acceptability of perinatal screening. M.Med thesis, University of Nairobi 1996.

18. Geodert JJ, Duliege AM, Amos CI et al International register of HIV exposed twins. High risk of infection with HIV-I for first born vaginally delivered twins. Acq. Det. Sund. Hum. Tetroviral 1996 7(3): 320-27.

19. 2000 Compendium of selected publications by the American college of obstetricians and gynaecologists.

20. Welles SL, Pitt J, Colgrover, et al: HIV-I gennotypic Zidovudine drug resistance and the risk of maternal-infant transmission in the woman and infants transmission study. THE women and infants transmissions study group. AIDS 2000; 14:263-271.

21. Jackson JB, Mracna M, Gany L et al. Selection of nevirapine resistant mutations in Uganda women and infants receiving NVP prophylaxis to prevent HIV-I vertical transmission (HIVNET 012). Program and abstracts of the XIII International AIDS Conference, July 9-14 2000; Durban, South Africa. Abstract Lbor13.

22. Nelson, Ilaren: Pediatric HIV

23. Nduati R, John G, Mbori-Ngacha et al. Impact of breast feeding on maternal mortality among HIV-I infected women; results of a randomized clinical trials. Program and abstracts of the XIII International Aids Conference; July 9-14 2002; Durban, South Africa -Abstract We- or C495.

24. Countsoudia A, Pillayk, Spoonere, Kuhni, Coovadia HM, Influence of infant -feeding patterns on early mother to child transmission of HIV-1 in Durban, South Africa; A prospective cohort study. South Africa vitamin A study group. Lancet 1999. 254:471-476.

25. Mati J K G et al
Reproductive events, concraceptives use and HIV infection among women, users of family planning in Nairobi.
International Conference on Aids 1991:319

26. Ministry of Health: Sessional Paper No. 4: 1997, AIDS in Kenya.

27. Kamau Damaris- - knowledge, attitude, practice and behaviour towards HIV/AIDs, HIV screening and AZT therapy among pregnant women attending antenatal clinic at Kenyatta National Hospital, MMed thesis,University of Nairobi, 2001.

28. A safemotherhood initiative-March 2002;Essential obstetric care manual for health service providers in Kenya.

29. Jean R. Anderson,MD; A guide to the clinical care of women with HIV-2001 edition,US department of health and human sciences,health resources and sciences administration-HIV/AIDS bureau

GYNECOLOGY CASE NO 1

GESTATIONAL TROPHOBLASTIC DISEASE - CHEMOTHERAPY

Name:	A.N.	Age:	22 years
Ward:	1B	IP no.:	0819137
D.O.A.:	3.8.02		

PRESENTING COMPLAIN
She came with complains of vaginal bleeding for 4 days

HISTORY OF PRESENTING COMPLAIN
She was well until six weeks ago when she was admitted in ward 1D with incomplete septic abortion. Manual vacuum aspiration was done and she was discharged on antibiotics.

Four days prior to admission, she started having vaginal bleeding. This was heavy and in clots and was associated with lower abdominal pains. She was also weak and unable to walk. There was associated backache.

OBSTETRIC AND GYNAECOLOGICAL HISTORY
She is now a para 0+1 who had a spontaneous abortion at 11 weeks gestation and was managed as mentioned above. Menarche was at 16 years, her cycles are regular lasting 3 days and coming after 28 days.

She has not used any method of contraception.

PAST MEDICAL HISTORY
Apart from that mentioned above there was no significant past medical history. She had no drug allergies.

FAMILY AND SOCIAL HISTORY
She is a single lady who stays with her sister in Kibera. She is an unemployed form four school leaver.

She does not smoke or drink. There is no family history of chronic illness.

EXAMINATION ON ADMISSION
She was sick looking, clinically afebrile, not jaundiced. She was pale with a blood pressure of 90/50 mmHg, pulse was 102/min weak and of low volume.

ABDOMINAL EXAMINATION
The abdomen was soft with supra pubic tenderness. There was a pelvic mass corresponding to 14 weeks.
Other systems were essentially normal

VAGINAL EXAMINATION

There was bleeding from the introitus with normal external genitalia. Cervical os was closed with an anterior vaginal wall mass which was bleeding slightly. The cervix was normal with a uterus of 14 weeks gestation. The os was closed with no products of conception felt. Adnexa was free and normal. .

DIAGNOSIS

An impression of gestational trophoblastic disease was made.

She was started on intravenous fluids, blood taken for grouping and cross matching. PCV was taken and was found to be 14. She was transfused 3 units of blood.

INVESTIGATIONS DONE

- Pelvic scan: - this showed an enlarged uterus with uniform echogenicity
  with no products of conception seen
  - enlarged ovaries with multiple cysts
- B-HCG 10,110miu/ml
- Urea and electrolytes: Na+ -137 mmol/l
  K+ -4.8mmol/l
  Urea -3.5mmol/l
- Haemoglobin: 7.4g/dl
- Liver function test: normal
- Chest x-ray: no abnormalities detected

MANAGEMENT

She was transfused two pints of blood. Repeat haemoglobin was 10.2g/dl. She was scored as high risk malignant gestational trophoblastic disease and was for triple agent chemotherapy.

TREATMENT

She was started on triple therapy. She received methotrexate 50mg, actinomycin D 0.5mg and cyclophasphomide 500mg for 5 days from 31/8/02.

Repeat B-HCG levels on 9/9/02 was 3,314 iu/l

FOLLOW UP

She was for chemotherapy every alternative week until negative levels of ▫HCG were found, then for 3 more courses of chemotherapy.

She was for follow up with B-HCG level until one year and effective contraception.

DISCUSSION

A.N. presented above had malignant GTD (most likely choriocarcinoma) following an abortion.She was started on chemotherapy. Choriocarcinoma is part of a spectrum of neoplasms referred to as gestational trophoblastic disease. The others are hydatidiform mole and invasive mole (1). Gestational trophoblastic disease is one of the rare tumours that can be cured even in the presence of wide spread metastasis. Incidence of choriocarcinoma is rare accounting for 2-5% of all gestational trophoblastic disease (GTD) and occurring in 1 in 40,000 pregnancies (2).

In about ½ of all cases of choriocarcinoma, the antecedent event is molar pregnancy ¼ following term pregnancy and the remainder following abortion (2).

GTD arise from fetal tissue and are associated with 46xx karyotypes, trisomic and triploid chromosomes which are paternal in origin. GTD are associated with low socio-economic status, poor nutrition including dietary deficiencies of folic acid, protein and carotene deficiency. Age is a risk factor with increased risk with age 40 and above (3). There is also a link between blood group and GTD with group A mothers impregnated by O men having a 10 x risk than group A mothers with group A men (3).Choriocarcinoma is a pure epithelial tumour composed of syncytiotrophoblastic and cytotrophoblastic cells (2).
Patients with Choriocarcinoma normally present with irregular vaginal bleeding following termination of a pregnancy (1). They also have subinvolution or asymetricaly enlarged uterus (1). If infection occurs, they may have vaginal discharge. Choriocarcinoma has a tendency of metastasis which occurs in 4% (1). The common sites of metastasis are the lung (80%), vagina (30%), pelvis (20%), liver (10%) and brain (10%).The patient presented had vaginal bleeds and uterine enlargement thus followed abortion at 11 weeks.
Signs and symptoms may rise from metastasis. Staging of choriocarcinoma is based on anatomic and prognostic factor:

The FIGO staging (5).

Stage 1:	Disease confined to the uterus
1a:	Disease confined to the uterus with no risk factor
1b:	Disease confined to the uterus with one risk factor
1c:	Disease confined to the uterus with two risk factors
Stage II:	GTD extending outside the uterus but limited to the genital structures
	(adenexa, vagina, broad ligament)
IIa:	with no risk factor
IIb:	with one risk factor
IIc:	with two risk factors
Stage III:	GTD extending to lungs with or without known genital involvment
IIIa:	with no risk factor
IIIb:	with on risk factor
IIIc:	with two risk factors

Stage IV: All other metastatic sites
IVa: with no risk factor
IVb: with one risk factor
IVc: with two risk factors

Risk factors affecting staging include
1) Human chorionic gonadotrophin > 100,000 miu/ml
2) Duration of disease longer than 6 months from termination of antecedent pregnancy

In addition to staging, World Health Organization has developed a prognostic staging system which reliably predicts drug resistance. Scores of less than 4 are low risk, 5-7 middle risk >7 high risk. High risk should have intensive chemotherapy-MAC regime or EMA-Co in resistant cases.
The National institute of Health (NIH) has also developed a classification of GTD with prognostic bearing(commonly used in the United States)

NIH classification
I Benign GTD
A Complete Hydatidform Mole
B Partial Hydatidform Mole
II Malignant GTD
A Nonmetastatic GTD
B Metastatic GTD
1 Good prognosis, low risk-absence of any risk factor
2 Poor prognosis, high risk-presence of any risk factor
The risk factors are(presence of any one of the following)
a) Duration >4months
b) Pretherapy level of B-hcg in serum >40,000mlU/ml
c) Brain or liver metastases
d) GTD after term gestation
e) Prior failed therapy

WHO Scoring system based on prognostic factors

	S C O R E			
	0	1	2	4
Age (years)	< 39	> 39	-	-
Antecedent pregnancy	H mole	Abortion	Term	-
Interval between end of pregnancy And start of chemotherapy-months	< 4	4-6	7-12	>12
B-HCG levels (IU/L)	$<10^3$	10^3-10^4	10^4-10^5	$>10^5$
ABO group	-	O or A	B or AB	-
Largest tumour including Uterus (cm)	-	3-5	> 5	-
Site of metastasis	-	Spleen,Kidney	GIT,Liver	Brain
No. of metastasis	-	1-4	4-8	>8

Prior chemotherapy (Number of drugs)	-	-	1	>1 drug

Initial evaluation of a patient with GTD involves full examination and history, measurement of ▫HCG levels, chest x-ray, pelvic scan, hepatic and renal function tests and full blood count (1).

Management of GTD is based on whether it is high risk or low risk. Initial management of low risk involves single agent chemotherapy with or without hysterectomy depending on if the patient wishes to preserve fertility.
Initial drugs used is methotrexate plus folinic acid or actinomycin D. High risk patients are treated with methotrexate, actinomycin D and cyclophsophamide. Other regimes used include EMA-Co (etoposide, methotrexate, actinomycin D, cyclophosphamide and vincristine). Dosage of the drugs are as follows
Single regimen in low risk; Methotrixate 1-1.5mg/kg IV/IM Days 1,3,5,7.. Folinic acid 0.1-0.15mg/Kg IM days 2,4,6,8. Treatment is weekly.
MAC regime for high risk ; Methotrixate and Folinic acid as above. Actinomycin D 12ug/kg(usually 0.5mg) IV days 1 to 5 .Cyclophosphamide 3mg/kg IV days 1-5. Treatment is 2weekly
EMA-CO regime for high risk
Day 1 Etoposide 100mg/m2 in 200ml saline water over 30 min, Methotrixate 100mg/m2 followed by 200mg/m2 IV infusion over 12 hours, ActinomycinD 0.5mg IV bolus
Day 2 Etoposide as above + Folinic Acid IM 15mg BD for 4 doses-24 hours after starting MTX +Actinomycin D 0.5mg IV bolus
Day 8 Cyclophosphamide 600mg/m2 IV in Saline, Oncovin(Vincristine)-1mg/m2 IVStart.. The course repeated every 1-2 weeks
In all the regimes, the treatment course should not be repeated if WBC <3000,Platelet <100,000, significant elevation of BUN,SGPT

Follow up of patients as recommended by the American College of Obstetric and Gynecology in 2000 is as follows; Choriocarcinoma-After remission has been achieved , 2 weekly B HCG monitor for 3 months, then 1 monthly B-HCG for 1 year and 6monthly B-HCG surveillance for life OR B-HCG titre every 2months for additional one year. Oral contraceptive taken concurrently and continued for atleast one year following remission.
Hydarditdform Mole-B-HCG-48 hours after evacuation, Weekly B-HCG levels until normal-3consecutive normal titres are required (if it plateaus or rises, then treat with chemotherapy as choriocarcinoma with same follow up),Monthly B-HCG for 6months to 1year(KNH it is 1year).Oral contraceptives used as above6).

REFERENCES

1. Ross R.B., Donald P.G. Gestational trophoblastic disease In: Novak;s Gynaecology: Jonothan N. Berek Eli Yadashi, Paula A. Hillard ed. 12 edn. Williams and Wilken 1996 Chap 35 pg 1261-1282
2. April G.O., David E.B.: Gestational trophoblastic disease In: Current obstetric and gynaecologic diagnosis and treatment. Allan H. Decherney & Martin. 9th Edition 2003.
3. Palmer J.R. Advances in the epidemiology of gestational trophoblastic disease. J. Reprod. Med. 1994: 39:155-62.
4. Makokha A.E., Mati J.K.G. Chariocarcinoma at Kenyatta National Hospital: 1973-1979. J. Obstet Gyn. East Cent. Africa. 1:27:1982.
5. Bagashawe K.D. Risks and prognostic factors in trophoblastic neoplasia: Cancer 1976:38:1373-85
6. America College of Obstetricians and Gynecologists-Compendium of selected Publications-2000

GYNAECOLOGY CASE NO 2

CARCINOMA OF THE OVARY - LAPAROTOMY AND CHEMOTHERAPY

NAME: LW

AGE: 51YEARS
IP NO: 0723456
DOA: 22/5/01

PRESENTING COMPLAINTS

Abominal swelling ,pain and amenorhea for one year

HISTORY OF PRESENTING ILLNESS

She was admitted with complaints of progressive abdominal swelling and ameonorhea for one year. She also reported vague abdominal pains and a feeling of fullness in the pelvis. She also gave a history of anorexia and progressive loss of weight. She had initially not sought any treatment as she thought she was pregnant.

OBSTETRICS AND GYNECOLOGY HISTORY

She was a Para 3+0. all her deliveries were by caeserian section due to a contracted pelvis. She breastfed all her children and they were all alive and well. Her last delivery was in 1982. she could not remember her LMP as she had been amenorhoeic for about 1 year. She had never used any contraceptives. She could not remember her age at menarche, but had regular cycles lasting 4 days every 30 days.

PAST MEDICAL HISTORY

She had only been hospitalized in relation to her previous deliveries.

FAMILY AND SOCIAL HISTORY

She was a married housewife and lived with her husband in Kiambu. She did not smoke or drink alcohol. Her husband was a peasant farmer. There were no chronic illnesses in the family. The was no family history of breast,ovarian or Gastrointestinal malignancy

SYSTEMIC INQUIRY

This was not contributory.

PHYSICAL EXAMINATION

She was in fair general condition, mildly wasted and had mild pallor. She did not have lymphadenopathy and was not jaundiced. Her vital signs were normal.

RESPIRATORY SYSTEM

She was not in respiratory distress. She had normal lung expansion and good vesicular breath sounds bilaterally. There were no added sounds.

CARDIOVASCULAR SYSTEM

Her pulse rate was 76b/min, blood pressure was 110/75mmHg. She had normal heart sounds and there were no murmurs

CENTRAL NERVOUS SYSTEM

She was well oriented in time, place and person. Her neck was soft and there were no features of meningeal irritation. No other abnormalities were detected.

ABDOMINALL EXAMINATION

She had an old sub umbilical midline scar. The abdomen was distended with a mass arising from the pelvis. The mass was firm, had an irregular surface and mildly tender. It was partially mobile and corresponded to 34 weeks gestation size. There was minimal ascites. The liver and spleen were not enlarged.

VAGINAL EXAMINATION

She had normal external genitalia. The cervix was anterior and felt normal. The uterine size and outline could not be clearly assessed due to displacement by the tumor. The right adnexa and pouch of Douglas were full with tumor mass.

DIAGNOSIS

A diagnosis of ovarian tumor was made.

INVESTIGATION

- FBC
  - Hb 10.1g/dl
  - WBC $8.2 \times 10^9/l$
  - Platelets $322 \times 10^9/l$
- Urea and Electrolytes
  - Na 135mmol/L
  - K 3.5 mmol/L
  - Urea 6.0 mmol/L
- Liver functions test Normal values
- Carcino-embroyonic antigen Not done

- Abdominal Ultra sound scan: reported bilateral ovarian tumors with the left one measuring 30cm in diameter and the right 15cm in diameter. Uterine size was normal and other abdominal organs were normal.

- PAP Smear No abnormal cells seen
- Chest X-Ray Normal

MANAGEMENT

She was prepared for exploration and staging, and gave informed consent for the operation. Blood grouping was done and 3 units of cross- matched blood reserved for the operation. In theatre, she was put under general anesthesia and a vulvovaginal toilet done. She was catheterized and a pelvic examination done confirmed previous finding. Abdominal preparation was done and the abdomen was then opened via a midline incision. Both ovaries were found to be buried in the tumor masses, which were firm and fixed to the surrounding tissues. The uterus was mildly enlarged and attached to the anterior aspect of the masses. There were tumor seedlings evident of the momentum and the peritoneum. Mild straw colored ascites was noted in the Para-colic gutters. The liver, sleen, gall bladder and the uterus were grossly normal. The para-aortic nodes were enlarged. She was therefore graded as Stage III ovarian malignancy.
A total abdominal hysterectomy (TAH) and bilateral salpingo-opherectomy (BSG), with as much resection of the tumor as possible .Aortic node sampling was done with partial omentectomy. Biopsies were taken from the mesentery and the peritoneum, and the ascitic fluid was collected for cytology. The abdomen was then closed and GA reserved uneventfully.

PROGRESS

She had uneventful post-operative course and was planned for chemotherapy after one month
Historogy: reported poorly differentiated Serous Cystadenocarcinoma of the ovary . Ascitic fluid has large vacuolated malignant cells in keeping with adenocarcinoma of the ovary. Omentum shows metastatic adenocarcinoma. No comment was made on the para-aortic nodes.

She was planeed for 12 courses of combined chemotherapy to be given monthly, using the combination of Cisplatin, Adriamcyin and Cyclophosphamide.

DISCUSSION

Of all the gynaecologic cancers, ovarian malignancies represent greatest clinical challege. Ovarian cancer represents a major surgical challege, requires intensive and often complex therapies and it is extremely demanding of the patients psychological and physical -energy. It has the highest fatality-to-case ratio of all the gynaecologicl malignancies. Epithelial cancers are the most

common malignaces, and because they are usually asymptomatic until they have metastasized patients present with advanced disease in more than 2/3 of the cases (1,2). Studies done in our set up indicated that ovarian cancer is the third commonest gynaecollgical malignancy after cancer of cervix and choriocarcinoma (3,4). World wide , the prevalence is age related with an increased risk after 45years and a peak between 60 and 75 years. In Kenya the mean age of patients wth ovarian cancer was reported to be 46.7 years with the majority of cases between 40-60 years. Our patient was 51 years old and within the documented age range.

Ovarian cancer may be divided into 3 major categories based on the cell type of origin. The ovary may also be the site of metastastic disease by primary cancer from another organ site. Unlike cancers of the cervix and endometrium, precursor lesions of ovarian carcinoma have not been defined. The major histopathologic categorises of ovarian cancer are

- Epithelial ovarian cancer: includes serous, Mucinous, Endometroid, clear cell, Transitional cell and undifferentiated carcinomas.

- Germ cell malignances: include dysgerminomas, endodermal sinus tumor, immature teratoma, embryonal carcinoma, choriocainoma gonadoblatoma and mixed germ cell tumors.

- Sex cord and stromal tumours: includes Granulosa cell tumour, fibroma, Thecoma, and Sertoli-leydig tumours.

- Neoplasms metastatic to ovary: from the breast, colon stomach, and endometrium.

Epithelial tumours account for over 60% of all ovarian neoplasms and more than 90% of malignant ovarian tumours. Ovarian serous cystadenocarcinoma is the most common malignant tumour of the ovary. Our patient had a poorly differentiated serous cystadenocarcinoma.

The cause of ovarian cancer is unknown although a number of irstks factors have been identifies. Repeated ovulation, increased dietary fat consumption, intfertility, use of fertility drugs, exposure to talc and exposure to asbestos, are some of the risks factors. Our patient had caeserian deliveries and was thus exposed to talc, which is a risk factor.

Genetic factors also appear to play an important role in development and progression of ovarian cancer. Although most cases of epithelial ovarian cancer are sporadic and exhibit no heritable tendencies, approximately 7% occur in women with a suggestive family history. The most common pedigree are sister/sister and mother/daughter patterns. Three heritable syndrome have been described: (1) site specific ovarian cancer (ii) familial cases of breast and ovarian cancer, (iii) cancer family syndrome characterized by the occurrence of colon cancer and adenocarcinoma of the ovary, breast, or uterus or a combination also know as Lynch II syndrome (hereditary nonpolyposis colon cancer syndrome). Molecular biologic studies suggest the presence of one or

more tumor suppressor genes on chromosomes 17 ,may play a role in the aetiology of this disease (2.5). our patient had no family history of ovarian cancer.

Some factors known to be associated with decreased risk of ovarian cancer are. Chronic anovulation, Multiparity and a history of breast-feeding are protective. Pregnancy decreases the risk of ovarian cancer by 30-60%; oral contraceptive use also decreases the risk by 30-60%, depending on the duration of use 91,2). Tubal ligation also decreases the risk (3). Our patient had not used any contraceptive method.

Ovarian cancer typically develops as an insidious disease, with few warning signs or symptoms. Most neoplastic ovarian tumours produce symptoms until the disease is widely disseminated throughout the abdominal cavity and thus most patients present with advanced disease. A history of non-specific, gastrointestinal complaints, including nausea, dyspepsia, and altered bowel habit, is particularly suggestive. Early satiety and abdominal distention as a result of ascites are generally signs of advanced disease. Other complaints may include constipation, sensation of pelvic weight or pressure and pain. Menstrual abnormalities may be noted in as many as 15% of reproductive age patients with ovarian neoplasm especially oestrogen producing ones like granulosa cell tumors and thecomas. Abnormal vaginal bleeding may occur. Adrogen producing tumours e.g. seroli-leydig cell(Androblastoma) tumours may cause virilization or hirsuitism. Granulose theca cell tumours are clinically estrogen-producing tumors that present with abnormal vaginal bleeding or precocious pubery in young girls. Our patient presented with progressive abdorminal distesion, which she ignored for a year as she thought she was pregnant.

Diagnosis of ovarian cancer poses a great challenge to the oncologist. A concise history and thorough physical examination are paramount. The prognosis of ovarian cancer is significantly improved when the disease is detected while still confined to the ovary. Unfortunately routine pelvic examination is a notorius poor screening method with limited sensitivity and specificity. Aids to diagnosis include Ultrasonography and laparascopy. Tumour markers e.g CA 125, CA 15-3, NBK70K,Lactic dehydrogenase,alfa-fetoprotein and human chorionic gonadotropin have shown disappointing results so far, except for the rare germ cell tumors (5,6,7). This is because tumour markers may also be elevated in numerous benign gynecologyical conditions, including pregnancy, pelvic infection and other conditions like liver disease, breast and lung tumours. Depite this, tumor makers are useful to monitor effectiveness of chemotherapy (2,7). The evaluation of the patient with a suspected ovarian neoplasm should be tailored to a realistic list of possible diagnosis. The age of the patient, the characteristics of the mass on pelvic examination and the radiographic apperance of the mass influence the differential diagnosis.

surgery is the connerstone of therapy for ovarian cancer, regardless of cell type or stage of disease. A gynaeclogic oncologist shoud be consulted whenever this is planned. Surgical preparation and procedures for ovarian neoplasm include

surgical staging. Debulking of advanced disease, and secondary debulking of recurrent or progressive disease and palliative surgery for ovarian cancer induced intestinal obstruction. Surgical procedures may include hysterectomy or bilateral sallpingoophrectomy, resection of fixed ovarian tumours, pelvic lymphadenectomy,paraotic lymphadenectomy, omentecomy, small bowel resection or bypass, large bowel resection, partial gastercomy, splenectomy, ureteral resection, debulking of diaphragm or liver, iliac and aortic vessel, or intestinal metastatis (1,2,5). Our patient was staged with grade III malignancy and underwent a total hysterectomy, bilateral salpingo-oophorectomy and partial onentectomy.

Chemotherapy is used following surgery in epithelial ovarian carcinomas and is indicated in all patients with ovarian cancer except in those with surgical-pathological stage I disease with low risk characteristics. Cisplatin based combination chemotherapy is administered. One common regimen includes cisplatin 50-100mg/M^2 and cyclophosphanide 750-1000mg/M2 given every 3 weeks for 6-8 cycles, as was used in our patient. The potential toxicities for this regimen include alopecia, nephrotoxicity, ototoxicity and myelosuppression. Carboplatin is an analog of cisplatin that can be used on outpatient basis. It is also minimally nephrotoxic and neurotoxicc. Currently most centers recommend combination therapy with platinum and paclitaxel (taxol) (8).
Results from randomized clinicall trials suggest that in patients with optimally debulked disease, intraperitoneal administration of chemotherapy (cisplatin) is superior to intravenous administration(9). This mode of admnistration is not used in our unit.

Most patients with ovarian cancer will have a recurrence. Based on the disease-free interval after completeting chemotherapy, patients can be classified in 2 categories: (i) plaftinum-sensitive (relapse more than 6 months after initial chemotherapy) and (ii) platinum-resistant. Patients with platinum-sensitive disease may exhibit a good response if rechallenged with a platinum agent. The probability of response increases with the duration of the disease-fee interval. The several chemotherapy agents that may be used are etoposide ,in platinum-resistant patients include liposomal doxorubicin, topotecan, oral etoposide, gemcitabine, docetaxel, and vinorelbine. Other agents that may be used are ifosfamide, 5-flurouracil with leucovorin. And Hexalen. Tamoxifen, an oral antiestrogen, also exihibits modest activity but has avery favorable toxicity profile (8).

Assessment of response to combination chemotherapy is based on physical examination changes in size of the palpable mass or radiographically measureable lesions and changes in the CA-125 level. Although the pre-operative CA-125 level does not correlate with the tumour burden changes ,changes in response to chemotherapy appars to be of some prognostic benefit.

Second-look laparotony is defined as re-exploration in patients with advance stage III or IV ovarian cancer, in whom after standard course of chemotherapy there is no clinical ,biocheminal (CA-125), or radiological evidence of disease.

The value of the second look therefore is: (i) to discontinue all chemotherapy if there is no evidence of disease, (ii) to determine the actual surgical and pathologic response to cisplatin based chemotherapy if cliplatin is to be used as part of second line chemotherapy, and (iii) if possibell to deal with any residual disease to achieve the same theoretic benefits described for primary debulking surgery.

Prophylactic cophorectomy has been advocated in patients with family histories of familial ovarian cancer or at the time of hysterectomy for non-ovarian indications, however, this remains controversial.

The prognosis for patients with ovarian cancer is primarily related to the stage of the disease at diagnosis. The five year survival rate for patients with stage I epithelial ovarian cancer is approxiametely 80% stage II, 40-50% stage II 30% and stage IV less than 10%(2,8). Our patient had stage III disease with a five-year survival of 30%

REFERENCES:

1. Berek J.S, Fu S. Y, Hacker N.F. Ovarian Malignaces in Novak's gynaecology, 12th ed. 1996 chap. 33:p 1155-1230

2. Backer VV, Premalignant and malignantl disorders of the ovaries and oviducts in Current Obstetrics and gynecology diagnosis and treatment 8th Ed. 1994, chap 44: p 954-966. Appleton and Lange

3. Njuki S. K ovarian carcinoma; presentation at KNH Mmed Thesis, U.O.N 1979

4. Ojwang S.B.O, Makokha A.E, Sinei S.K ovarian cnacer in Kenya East Africa MedicalJournal. 57:131, 1980.

5. Thompson J.D, Rock J.A. Ovarian cancer, etiology, screening, and surgery in Teindes operative Gynecology, 8th Ed. 1997:54; p1607-1940 Lippincott-raven.

6. Fateh M. Sensible use of tumor markers Roche diagnostic systems 1993.

7. Mohamed S sensible use of tumor update Cancer research, therapy and control 1994, vol 4 (2).

8. Garcia A. Ovarian Cancer Emedice Journal, Sep. 13 2001,vol. 2, No.9

9. Alberts DS, Liu PY, Hanningan EV intraperitoneal cisplatin plus intravenous cyclophosphadime versus intravenous cisplatin plus intravenous cyclophosphamide for stage III ovarian cancer N Engl J Med 1996 dec 26; 335(26)

GYNECOLOGY CASE NO 3

SECONDARY INFERTILITY - TUBOPLASTY DONE

Name:	L.W.	Parity:	1+0
Age:	30 years	DOA:	3-10-00
IP No:	0648470	DOD:	12.10.00

PRESENTING COMPLAINTS

The patient was admitted in ward 1B with history of inability to conceive for a period of two years. She did not have any other complaint.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was a para 1+0. Last delivery was in 1995 which was vertex and spontaneous. She attained her menarche at the age of 19 years. Her last menstrual period was on 22-9-00. Her menstrual cycles were regular, occurring every 28 days and lasting 3-4 days. She had no history of dysmenorrhea,Vaginal discharge or lower abdominal pain. She had never used any family planning method.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She was a housewife married for 2 years and having regular unprotected sex. She was staying in Dandora estate. The husband was a mechanic. She had the first child with another man. She used to take alcohol before marriage and had never smoked. There was no history of chronic illness in the family. The husband had not fathered another child and he had not suffered any chronic illness in the past.

PHYSICAL EXAMINATION

Her general condition was good, she was not pale, not febrile and no lymphadenopathy. Her blood pressure was 110/70mmHg; Pulse rate 84 beats per minute. The respiratory,Breast, cardiovascular and central nervous systems were essentially normal. Hair distribution was normal.

ABDOMINAL EXAMINATION

The abdomen was obese and moving with respiration. She had a small-healed transverse surgical scar below the umbilicus (post laparoscopy scar). On palpation there was no area of tenderness. No masses were palpable.

PELVIC EXAMINATION

The external genitalia was normal. The vaginal walls were also normal. The cervix was firm and about 2cm long. The cervical os was closed. The uterus was normal size and mobile. There was no tenderness on cervical motion and the pouch of Douglas was empty.

DIAGNOSIS

A diagnosis of secondary infertility was made.

INVESTIGATIONS AND RESULTS

Haemogram:	Haemoglobin	- 13.6g/dl
	WBC	- $6.0x10^9$/L
	Platelets	- Adequate
	Urea	- 3.5 mmol/L

Hysterosalpingography showed normal uterine cavity and bilateral hydrosalpinges with no peritoneal spill.

Pelvic ultrasound showed hyperechoic mass within the uterus size 4.6x2.6cm and a cystic hypoechoic mass in the left adnexia measuring 5 x 4.5c.m. Right adnexia was free. The pouch of Douglas was free.

Husbands Semenalysis - Normal findings

PAP smear - CIN 0

Dye Laparascopy Report - Bilateral tubal blockage noted when dye was introduced and left tubo-ovarian mass

HIV - Negative.

MANAGEMENT

The nature of the diagnosis and need for surgery was explained to the patient. She gave an informed consent for the operation. She was starved from midnight and shaved. She was given pre-medication of atropine 0.6mg and pethidine 50mg intramuscularly half-hour before theatre.

OPERATION (8.10.00)

The patient was put under general anaesthesia. In semi lithotomy position, vulvo-vaginal toilet was done. She was catheterized and clear urine was obtained. She was then put in supine position and the abdomen cleaned and draped. The abdomen was opened via Pfannenstiel incision.

FINDINGS

Severe pelvic adhesions were found between tubes, ovaries and loops of intestines. There was bilateral hydrosalpinges with the right stuck at the posterior aspect of the uterus. The uterus was found to be normal with no fibroids.

DONE

The adhesions were released and right tube became free from posterior aspect of the uterus - cuff salpingostomy was done bilaterally and dye test done showed bilateral spill. Abdominal cavity was irrigated with dextran 70 in saline plus hydrocortisone. The abdomen was closed in layers and patient reversed from general anesthesia.

POSTOPERATIVE MANAGEMENT

The patient was taken to recovery room for observation of vital signs half hourly. She was taken to the ward when she was fully awake and continued with observations four hourly, intravenous fluids, intramuscular pethidine 100mg 6

hourly, gentamicin 80mg 8 hourly and crystalline-penicillin 2MU 6 hourly. She had uneventful recovery and was discharged on 12-10-00 for follow-up at gynaecology clinic in six weeks.

FOLLOW UP

She was seen at gynaecology clinic on 22-11-00. She was in good general condition with no complaints. She was not pale. The wound was well healed. She had her period on 12-11-00 and was put on clomiphine for 3 cycles empirically and advised to come to the clinic if she missed her periods or after the fourth month.

DISCUSSION

Infertility can be either primary where conception has never occurred or secondary where at least one conception has occurred for one or both partners but the couple is currently unable to achieve conception (1,2). Infertility can be diagnosed when the couple has not achieved a pregnancy after one year of normal unprotected coitus (1,2,3). Our patient had secondary infertility and had not achieved conception for 2 years.

About 10-15% of couples are involuntarily infertile (1). In Kenya, exact statistics on infertility are unknown but approximately 60% of all new gynaecology clinic attendance at Kenyatta National Hospital complain of infertility (4). It is also estimated that patients complaining of infertility take two thirds of the gynaecological consultation (5).

Infertility is a couple problem but not the woman alone. Female factor accounts for 30% of cases, male for 30% while 30% a combination of both, while in 10% of the cases no cause is found (2,3). In 1986, Mati found that 8% of infertility in Africa was due to male factor only and 35% was due to both male and female factors. The major causes of male factor infertility were abnormality of sperm mobility and morphology, azoospermia and ejaculatory problem (5). The spouse of our patient had no abnormality and a semen analysis was normal.

Most couples (80%) achieve conception within one year of exposure and 90% with 18 months (2). Increased coital frequency also increases chances of pregnancy with 83% of couples who have intercourse about 4 times a week achieving conception in less than 6 months compared to only 16% of those who have intercourse once a week (1,2).

The total female factor infertility in Africa has been shown to be upto 72% with leading causes being acquired tubal pathology and ovulatory factors (5). Other female causes include dietary disturbances, severe anemia, anxiety, absence of uterus, uterine abnormalities, pituitary failure, thyroid disturbances, ovarian failure, tuberculosis, sexually transmitted diseases, gonodal dysgenesis, endometriosis, myoma and polyps (1,2,3). Our patient had bilateral tubal occlusion.

In Africa, World Health Organization studies have shown that, overall, the presence of tubal factor accounts for 85% of infertile women and 49% having bilateral occlusion, 24% with pelvic adhesions (5). The leading cause of tubal occlusion has been reported to be gonorrhea, post-abortion sepsis and puerperal sepsis (5). In Kenya, studies have shown that 73% of female patients with infertility have tubal occlusion secondary to pelvic inflammatory disease (4,5). After a single episode of PID, 15% of women will be infertile due to peritubal adhesions or tubal occlusions. This risk doubles with successive episodes. Where the cause of infertility is due to both partners, it may be due to antisperm antibodies, low fertility index or immunological incompatibility (1,2,5). As infertility involves the couple, both should be present at the initial visit and a complete medical history and physical examination done on both. Intended investigations should be fully discussed (1,2,6).

The fallopian tubes have many roles in the process of natural conception. Its role begins with the pickup of the oocyte, transport of the ovum, transport and final maturation of the spermatozoa, environment for fertilization, growth of the zygote and the final transport of the zygote to the uterus. Normal tube would therefore require the interaction of a large number of systems and ideally

assessment of the fallopian tube would be able to evaluate each of these factors (7). Although tubal patency is obvious requirement to allow passage of the gametes, factors that affects the gametes and embryo, the effectors of tubal transport i.e. the cilia, flow of tubal fluid and tubal interactions appear to constitute a high order system in which intact function of each is required for normal tubal function to be retained (7).

Occlusive tubal disease is usually a result of sexually transmitted disease, post abortion sepsis and pregnancy related like postpartum sepsis. Gonococcal and chlamydia infections are the main sexually transmitted infections associated with tubal disease (1,2,3,7,9). Unfortunately, many cases of chlamydia infections are asymptomatic and the sole clinical manifestation is tubal infertility. Upto 75% of infertile women in one study had significant anti-chlamydia antibody tires compared to only 20% in normal control (9).

Our patient had no symptomatic pelvic infection. Maybe chlamydia infection had played a major role in her tubal pathology. The evaluation of infertility should start with evaluation of at least 2 semen samples if the first is abnormal. These are best collected by masturbation after abstinence for 3 to 5 days. Examination should be prompt, within 2 hours of collection (6).

In women, fallopian tube is evaluated by demonstrating patency and a normal uterine appearance at endoscopy. Various methods are currently in use to demonstrate patency like hystero-salpingogram (HSG). Significant problems exist in comparing the ability of different methods of tubal patency assessment because of spasm of the tubal ostium or the presence of a mobile flap of thickened endometrium may cause physiological obstruction (78%). Glucagon, isoxupriene and terbutaline have been used to relax the tubal sphincter. Other methods to assess tubal patency include insufflation (Rubin test), echogenic ultrasound, laparoscopy, falloscopy and laparotomy (1,7,8). Our patient had HSG and dye laparascopy.

Prognosis of tubal patency surgery is poor due to irreversible functional damage to the mucosa or fembriae and pregnancy outcomes are usually about 50% (7). The success of reparative surgery of the tube depends on the size of hydrosalpinx, nature and extent of the adhesions, microscopic aspects of the endosalpinx and the thickness of the tube and wall of hydrosalpinx (10). Flimsy adhesions in the presence of an otherwise normal tube or isolated distal tube obstruction offer the most favourable outcome of surgery. Results are related to the original extent of disease damage. With mild, moderate and severe damage having success rates of 80,17 and 5% respectively (1,2,7). The operation can be done through laparoscopy or laparotomy. The results of depend on the type of operation and the experience of the surgeon.

The types of surgery which can be performed on the tube includes adhesolysis-sulpingo-ovariolysis,ovario-fimbrolysis,Fimbryoplasty,Salpingostomy(like cuff salpingostomy),Anastomosis-utero tubal and tubal-tubal,Tubal reimplantation and Tubal transplantation

In the developed countries patients with tubal pelvic infection damage are better offered the choice of advanced reproductive techniques like invitro fertilization and embryo transfer (7). Patients who conceive after tubal surgery are at an increased risk of ectopic pregnancy. Prognosis in our patient was gauged as average due to the disease process and the fact that her tubal occlusion was at the fimbrial end.

REFERENCES

1. Horstein, M.D., Shust, D.J. Infertility. Novak's Gynaecology 12th Ed. 1997;Williams and Wilkins, **34**:915.

2. Varma, T. Female infertility. Clinical gynaecology 5th Ed. 1991; **24**: 645.

3. Junes, D.I. Infertility. Fundamental of Obstetrics and Gynaecology. 5th Ed. 1990, 96.

4. Mati, J.K.G., Mathews, T., Formula, J.N. A study of infertility in Kenya. Results of
investigations of the infertile couple in Kenya. East Afri. Med. J. 1981;**58**:288.

5. Mati, J.K.G. Infertility in Africa. Magnitude, major causes and approaches to management. J. Obstet. Gynaecol. Centr. Afr. 1986;**5**:65.

6. Shearma, R.P. Dewhurst's textbook of obstetric and gynaecology for postgraduate. 4th ed.1986; Blackwell Scientific Publications, **18**:432-441.

7. Gomel, V. Reconstructive tubal surgery. Te Lindes Gynecology 8th Ed. 1997; Lippicolt-Raven, Philadephia, **14**: 549

8. Magnuies, S.D., Djahan, B. O; Grudizinkes, J.G. Assessment of the fallopian tube. Obstet. Gynaecol survey, 1992; **47**: 587.

9. Mens, D.P., Macnealey, S.G. A review of the microbiology, immunology and clinical Implication of chlamydia trachomatis infections. Obsttet.Gynaecol Survey 1992; **47**: 440.

GYNECOLOGY CASE NO 4

DYSFUNCTIONAL UTERINE BLEEDING - TOTAL ABDOMINAL HYSTERECTOMY

Name	:	N.N.M.
Age	:	45 years
IP NO.	:	0804593
DOA	:	30.9.2002
DOD	:	22.10.2002
Diagnosis	:	Dysfunctional uterine bleeding
Parity	:	8 + 0

Presenting complaints

The patient complained of lower abdominal pains which she had for 4 years and irregular vaginal bleeding over 4 months.

History of presenting complaints

She has been having episodes of lower abdominal pains over a period of 4 years and she had been on some medications with only temporary relief. She subsequently developed irregular, heavy per vaginal bleeding 4 months prior to admission and had been examined at the gynaecology outpatient clinic from where she was sent to the ward. The blood was at times in form of clots.

Obstetric and gynaecologic history

She was a para 8 + 0 whose last delivery was in 1991. She had never used any contraceptive method.

Past medical history

This was not significant.

Family and social history

She was married and stayed at Makueni. She did not smoke and never drank alcohol.

Drugs

There was no known history of allergy.

Systematic enquiry

She had no other major problems.

General physical examination

She was found to be a middle aged lady in fair general condition. There was no fever, she was not pale and had no oedema or jaundice. The blood pressure was 120/60mm Hg, pulse 88/minute and temperature 37.2^0c.

Abdominal examination

The abdomen appeared flat and there were no areas of tenderness or clearly discernible masses.

Vaginal examination

The external genitalia appeared normal and there was no evidence of active vaginal bleeding or abnormal discharge. The cervix was long, posterior, firm with a smooth surface. The uterus felt slightly bulky. There were no obviously palpable adnexal masses or tenderness.

Other systems

These were found to be normal.

Diagnosis: metrorrhagia

Investigations

1. Urea and electrolytes + creatinine
   - K + - 4
   - Na + - 136 } mmol/l
   - BUN - 1.2
   - Cr - 79 µmol/l

2. Haemogram
   WBC - 5.6×10^9/L

Hb - 11.5g/dl

Platelets - 381/mm^3

3. Pap smear - normal findings.
4. Endometrial biopsy (on 1. 10. 2002) - this showed simple cystic glandular hyperplasia of the endometrium.
5. Pelvic ultrasound scan - this showed a bulky uterus.

Management

The clinical findings were explained to the patient and she was also informed of the available treatment modalities. She opted to have total abdominal hysterectomy done. She was given enema on the evening before surgery and in the morning of the day of surgery. The patient was given 0.6mg of intramuscular atropine before being wheeled to theatre.

In theatre, she was aseptically catheterized and scanty amount of clear urine obtained. Vaginal examination under anesthesia confirmed the earlier findings. The vagina was painted with povidone iodine and the patient put in supine position. The abdomen was cleaned and draped with sterile towels then opened via a pfannenstiel incision. The uterus was noted to be bulky while both ovaries had small cysts which were punctured and the contents drained. Total abdominal hysterectomy was then performed as described in the introductory pages. Haemostasis was achieved. The abdomen was closed in anatomical layers and general anaesthesia successfully reversed. The uterus was sent for histopathological examination.

Post-operatively, the vital signs were monitored ½ hourly until she was fully awake then 4 hourly. She was given intravenous gentanicin 8 - hourly, 2 mμ of intravenous crystalline penicillin 6 hourly and 100mgs of intramuscular pethidine 8 hourly. She did quite well and was allowed home on 22.10.2002 to be reviewed at the gynaecology outpatient clinic after 4 weeks.

Discussion

Dysfunctional uterine bleeding is that which deviates significantly from a normal pattern in duration, amount or frequency. It usually results from anovulation and is not associated with an organic lesion of the uterus. It is encountered most frequently at the beginning or near the end of the woman's reproductive years. There is substantial evidence that at least 50% of menstrual cycles during the first 3 post menarchal years are anovulation, and FSH and estrogen concentrations change in women approaching menopause, even before they cease to ovulate. In the premenopausal group, serum estradiol levels are reduced, and FSH levels are abit elevated, although not into the menopausal range. (1). The patient discussed here was 45 years old.

The most common aetiology of dysfunctional uterine bleeding (DUB) is estrogen withdrawal or oestrogen breakthrough bleeding in an anovulatory patient. In the absence of progesterone exposure to cause inhibition of DNA synthesis and mitosis, the estrogenic proliferative response causes stromal cell growth to exceed structural integrity of its stromal matrix, and the endometrium breaks down with irregular bleeding. Unopposed estrogen results in vascular endometrial tissue with relatively scant stroma, giving glands a back to back appearance. The endometrium is fragile and undergoes repetitive spontaneous breakdown. In the absence of normal control mechanisms to limit menstrual blood loss, bleeding can be prolonged and excessive. High levels of estrogen are associated with polycystic ovaries, obesity, immaturity of the hypothalamo - pituitary - ovarian axis in post pubertal teenagers and late anovulation. There is no vasoconstrictive rhythmicity, no tight coiling of spiral vessels, no orderly collapse to induce stasis. The anovulatory tissue can only rely on the "healing" effects of endogenous estrogen to stop local bleeds. However, this is a vicious cycle in that this healing is only temporary. (1,2)

Unopposed estrogen stimulation can, over time, induce a hyperplastic response in the proliferating endometrium. Such hyperplasia can eventually develop the cytologic changes associated with neoplasia; a typical adenomatous hyperplasia or even low grade adenocarcicioma. Such cellular transformation takes even 10

to 20 years. A young DUB patient has a low risk of hyperplasia or neoplasia and generally does not require endometrial sampling. The perimenopausal patient has a substantially higher risk however, and sampling is mandated. (1,3). Our patient had simple cystic glandular endometrial hyperplasia without atypia.

It is important to exclude the organic causes of anovulation e.g. thyroid or adrenal abnormalities. (4)

The management of DUB depends on the age of the patient. The diagnosis is made by history, absence of ovulatory temperature changes, low serum progesterone and results of endometrial sampling in the older woman. (1,4)

In the adolescents, all that may be necessary is reassurance since the early menstrual cycles tend to be anovulatory. Pelvic assessment should be performed to rule out pregnancy or any other pathology. Oral estrogens may be useful or estrogens followed by progesterone, progesterone alone or even combination oral contraceptives. Estrogens must be continued for 20 - 25 days at a lower dose (1.25 mgs) and medroxyprogesterone acetate, 10mg/day added for the last 5 days following an initial dose of conjugated estrogen in a dose of 2.5mgs 4 times a day. Increased dosages of estrogen may be needed if bleeding persists for more than 2 - 3 days. Oral contraceptives are given in an initial dose 3 to 4 times the usual one then lowered for the next few cycles. Patients with proliferative endometrium may benefit from 10mgs of medroxyprogestrone acetate daily. This is given for 3 - 6 courses. (5)

In patients aged 20 to 30 years, pathological causes are more common and should be investigated. Hormones may still be useful as above, old premenopausal women stand the risk of developing cancer and investigations must be carried out with more care before hormonal therapy is started. (5)
For patients whose bleeding cannot be controlled with hormones, who are symptanastically anaemic, and whose lifestyle is compromised by persistence of irregular bleeding, abdominal or vaginal hysterectomy may be necessary. Endometrial ablation techniques using laser, roller ball, or resectoscope

preceded by gonadotrophin releasing hormone (GnRh) analogues like buserelin,naferelin,goserelin or zoladex are useful where hysterectomy is not possible. Definitive surgery may also be needed for coexistent endometriosis, myoma and disorders of pelvic relaxation (4,6). Other drugs which have been used in abnormal uterine bleeding includes Danazol,HRT,Levenorgestral-releasing IUCD,NSAIDs like mefanamic acid and antifibrolytics like tranexamic acid.

Patients with atypical adenomatous endometrial hyperplasia should preferably have hysterectomy done, as are postmenopausal women with any type of hyperplasia. (7). Our patient was 45 years old, had simple cystic glandular hyperplasia of the endometrium, but she opted for hysterectomy after the other options of therapy were explained to her.

References

1. Precis III: An update in obstetrics and gynaecology, Dysfunctional uterine bleeding: The American College of Obstetrician and Gynaecologists, pg. 287-288, 1986
2. Speroff L, Glass HR, Kase GN: Dysfunctional uterine bleeding Clinical gynecologic Endocinomology and infertility 5th ed. Williams and Wilkin pg. 531 - 546, 1997
3. Kurman RJ, Kaminiski, PT, Norris HJ, The behaviour of endometrial hyperplasia. A long term study of untreated, hyperplasia in 170 patients, Cancer 56:403, 1985
4. Gerbie MV, complications of menstruation; Abnormal uterine bleeding. In: current obstetric and gynaecology diagnosis and treatment, 8th ed. Appleton and large, Pg. 662 - 669, 1994
5. Whitehead MI, Frazier D. The effects of estrogens and progestrogeous on the endometrium. Obstet gynecol clin North AM. 14: 299, 1987
6. Townsend Dt, Fields G, M Causland A, et al. Diagnostic and operative hysteroscopy in the management of persistent post menopausal bleeding.
7. Precis III: An update in obstretics and gynaecology disorders of the uterus, American college of Obstetrician and Gynecologists, Pg. 186 - 192, 1986.

GYNECOLOGY CASE NO 5

SYMPTOMATIC UTERINE FIBROIDS - TOTAL ABDOMINAL HYSTERECTOMY

Name:	S.W.	D.O.A.:	4.7.02
Age:	42 year	D.O.D:	8.7.02
IP No.:	0784755	Para:	2+0

PRESENTING COMPLAINS

She came with complains of prolonged heavy menses for the last 2 years associated with lower abdominal pains.

HISTORY OF PRESENTING ILLNESS

Her periods were regular until two years ago when she started having heavy and prolonged menses lasting upto eight days. The bleeding was in clots and came upto two times a month. She also had associated lower abdominal pains.

OBSTETRICAL AND GYNAECOLOGICAL HISTORY

She is a Para 2+0, both children alive and well. Her last delivery was 20 years ago. She had used an intrauterine contraceptive device for 14 years until 2 years ago when it was removed. Menarche was at 15 years of age.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She is a married housewife. Her husband is a farmer. They both do not smoke and drink alcohol. There is no family history of chronic illness or similar illness

PHYSICAL EXAMINATION

She was in fair general condition, not pale, nor jaundiced. She was clinically afebrile.

ABDOMINAL EXAMINATION

The abdomen was not distended. It was soft and non tender. There was a mass arising from pelvis corresponding to14 weeks gestation.

VAGINAL EXAMINATION

The external genitalia was normal, cervical os closed. Uterus was 14 weeks and mobile. The adenexa free.

Investigations

Pap smear - normal smear. Endocervical cells seen.

Pelvic scan - enlarged uterus with multiple fibroids

Largest fibroid was posterior and 6.5cm x 6.3 in size

DIAGNOSIS

A diagnosis of symptomatic uterine fibroids was made.

MANAGEMENT

She was scheduled for a total abdominal hysterectomy. She was counseled and written consent form filled. Blood was taken for haemogram and urea and electrolytes.

Results

Hb-11.1g/dl

White cell count -$8.4x10^9/l$

Platelets -$403 x 10^9/l$

Urea and electrolytes Na^+ -137mmol/l

K^+ 4.8mmol/l

She was then prepared for theatre. She was shaved night before, starved from midnight . Atropine 0.6mg given ½ hour before theatre and wheeled to theatre.

OPERATION

She was put in supine position and general anaesthesia induced. She was put in semi-lithotomy position and vulvovaginal toilet done. Catheterization was done and 100mls clear urine was obtained, the catheter was left in situ. The vagina was painted with genital violet paint. She was put in supine position and abdomen cleaned and draped. The abdomen was opened in 3 layers via a Pfannestein incision.

The findings were:

Uterus was enlarged with multiple fibroids. The largest one -posterior 5x6cm.

Left ovary found adherent to the uterus with multiple adhensions.

Total hysterectomy and left salphingoophorectomy were done. The abdomen was cleaned with saline and closed in 3 layers. General anaesthesia was reversed without problems.

POST OPERATIVELY

She was monitored ½ hourly for first 3 hours then 4 hourly (blood pressure, temperature and respiratory rate). IV fluids and normal saline was alternated with 5% dextrose given at 1 litre 8 hourly. She was put on IV antibiotics and analgesics. On the first post operative day, bowel sounds were present and she was started on oral sips and encouraged to sit and move out of bed.

On the second post operative day, she was well and mobile. She was started on oral medication and light diet. On the 4th post operative day, the wound was exposed and found dry and clean.

She was discharged home for review in the gynaecological out patient clinic in three weeks while on medication. She was reviewed after three weeks and found to be well. The wound had healed well and she was discharged from the clinic.

DISCUSSION

S.W. presented with symptomatic uterine fibroids. Total hysterectomy and left salphigoophorectomy was done and she did well post operatively.

Uterine fibroids are benign tumours of the smooth muscle of the uterus. They are also referred to as leiomyomas or myomas (1)

They are the commonest pelvic tumours in women (2). They are estimated to be in about 25% of women in reproductive health (1). This incidence may be higher as most are asymptomatic.
At Kenyatta National Hospital they account for 66.7% of hysterectomies carried out (3).
The uterine fibroids develop between the ages of 20-50 years. They are not seen before 20 years. They have a peak at 30-40 years and are 3-9 times more commoner in blacks than whites (1).

They are commoner in nulliparous and relatively infertile females (1). It is not clear if the fibroids cause sub fertility or sub fertility cause fibroids , or both have a common cause (1). However, fibroids may cause infertility by mechanical means by causing obstruction or interfering with implantations (2). At Kenyatta National Hospital, 70% of the patients had less than 2 children (3). The patient presented was a 42 year old. Para 2+0 black woman whose last delivery was 20 years ago.

The cause of uterine fibroids is unknown. Oestrogens have been implicated as evidenced by increased estrogen receptors in fibroids as compared to the surrounding myomerium and the fact that they grow after puberty and regress after menopause.

They also enlarge with estrogen replacement (1,4). Reduction of fibroid size has been seen with administration of leutenizing hormone releasing hormone agonists (LHRH) which render the women hypoestrogenic (5). Fibroids also have familial tendencies suggesting genetic factors (1).

Fibroids are classified according to the anatomical location into submucous, intramural or intestitial and subserous (1). Majority of the fibroids are in the corpus of the uterus although 1-2% are found in the cervix (1).

hey are compared to non striated muscle fibers arranged in a dividual cells are spindle shaped with an elongated nucleus. ıted by a pseudocapsule from the surrounding tissues (4).

ion depends on the number, size, location and presence or ications. 30-50% of the fibroids are symptomatic of which 30% ormal uterine bleeding (4).

be due to abnormalities of ovarian function leading to rplasia, large surface area due to submucous fibroids or the rmally dilated venous plexuses due to fibroid obstruction (4). normalities in prostaglandin production and uterine ch control blood flow through the uterine wall (4,5).

include pelvic pressure and pain. They may also cause mptoms, infertility, miscarriages and vaginal discharge (1). In may cause complications, which include increase in uterine an rate, malpresentation, premature labour and post partum

tations include iron deficiency anaemia due to menorrhgia. ycytheamia may be seen due to production of erythropoetin compression of the ureters by the tumour leading to oduction by the kidney (4,5). Pain is also another systemic hich occurs following infection, torsion of a penduculated ontractions to expel a sub-mucous fibroid or fenestration of

ndergo several types of degeneration which include hyaline, eptic, red and fatty degeneration: 0.1-0.5% develop malignant o leiyomyosarcoma (5). Diagnosis of uterine fibroids is mainly tests are valuable.

ɔpically, they are compared to non striated muscle fibers arranged in a ıttern. Individual cells are spindle shaped with an elongated nucleus. demarcated by a pseudocapsule from the surrounding tissues (4).

presentation depends on the number, size, location and presence or of complications. 30-50% of the fibroids are symptomatic of which 30% with abnormal uterine bleeding (4).

agia may be due to abnormalities of ovarian function leading to trial hyperplasia, large surface area due to submucous fibroids or the e of abnormally dilated venous plexuses due to fibroid obstruction (4). nclude abnormalities in prostaglandin production and uterine :ions, which control blood flow through the uterine wall (4,5).

ymptoms include pelvic pressure and pain. They may also cause bowel symptoms, infertility, miscarriages and vaginal discharge (1). In cy, they may cause complications, which include increase in uterine ;h caeserian rate, malpresentation, premature labour and post partum -hage (6).

c manifestations include iron deficiency anaemia due to menorrhgia. nally, polycytheamia may be seen due to production of erythropoetin umour or compression of the ureters by the tumour leading to ɔoetin production by the kidney (4,5). Pain is also another systemic tation, which occurs following infection, torsion of a penduculated uterine contractions to expel a sub-mucous fibroid or fenestration of oid (5).

-oid can undergo several types of degeneration which include hyaline, calcific, septic, red and fatty degeneration: 0.1-0.5% develop malignant -mation to leiyomyosarcoma (5). Diagnosis of uterine fibroids is mainly but many tests are valuable.

Microscopically, they are compared to non striated muscle fibers arranged in a whorl pattern. Individual cells are spindle shaped with an elongated nucleus. They are demarcated by a pseudocapsule from the surrounding tissues (4).

Clinical presentation depends on the number, size, location and presence or absence of complications. 30-50% of the fibroids are symptomatic of which 30% present with abnormal uterine bleeding (4).

Menorrhagia may be due to abnormalities of ovarian function leading to endometrial hyperplasia, large surface area due to submucous fibroids or the presence of abnormally dilated venous plexuses due to fibroid obstruction (4). Others include abnormalities in prostaglandin production and uterine contractions, which control blood flow through the uterine wall (4,5).

Other symptoms include pelvic pressure and pain. They may also cause urinary, bowel symptoms, infertility, miscarriages and vaginal discharge (1). In pregnancy, they may cause complications, which include increase in uterine size, high caeserian rate, malpresentation, premature labour and post partum haemorrhage (6).

Systemic manifestations include iron deficiency anaemia due to menorrhgia. Occasionally, polycytheamia may be seen due to production of erythropoetin by the tumour or compression of the ureters by the tumour leading to erythropoetin production by the kidney (4,5). Pain is also another systemic manifestation, which occurs following infection, torsion of a penduculated fibroid, uterine contractions to expel a sub-mucous fibroid or fenestration of the fibroid (5).

The fibroid can undergo several types of degeneration which include hyaline, cystic, calcific, septic, red and fatty degeneration: 0.1-0.5% develop malignant transformation to leiyomyosarcoma (5). Diagnosis of uterine fibroids is mainly clinical but many tests are valuable.

Ultrasonography may be able to tell the size, location of the fibroid and may differentiate between adenomyosis and ovarian masses. This may be enhanced by feeling the uterus with saline (sonohysterogram). Other tests are plain abdominal x-ray ,hysterosalpingography, hysterescopy, laparascopy and magnetic resonance imaging (MRI).

Haemogram may show anaemia or polycytheamia ,it may also show leucocystosis and elevated erythrocyte sedimentation if there is septic degeneration (5). MRI may provide an excellent picture but usually the cost is not justified as all the information needed to plan management can be obtained by other methods (7).

Management of women with uterine fibroids depends on the patient's age, parity, pregnancy status, desire for future pregnancies, general health and symptoms as well as the size and location of the fibroids (4).

Emergency treatment includes correction of anaemia in those who have lost blood which includes blood transfusion and haematinics. Surgery may be indicated in those who have infected fibroids, acute torsion or intestinal obstruction (4). No treatment is required for asymptomatic uterine fibroids but judicious patient observation and follow up is required.

Asymptomatic women who want to have children and are not infertile are best left alone as adhension formation can lead to tubal occlusion (8).

Perimenoupasal women are sometimes not treated if symptoms are minor or are given gonodotrophin releasing hormone (GNRH) agonists to reduce the symptomatology (8,9). This is because they tend to shrink after menopause with the loss of estrogen (8). This should however, be reconsidered with the current recommendation of hormone replacement (8).

Surgical treatment is recommended for symptomatic uterine fibroid and some of the indications are; abnormal uterine bleeding with resultant anemia, unresponsive to hormonal treatment, chronic pain with dysmenorrhea, dysparunia, lower abdominal pain, acute pain secondary to a degenerative change or torsion, urinary symptoms, rapidly growing fibroid or infertility (9).

Hysterectomy is the definitive surgical option. For small fibroids (less than 12 weeks), vaginal hysterectomy can be done. Laparascopic hysterectomy is also possible for small fibroids. This can be totally by morcelation or by laparascopic assistance, vaginal hysterectomy. The normal total abdominal hysterectomy by laparatomy is the preferred mode as the cervix is removed reducing the risk of cervical cancer. However, sub-total hysterectomy is getting new emphasis as it demonstrated better bladder function after the procedure (8).

When future fertility is deserved or there is a small submucous or suberous fibroid or the woman wishes to retain her uterus myomectomy is the method of choice (9). The patient has to consent for hysterectomy. The main risk of myomectomy is haemorrhage, which may necessitate hysterectomy.

Bonney's clamp and rubin touniquet have been used to reduce bleeding but now diluted vasopressin (1ml/20iv vasopressin with 19ml normal saline) either intramuraly or penvascular has been shown to be better than the touniquent (10).

Other complications include adhension formation, which can cause infertility and uterine perforation in hysterecopic myomectomy.

Sub mucus fibroid can be removed by hysterecopic myomectomy and sub serous by laparascopic myomectomy (8). Medical treatment is used if the fibroids are large and require to be reduced in size, to correct anaemia prior to surgery. If there is medical contra-indication to surgery or if the patient is peri menopausal (3). Medical treatments include progesterones like depo-provera,

which reduce the bleeding. GNRH agonists cause temporary menopause leading to reduction in fibroid size. They are not used beyond 3 months due to osteoporosis and hot flushes (11). They are normally used prior to surgery or in peri-menopausal women. Other drugs are danazol-antigonadotropin/androgen agonist, which reduces bleeding, and RU-486 (mifepristone-anti progesterone) which result in a significant reduction of uterine size (7).

Recently, uterine artery embolization involving arterial catheterization and embolization is being studied (7). Myolysis using a diathermy needle is also being investigated.

Other methods used for conservative management include radiotherapy in patients who are poor risk for surgery (2).

The patient presented had a large uterine fibroid and she underwent total abdominal hysterectomy thus rendering her unable to conceive.

REFERENCES

1. Muto M G and Andrew J. F.: Leiomyomas. Kristners Gynaecology 6th edition: 1995 p 147-149.
2. Wanjala S.H.M.: Uterine fibroids at KNH 1974-1978 M.Med thesis, University of Nairobi 1980.
3. Lacey C.G.: Benign disorders of the uterine corpous In: Pernoll M.L. (ed) Current Obstetrics and Gynaecological Diagnosis and Treatment 8th edn. Appleton and Lange, Connecticut 732:1974.
4. West C.P., Ludinsen M.A.: Fibroids and menorrhogia. Ballieres Clin. Obstett Gynaecol 3 357: 1989.
5. Arrumigan H.F., Silvanesarathan V.: Uterine fibroids in pregnancy Int. J. Gynecol Obstet 34:45; 1990.
6. HHP/WWW/Gynalternatives Cpm/fibroids Hm Dr. Indman 2000
7. Fletcher H.M., Fredrick J.: An update on management of uterine fibroids: Africa Health 21(2) S: 1999.
8. Paula A. Hillard.: Benign diseases of the female reproductive tract: Novak's Gynecology 12th edition: Joathan Berek, Eli Y. Adashi, Paula A. Hillard 13:372-376:1996.
9. Fredrick J., Fletcher H., Hardie M. et al.: Intramyometrial vasopressin as haemostatic agent during myomectomy. Br. J. Obstet Gynaecol 101: 435 1994.
10. Healy D., Vallenhoven G.: The role of GnRH agonist in the treatment of uterine fibroids. Br. J. Obstet Gynaecol 99: Supp 7:23 1992

GYNECOLOGY CASE 6

CERVICAL CANCER STAGE IB:
WHERTHEIM'S HYSTERECTOMY

Name VC DOA 2/9/02

Age 33years DOD 21/9/02

Ip No 0817698 Parity 2+1

LNMP 10/9/02

Presenting complaint
Post coital bleeding

HPI
She had been well till last year when she noticed post coital bleeding. She was found to have a lesion on the cervix when she visited the doctor. A biopsy taken showed a squamous cell carcinoma (non-keratinized) of the cervix. She was then referred to the KNH for further management. She had no history of weight loss ,abdominal distension or limb swelling. She had first unprotected sexual coitus at 16 years and since then had 5 sexual partners. She had never been done any papsmear .

Obstetric/gynecologic history.

Para 2+1 1st delivery 1989,abortion 1996. LD 1998.

use of oral contraception in 1990

Menarch at 14 years, Periods regular, lasts 3days,cycle of 28 days

Lmp 10/9/02.

Family Social History
Married, as the 2nd wife, lives with the husband in Kariobangi works as a casual worker in a company in Industrial area. Her co-wife had uterine surgery the details of which are not forthcoming. No family history of any malignancy. She does not smoke or take alcohol

Past Medical history.

No history of chronic illness, No history of sexually transmitted diseases

Physical examination

Good general condition, mild pallor, no jaundice or edema. BP 110/60mmHg

Respiratory rate 18/min Temp 36^0C

CNS Normal findings

RS Chest clear

PA No surgical or therapeutic marks, no distension, no masses.

Vaginal examination- Speculum: fungating lesion on the cervix, friable, bleeds easily, vaginal walls free.

Diagnosis: Ca Cervix

Investigations

- Hb 13 g/dl WBC 4.7, RBC 4.5 PCV 38.7 Platelets $116X10^3$
- Urea, electrolytes & Creatinine

Urea 4.5 mmol/l Cr 82 µmol/l Na 143mmol /l K 3.9 mmol/l

EUA Ca Cervix stage Ib

Histology of cervical biopsy; well differentiated squamous cell carcinoma.(nonkeratinized with marked inflammation)

Management

The patient was scheduled for Whertheims hysterectomy and counseled about surgical benefits and risks . She consented to the surgery. She received flagyl and dulcolax as well as an enema as part of bowel preparation the night before surgery.

In theatre a right paramedian incision was used for adequate exposure, the uterus identified and found to be normal; the round ligament was identified , clamped and ligated. The broad ligament was opened posteriorly to access the retroperitonel space. By careful blunt dissection the right ureter was identified and released, thereafter suspended with mersline tape. Internal iliac vessels were identified to their bifurcation and dissected, the nodes were

slightly enlarged. Further dissection was done on the common iliac nodes on the right. The same procedure was repeated on the left side although the left side, nodes were not suspiciously looking. A total abdominal hysterectomy using standard procedure was performed with circumcision of the upper third of the vaginal vault. Bilateral Sulpingo Oopherectomy was done considering the findings of enlarged lymph nodes. The retroperitoneal space was closed, hemostatsis having been achieved. The abdomen was closed in layers and anesthesia reversed successfully. The patient received blood that she had auto-donated .The estimated blood loss was 500ml.

Postoperative management

She remained stable and was ambulated early. On the 2nd day she had bowel sounds and was on normal diet by the 3rd day. The surgical wound was found to be clean on the 3rd day and the patient discharged on the 4th postoperative day and scheduled to return in 2 weeks for possible radiotherapy. At follow-up the wound had healed well and radiotherapy was recommended.

Discussion

VC was 33years old who first presented with postcoital bleeding. She was found to have a non-keratinizing squamous carcinoma of the cervix. She underwent a Wherteim's hysterectomy and was discharged home in a stable condition.

Cancer of the cervix is prevalent in Kenya. VC presented in the early stages of disease. Most women presenting with Ca cervix present with advanced disease. VC presented at an age when CIN rather than Ca cervix has its peak prevalence as noted by Ndavi. In his study the incidence of CIN was 25.6/1000 women and the peak prevalence was in the 30-40 year age group[1].

Global incidence and mortality rates varry. There has been a 75 percent decrease in the incidence and mortality of cervical cancer over the past 50 years in developed countries. In contrast, cervical cancer is the second most common cause of cancer-related morbidity and mortality among women in developing countries: 371,200 new cases annually with a 50 percent mortality rate[2].

This discrepancy is largely due to the widespread institution of cervical cancer prevention programs in developed countries. Cervical cytology smears are excellent screening tools for the diagnosis of preinvasive disease, which can be effectively treated[3]. However, approximately 60 percent of women who develop cervical cancer in developed countries have either never been screened or have not been screened in the preceding five years[4]. These screening programs are essentially nonexistent in many developing countries. Our patient had not undergone any screening.

Diagnosis and managemement of ca cervix is based on physical examination , histological confirmation and accurate staging. Based upon FIGO guidelines, the following examinations are appropriate to establish the stage of disease: palpation, inspection, colposcopy, endocervical curettage, conization, hysteroscopy, cystoscopy, proctoscopy, intravenous pyelography, and radiographic examination of the lungs and skeleton[5]. Suspected rectal or bladder involvement requires confirmation by biopsy. As in all gynecologic cancers, staging is determined at the time of primary diagnosis and cannot be altered, even at recurrence.

The most commonly used staging system is that established by the International Federation of Gynecologists and Obstetricians (FIGO) in collaboration with the World Health Organization and the International Union Against Cancer (IUCC)[5]. Examination under anesthesia is recommended since a careful assessment is required.

FIGO staging of Ca cervix

Stage 0 Carcinoma in situ

Stage 1 cervical cancinoma confined to the cervix

Stage 1A invasive cervical cancer diagnosed by microscopy only

Stage 1A1 stromal invasion no deeper than 3mm,no wider than 7mm in Horizontal spread

Stage 1A2 stromal invasion greater than 3,but less than 5mm and no

Wider than 7mm in horizontal spread

Stage 1B Clinically visible lesion confined to the cervix or microscopic Disease greater than stage 1A

Stage 1B1 Lesion <4cm

Stage 1B2 Lesion >4cm

Stage IIA Tumor extends to upper 2/3 of Vagina

Stage IIB Tumor extends to parametrium but not pelvic side wall

Stage IIIA Tumor involving the lower 1/3 of vagina

Stage IIIB Tumor extends to pelvic side wall (often obstructing Ureter on IVU)

Stage IVA Tumor involving the bladder or the rectum

Stage IVB Extra pelvic spread,eg liver or lung metastasis

Women with early stage cervical cancer (up to and including FIGO stage IIA) may be treated with either Wherteim's hysterectomy and pelvic lymphadenectomy, or definitive radiation therapy with concomitant chemotherapy. The advantage of surgery is that the ovaries may be left intact. Radiation with concomitant chemotherapy is administered postoperatively in selected patients at increased risk of recurrence following radical hysterectomy.

Wherteim's hysterectomy alone is appropriate therapy for women with localized disease. Full pelvic lymphadenectomy is generally indicated at the time of Whertim's hysterectomy. Lymph node- bearing tissues are stripped within an area encompassed by the common iliac artery cephalad, the circumflex iliac vein caudally, the genitofemoral nerve laterally, the superior vesical artery medially, and the obturator nerve posteriorly. This is followed by a paraaortic lymphadenectomy.

Adjuvant postoperative radiation with concomitant chemotherapy is recommended for women with localized cervical cancer who have either high or intermediate risk factors for recurrent disease. Postoperative treatment is recommended for women with one or more of the following high-risk features:

Wider than 7mm in horizontal spread

Stage 1B Clinically visible lesion confined to the cervix or microscopic Disease greater than stage 1A

Stage 1B1 Lesion <4cm

Stage 1B2 Lesion >4cm

Stage IIA Tumor extends to upper 2/3 of Vagina

Stage IIB Tumor extends to parametrium but not pelvic side wall

Stage IIIA Tumor involving the lower 1/3 of vagina

Stage IIIB Tumor extends to pelvic side wall (often obstructing Ureter on IVU)

Stage IVA Tumor involving the bladder or the rectum

Stage IVB Extra pelvic spread,eg liver or lung metastasis

Women with early stage cervical cancer (up to and including FIGO stage IIA) may be treated with either Wherteim's hysterectomy and pelvic lymphadenectomy, or definitive radiation therapy with concomitant chemotherapy. The advantage of surgery is that the ovaries may be left intact. Radiation with concomitant chemotherapy is administered postoperatively in selected patients at increased risk of recurrence following radical hysterectomy.

Wherteim's hysterectomy alone is appropriate therapy for women with localized disease. Full pelvic lymphadenectomy is generally indicated at the time of Whertim's hysterectomy. Lymph node- bearing tissues are stripped within an area encompassed by the common iliac artery cephalad, the circumflex iliac vein caudally, the genitofemoral nerve laterally, the superior vesical artery medially, and the obturator nerve posteriorly. This is followed by a paraaortic lymphadenectomy.

Adjuvant postoperative radiation with concomitant chemotherapy is recommended for women with localized cervical cancer who have either high or intermediate risk factors for recurrent disease. Postoperative treatment is recommended for women with one or more of the following high-risk features:

- Positive or close resection margins
- Positive lymph nodes
- Microscopic parametrial involvement

With respect to lymph node involvement, there is a positive correlation between the number of positive nodes and the risk of recurrent disease[6]. However, even one microscopically positive lymph node is important may convey the same recurrence risk as several positive nodes[7].

In women with early stage cervical cancer at high risk for recurrence following radical hysterectomy, radiation with concomitant chemotherapy is superior to adjuvant radiation alone[8,9]. 5 fluorouracil and cis platin maybe used.

A meta-analysis conducted by the Cochrane collaborative included trials that randomly assigned patients with FIGO stage IB to IVA disease to concomitant chemoradiotherapy versus radiotherapy with or without surgery, and with or without additional adjuvant chemotherapy[9]. The following conclusions were made:

- The use of concomitant chemoradiotherapy improved overall
- The absolute improvement in overall and progression-free survival with concomitant chemoradiation was 16 and 12 percent, respectively.
- Concomitant chemoradiotherapy was associated with a significant decrease in both local and distant recurrence
- A greater beneficial effect was noted in those trials that included a higher proportion of patients with stage IB and II disease.

Adjuvant postoperative radiation alone is recommended for women with two or more of the following intermediate risk factors for recurrent disease[10]:

- Large tumor size
- Deep cervical stromal invasion
- Lymphovascular space invasion

Definitive irradiation and radical surgery are both accepted treatments for stages IA, IB, and IIA cervical cancer. Intracavitary brachytherapy may be administered for stage IA2 disease, while external beam irradiation with concomitant chemotherapy is appropriate for stage IB or IIA disease. The choice of treatment depends upon the treating institution, the oncologists involved, and the general condition of the patient.

Surgery has often been preferred for young women because of the desire to preserve ovarian function. However, in some reports, normal ovarian function following ovarian transposition is preserved in only 50 to 60 percent of women not receiving postoperative adjuvant radiation, and in a smaller percentage of those receiving adjuvant radiotherapy[11,12]. In contrast, close to 90 percent of women whose ovaries are left in the pelvis maintain normal hormonal function. Radical trachelectomy is another alternative to hysterectomy for women with early stage lesions who wish to preserve fertility. With this procedure, the cervix is resected with placement of a cerclage so that the uterus and its function can be preserved. Radical trachelectomy is performed by a combined laparoscopic or open therapeutic lymphadenectomy and transvaginal approach for radical resection of the cervix.

At least five controlled trials and a meta-analysis have demonstrated the superiority of combined chemotherapy plus radiation over radiation alone in women with advanced cervical cancer. These studies have led to the adoption of radiation plus concomitant chemotherapy as the standard of care whenever radiation therapy is administered for the treatment of women with cervical cancer, over a broad spectrum of disease stages[13,14].

REFERENCES

1. Muia Ndavi P, Mwalali PN, Mbugua SE. Cervical cytology in a Kenyan rural population J obstet/ Gynecol East Central Afric 1984; 3: 167-170.

2. Parkin DM, Pisani P, Ferlay J. Global cancer statistics. CA Cancer J Clin 1999; 49: 33.

3. Sasieni PD, Cuzick J, Lynch-Farmery E. Estimating the efficacy of screening by auditing smear histories of women with and without cervical cancer. The National Co-ordinating Network for Cervical Screening Working Group. Br J Cancer 1996; 73: 1001.

4. Womack C, Warren AY. Achievable laboratory standards; a review of cytology of 99 women with cervical cancer. Cytopathology 1998; 9: 171.

5. Benedet JL, Bender H, Jones H, 3rd et al. FIGO staging classifications and clinical practice guidelines in the management of gynecologic cancers. FIGO Committee on Gynecologic Oncology. Int J Gynaecol Obstet 2000; 70: 209.

6. Inoue T, Morita K. The prognostic significance of number of positive nodes in cervical carcinoma stages IB, IIA, and IIB. Cancer 1990; 65: 1923.

7. Metcalf, KS, Johnson, N, Calvert, S, Peel, KR. Site specific lymph node metastasis in carcinoma of the cervix: Is there a sentinel node?. Int J Gynecol Cancer 2000; 10: 411.

8. Peters WA III, Liu PY, Barrett RJ II et al. Concurrent chemotherapy and pelvic radiation therapy compared with pelvic radiation therapy alone as adjuvant therapy after radical surgery in high-risk early-stage cancer of

the cervix. J Clin Oncol 2000; 18: 1606.

9. Green JA, Kirwan JM, Tierney JF, Symonds P. Survival and recurrence after concomitant chemotherapy and radiotherapy for cancer of the uterine cervix: a systematic review and meta-analysis. Lancet 2001; 358: 781.

10. Sedlis A, Bundy BN, Rotman MZ et al. A randomized trial of pelvic radiation therapy versus no further therapy in selected patients with stage IB carcinoma of the cervix after radical hysterectomy and pelvic lymphadenectomy: A Gynecologic Oncology Group Study. Gynecol Oncol 1999; 73: 177.

11. Feeney DD, Moore DH, Look KY et al. The fate of the ovaries after radical hysterectomy and ovarian transposition. Gynecol Oncol 1995; 56: 3.

12. Anderson B, LaPolla J, Turner D et al. Ovarian transposition in cervical cancer. Gynecol Oncol 1993; 49: 206.

13. Peters WA III, Liu PY, Barrett RJ II et al. Concurrent chemotherapy and pelvic radiation therapy compared with pelvic radiation therapy alone as adjuvant therapy after radical surgery in high-risk early-stage cancer of the cervix. J Clin Oncol 2000; 18: 1606.

14. Keys HM, Bundy BN, Stehman FB et al. Cisplatin, radiation, and adjuvant hysterectomy compared with radiation and adjuvant hysterectomy for bulky stage IB cervical carcinoma. N Engl J Med 1999; 340: 1154.

GYNECOLOGY CASE NO 7

IMPERFORATE HYMEN, CRYPTOMENORRHOEA, HAEMATOCORPUS AND CRUCIATE INCISION.

Name:	E.A.	Parity:	0+0
Age:	15 years	DOA:	8-8-02
IP No:	0826248	DOD:	11-8-02

PRESENTING COMPLAINTS

The patient was admitted through casualty into acute gynaecology ward complaining of lower abdominal pains for 5 days and progressive lower abdominal swelling for 5 months.

HISTORY OF PRESENTING ILLNESS.

The patient first noticed lower abdominal swelling 5 months ago and it was progressively increasing in size. It was associated with recurrent lower abdominal pain every month. The lower abdominal pains were worsened by passing stool or urine. She had no freguency or urine incontinence.

OBSTETRIC AND GYNAECOLOGICAL HISTORY.

She had not attained her menarche and was still a virgin.

PAST MEDICAL AND SURGICAL HISTORY.

She had no previous admission history or surgical condition.

FAMILY AND SOCIAL HISTORY

She was the first born in a family of 4 siblings. She lived with her parents at Athi River. The mother was a housewife and the father a driver. There was no history of chronic illness in the family.

PHYSICAL EXAMINATION

She was a young girl in good general condition. She was not pale or jaundiced and no peripheral lymphadenopathy. Her temperature was normal at 36.6^{0}C, blood pressure was 100/60mmHg and the pulse rate was 76 per minute, regular and of good volume.

CENTRAL NERVOUS, CARDIOVASCULAR AND RESPIRATORY SYSTEMS

These were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was examined after she was asked to void urine. The abdomen was distended uniformly suprapubically and was moving with respiration. The liver and the spleen were not palpable. There was a suprapublic mass corresponding to a fundal height about 16 weeks and it was tender. The mass had smooth surface wast soft.

PELVIC EXAMINATION

The vulva was well developed. Vaginal examination was not possible as there was a bluish cystic mass, which was bulging at the vaginal introtus. The hymen was intact. A rectal examination was done and a mass was felt anteriorly which was soft, boggy and tender. Further pelvic examination was not possible due to tenderness.

DIAGNOSIS

A diagnosis of cryptomenorrhoea with haematocorpus and haematometra due to imperforate hymen was made.

INVESTIGATIONS AND RESULTS.

Haemogram:

Haemoglobin	-	13.2g/dl
WBC	-	$6x10^9/1$

Urea and Electrolytes:

Na+	-	132mmol/l
K+	-	4.2mmol/l
Urea	-	3.2mmol/l

MANAGEMENT

The patient was prepared for cruciate incision of the hymen under general anaesthesia. Consent for the operation was obtained from the mother as she was under age.

OPERATION

The patient was taken to theatre on 21-6-00 through the acute gynaecological theatre list. She was shaved, cleaned and an intravenous line with normal saline started. Premedication with 0.6mg atropine intramuscular was given half an hour before theatre.

Under general anaesthesa the patient was put in lithotomy position. Vulvo-vaginal toilet was done and draped. Aseptic catheterization was done and 200mls of clear urine drained. A cruciate incision was made on cystic swelling at the vaginal introitus from 2 o'clock, to 8 o'clock and from 10 o'clock to 4 o'clock, taking care not to cut vaginal wall. About .1.5 litres of dark viscous altered blood was drained and the abdominal swelling subsided. The hymenal tags were trimmed all round and vulval pad applied. Anaesthesia was reversed and patient wheeled back to the ward.

POST-OPERATIVE MANAGEMENT

She was observed half hourly till she was fully awake, then 4 hourly noting the blood pressure, pulse, respiratory and temperature. She was started on oral amoxycillin 500mg three times day for one week on diclofenac sodium 500mg three times daily for a week. The following day she was not bleeding and her vital signs were normal. She was discharged home to come for review at the gynaecology clinic after 6 weeks.

FOLLOW-UP

She turned up as per the appointment and at this time she had one menstrual period, which lasted four days and was not painful. On examination the uterus was normal size and vaginal canal was normal with no stenosis at the introitus. The patient was reassured and discharged from clinic.

DISCUSSION

Hymen is a thin mucous membrane sometimes cribriform in appearance and is at the junction of sinovaginal bulbs with urogenital sinus during the embryonic period. It is composed of endoderm from urogenital sinus and derived from mullerian duct. Hymen is usually perforated during the embryonic life to establish a connection between the vaginal canal and vaginal vestibular. The hymen may persist if the centrally placed epithelial cells do no degenerate and produce the expected lumen and is called imperforate hymen (1-3).

Although variations in hymen development may occur, complete blockage by hymen of vaginal orifice is rare (2). Most patients with imperforate hymen will present at 13 to 15

years of age when symptoms being to appear (1-4). The symptoms are due to the accumulation of menstrual blood. Haematocolpos and haematometra is accumulation of menstrual blood in vaginal and uterus respectively. Cryptomenorrhoea is concealed menses (1-3).

When the intrauterine pressure reached a certain point, retrograde passage of blood into the tubes can cause haematosaphnix. Associated adhesions at fimbrial ends of tubes may seal them so blood do not enter peritoneal cavity though in some cases blood passes freely into peritoneal cavity forming haemoperitoneum (2).

Most common symptoms of vaginal overdistension are lower abdominal pains, discomfort low back pain. Pain is aggraviated by passage of stool and urine. Cramp like pains in suprapubic area together with urologic sysmptoms of dysuria, frequency and urgency may eventually develop. A tender mass often palpable suprapubically results from uterine enlargement and bladder distension. If the haemoperitonium occurs, the free blood may cause signs and symptoms of peritonitis (1,4,5).

The great distensibility of the vagina probably protects imperforate hymen from abnormal retrograde menstruation (1). Protrution of hymen is usually visible.

The patient present had symptoms of distended vagina and uterus and urologic symptoms. She had a pelvis mass which was vagina and uterus distended by accumulation of menstrual blood. If an imperforate hymen is noticed before puberty, the condition can be treated when it is entirely asymptomatic. Management of the condition is composed of simple incision of hymenal membranes at 2 to 8 and 4 to 10 o'clock position. To prevent scarring and stenosis which result in dyspareunia, the hymenal tissue should not be excised too close to vaginal mucosa. The haematocolpos fluid should be allowed to drain spontaneously though aspiration with vacuum extractor can be done (5).

All unnnecessay intrauterine instrumentation should be avoided because if haematometra had developed there is risk of perforating the thin overdistended uterine wall (1). Vaginal examination is also avoided as the risk of introducing infection is very high and prophylactic antibiotics are also indicated for one week (5). If uterine mass does not regress within 2-3 weeks, inspection and dilatation of the cervix should be performed to make sure that drainage from uterus is satisfactory (1). Follow up is important and

pelvic examination later to ascertain the state of vagina and uterus. This was done in our patient.

The imperforate hymen has to be differentiated from a transverse vaginal septum, which may occlude the vagina at various depth and vagina atresia (2,6). The outcome of a patient with imperforate hymen is good. Fertility and normal menstrual cycles are maintained in almost all cases (5). Other anomalies associated with imperforate hymen include unrinary tract anomalies (1,6).

REFERENCES

1. Rock, J. A., Horowitz, I. R. Surgical conditions of vagina and urethra. Te Linde's Operative gynaecology, 8th ed. 1997;Lippincott-Raven Publishers, 36:911.

2. Tindal, V.R. Congenital malformations and developments of genital tract. Jeffcoate's Principal of gnaecology, 5th ed. 1987; Butterworth scientific publishers, 10:138,

3. Muran, D. Paediatric and aolescent gnaecology. Current Obstetrics and Gynaecologic Diagnosis and Treatment, 8th ed., 1994; 31:633.

4. Dewhurst, J. Normal and abnormal development of genital organs. Dewhurst's Textbook of obstetrics and gynaecology for postgraduates, 4th ed.,1988; Blackwell Publishers, 1:1.

5. Varma, T. R. Formation of urogential system, imperforate hymen. Clinical Gynaecology, 1st ed. 1991; 4: 96.

6. Rock, J. A. Zacur, H.A, Alexander, M. D. Pregnancy success following surgical correction of imperforate hymen and complete. Am.J. Obstet. Gynaecol. 1982 59:448.

GYNECOLOGY CASE NO 8

ACUTE PELVIC INFLAMMATORY DISEASE (PID) - ANTIMICROBIAL THERAPY

Name: L.K.

Age: 23 years

IP. No.: 0815881

DOA: 15/06/2002

DOD: 17/06/2002

Diagnosis: Acute PID

PARITY: 1 + 0

Presenting Complaints:
The patient had had lower abdominal pains and vomiting over a period of 3 days.

History of presenting illness:
She had insidious onset of lower abdominal pains which were persistent in nature, radiated to the back and had no relieving factors. She had episodes of vomiting precipitated by feeding. She had constipation with tenesmus and subsequently passed hard pellets of stool.
The patient denied having had any abnormal per vaginal discharge or bleeding and she had normal micturition habits.

Obstetric and Gynaecologic History:
She was a para 1 + 0 whose last delivery was in 1999, with the baby having been alive and well. The last menstrual period was sometime in August, 2001 and she had been on Medroxyprogesterone acetate (Depoprovera) from 2001. She initially had regular menses, having had her menarche at the age of 14 years.

Past Medical History:
She had completed the initial phase of treatment for Mycobacterium tuberculosis with 800mgs of ethambutol and 5 tablets of rifater and was on the continuation phase of 5 tablets of rifater alone. She reported having had marked improvement on this treatment.

Family and Social History:
She was married , unemployed and never drank alcohol. She also did not smoke cigarettes. The husband had a small scale business of selling second hand clothes.

Drug: She had no known history of allergy.

Systemic Enquiry:
There was no abnormality.

General Physical Examination:
The patient was sick looking and seemingly in much pain. She was not pale, was febrile and had no jaundice. The temperature was 38°c and the pulse rate 141 per minute and regular. The blood pressure was 110/70 mmHg, while the respiratory rate was 22 per minute.

Abdominal Examination:
The abdomen appeared flat with marked tenderness and guarding at the hypogastrium. There were no abnormal masses.

Vaginal Examination:
The external genitalia appeared normal. There was mucoid, yellowish foul smelling vaginal discharge. Cervical excitation test was positive with marked adnexal tenderness. Bimanual palpation was not possible due to the tenderness. Endocervical swab was taken for microscopy, culture and sensitivity.

Other Systems:
These were essentially normal.
Diagnosis:
Acute pelvic inflammatory disease.

Management:
1. Haemogram:
   WBC - 9.6 X 10 g /l
   Hb - 10.2g Ldl
   Platelets - 225x10 g/l
2. Urea , Electrolytes and creatinine
   - Na + 140
   - K+ 4.6 } mmol/l
   - BUN 4.0
   - Creatinine 085 Umol/l
3. Pregnancy test - Negative.
4. Pelvic ultrasound scan - this was not done.
5. Endocervical swab - No growth obtained.

The patient was started on 2 mega units of intravenous crystalline penicillin 6 hourly, 80mgs of intravenous gentamicin 8 hourly and 500mg of intravenous metronidazole (flagyl) 8 hourly. She was also given oral doxycycline in adose of 100mg twice a day.
For pain relief the patient was given oral diclofenac. After 48 hours, she was afebrile and the abdominal pains had reduced markedly. She was discharged home on oral metronidazole, diclofenac and ciprofloxacin with instruction that she should report back for review at the gynaecology

outpatient clinic after one week. She had recoved fully when she was seen at the clinic.

Discussion:

L. K was a 23-year-old para 1 + 0 who was admitted with severe lower abdominal pains and incidentally found to have foul smelling per vaginal discharge. The diagnosis of acute pelvic inflammatory disease was most likely appropriate, although the results of the microbiological tests done on the endocervical swab were never obtained.

Pelvic inflammatory disease (PID) is a general term commonly used to describe an infection process of the upper genital tract. The infections of the upper genital tract most commonly involve the fallopian tubes (salpingitis), but the endomentrium and the ovaries are generally involved as well(endometritis,parametritis,salpingitis and oophoritis). The disease process can be divided into acute and chronic forms (1). Our patient had acute PID.

Acute PID is usually a consequence of infection with gonococcus and chlamydia. Other microorganisms that can cause it are aerobic Streptococcus, Staphylococcus Pyogenes, Escherichia coli, Mycoplasma hominis, Ureaplasma urealyticum and even tubercle bacilli. Most cases of PID are the result of a polymicrobial infection caused by microorganisms ascending from the vagina and cervix to infect the mucosa of the endometrim and fallopian tubes. It is at times difficult to determine which of the organisms isolated from the endocervix is responsible for the ongoing episode of acute PID. (2). Fomulu found a polymicrobial pattern at the Kenyatta National Hospital, with Escherichia coli occurring in 30% of cases of pelvic infection. (3), but Cartley (1972) found at the same hospital that gonoccus was found in 75% of patients with PID, 4% of these having had pelvic abscess (4). Chow and Manif postulated that gonococcus initiates acute PID and produces tissue damage that changes the local environment to allow aerobic and anaerobic organisms from the vaginal and cervical flora to enter the upper genital tract . Esheribach and sweet have, however, suggested that not all PID follows gonococcal infection and that acute PID may initially have a polymicrobial aetiology (2).
Overally, acute PID occurs in about 1% to 2% of young, sexually active women each year.

Predisposing factors to the occurrence of acute PID include multiple sexual partners, use of intrauterine contraceptive device (IUCD), previous PID that was not well treated or untreated, nulliparity and HIV infection. Age is also a factor and the incidence of PID decreases with age, 70%, of the patients being younger than 25 years. Our patient was 23 years old. Surgical procedures that break the cervical mucus barrier like placement of intra-uterine centraceptine device, endometrial biopsy and curretage, hysteroscopy and hysterosalpingography have also been implicated. Abortion is also known to be a risk factor (6). At the Kenyatta Hospital, PID has been found to be commonest in those below 20 years and follows abortion in 18.2% of the patients. (3) Given that tuberculosis is a disease commonly associated with

immunosupression, chances that our patient was HIV-positive could not be ruled out, but she was not tested for HIV.

Oral contraceptives have been thought to reduce the risk of PID and it is probable that the progestin component makes the cervical mucus thicker thereby inhibiting sperms and bacteria from penetrating into the upper genital tract. (2).

The diagnosis of acute PID is usually clinical. The patient presents with lower abdominal pains, cervical motion tenderness and adnexal tenderness. There may also be fever, cervical or vaginal discharge and leukocytosis. Jacobson and Westrom have reported that lower abdominal pain, pelvic pain , fever and leukokcytosis are present in only 15 - 30% of actual PID cases. (2) Pain in the lower abdomen and pelvis is present in more than 90% of patients at initial presentation. The pain is usually described as dull and accentuated by motion or sexual activity and is usually of recent onset, most likely one week or less. Up to 75% of acute PID are associated with endorcervical infection and coexistent purulent vaginal discharge, but nausea and vomiting are relatively late sysmptoms. Abnormal vaginal bleeding, especially menorrhagia or spotting may occur in upto 40% of the patients. Perihepatic inflammation and adhesions, more commonly known as Fitz - Hugh - Curtis syndrome, develop in 1 - 10% of the patients with acute PID. The patient may have right upper quadrant pain, pleuritic pain, and tenderness in the right upper quadrant when the liver is palpated. It is believed to develop from vascular or transperitoneal dissemination of either N. gonorrhea or chlamydia trachomatis to produce the perihepatic inflammation. Other organisms may be involved. Despite the short coming of diagnosis, laparoscopic visualization of the pelvis is still the most accurate method of confirming the diagnoses of acute PID .

It is even more important in the exclusion of other diagnosis and surgical emergencies. The appearance of the pelvic organs can vary from erythematous, indurated, edematous oviducts, pockets of purulent material, to a large pyosalpinx or tubo ovarian abscess. (2, 6).

Other less invasive methods of diagnosis exist. For instance, Pavonen and associates reported 90% correlation between histologic endometritis and laparoscopically confirmed salpingitis. A delay of 2 - 3 days may result in limited clinical application of this method. Ultrasound scan of the pelvis may be useful to rule out other causes of pelvic disease such as acute appendicitis, adnexal masses & ectopic pregnancy.(2).

Culdocentesis may be performed and a WBC count of >30 x 10 3/ml would suggest acute PID. The normal level is < 1000 cells per ml. (1,2,3)

The sequelae of acute PID can be devastating and include infertility, ectopic pregnancy, chronic pelvic pain, residue of infection and , rarely, mortality which could be as a result of adult respiratory distress syndrome (ARDS) due to severe infection. This calls for prompt and effective treatment whose goal should be to eliminate the acute infection and symptoms in addition to preventing the long term sequelae of infection and , rarely, mortality which could be as a result of adult respiratory distress syndrome (ARDS) due to severe infection. This calls for prompt and effective treatment whose goal should be to eliminate the acute infection and symptoms in addition to preventing the long term sequelae.

Based on the consensus that PID is polymicrobial in cause, empirical antibiotic protocols should cover a wide range of microorganisms, including N-gonorrhoea, Chlamydia-trachomatis, anaerobic rods and cocci, gram negative aerobic rods, gram - positive aerobes, and Mycoplasma species. Controversy exists over the issue of outpatient treatment with oral antibiotics versus inpatient treatment with parenteral antibiotics. Our patient was initially treated on an inpatient basis and allowed home on oral medication.

The treatment of acute PID should include that of the male partner and education for the prevention of infection, including the use of proper contraceptive methods to avoid unwanted pregnancies.

The patients whose PID are complicated by abscess formation may need surgical intervention which may be laparoscopic or by laparotomy. Percutenous drainage uder sonographic or CT - Scan guidance may also be helpful. (1,2).

REFERENCES:

1. Precis III, An update in obstetrics and Gynecology.
   Pelvic infection Pg. 171 - 179.
   American College of Obstetricians and Gynaecologists 1986.
2. Martens MG
   Pelvic inflammatory disease In: Te Linde's operative gynecology: 8th ed. Lippincot - Raven, Philadelphia 1997 Pg 657 - 685.
3. Formulu J. N.
   Post abortal sepsis and pelvic abscess at the Kenyatta National Hospital.
   MMed Thesis, University of Nairobi, 1991.
4. Cartey M. J. Nzioki JM, Verhagen A.R.
   The role of gonococcus in acute pelvic inflammatory disease in Nairobi.
   East Afri. Med. J. 49:376, 1972.
5. Mugo R.
   The social , demographic and bacteriologic profile of women with pelvic inflammatory diseases and their sexual partners.
   MMed thesis, University of Nairobi, 1997.
6. Aral S.O, Mosher W.D. , Cates W.
   Self reported pelvic inflammatory disease in the United States, 1988.
   JAMA 1991, 26:2570 - 2573.

GYNAECOLOGY CASE NO 9

BARTHOLIN'S CYST - MARSUPULIZATION

Name: D.W. Age: 35 years
IP No.: 0819189 D.O.A.: 2.7.02
D.O.D.: 2.7.02

PRESENTING COMPLAIN
She came with swelling on the genitalia for a period of 3 months

HISTORY OF PRESENTING COMPLAIN
She was well until three months ago when she started having a swelling on the right side of the genitalia. It was progressive and increasing in size and was itchy. There was no vaginal bleeding, or discharge. There was no dysuria or frequency

OBSTETRIC AND GYNAECOLOGICAL HISTORY
She is a para 3+0. Her previous delivery were as follows: 1989 caesarian section done at Pumwani Hospital due to transverse lie to a live male infant who is alive and well. In 1992, she had a spontaneous vertex delivery to a live female infant who is alive and well. In 1998, she had a spontaneous vertex delivery to a live female infant who is alive and well.

Her last menstrual period was on 15.6.02. She has used copper T since 1999. Menarche was at 14 years. Menses are regular coming every 28 days lasting 5 days.

FAMILY AND SOCIAL HISTORY
She is married and attained form four level of education. She is a housewife and does not smoke or drink alcohol. Her husband is a driver. There is no family history of chronic illness.

PAST MEDICAL HISTORY
This was not significant

PHYSICAL EXAMINATION
She was in good general condition, not pale, no jaundice. Blood pressure was 140/80mmHg, pulse rate 82/minute, temperature was 36.8°C.

ABDOMINAL EXAMINATION
The abdomen was uniformly distended with a sub-umbilical healed midline scar. There were no organomegally, no masses felt.

VAGINAL EXAMINATION
There was swelling of the right vulva which was rounded, firm and non tender. The cervix was posterior, firm and the uterus normal in size and mobile, adnexae was normal. There was no vaginal discharge or bleeding.

DIAGNOSIS
A diagnosis of right-sided Bartholin's cyst was made

MANAGEMENT
She was for marsupulization. The following investigations were done:
Haemoglobin - 11g/dl

Urea and electrolytes- Na˚ 137/mmol/l
K˚ 49mmol/l
BUN 28mmol/l

She was told about the treatment and written consent was obtained. She was on nil by mouth from midnight and to come in the morning to the hospital as a day case.

She came to hospital in the morning at 8.00a.m and was wheeled to theatre after premedication with atropine 0.6mg and pethidine 50mg.

In theatre she was put in supine position and general anaesthesia induced. She was then repositioned in lithotomy position, cleaned and draped. Examination revealed right Bartholin's cyst. A linear incision was made at the junction of the mucus epithelium and the keratinized epithelium.

Approximately 40mls of gelatinized clear fluid was drained. The edges of the incision were marsupulized using 2/0 chronic catgut. No active bleeding was seen. General anaesthesia was reversed uneventfully and she was wheeled to theatre. She was discharged home on amoxil and brufen for review in the clinic in two weeks time.

FOLLOW UP

She was seen in the clinic on 16/7/02 where she was found to have no major complain. The cyst had not recurred and the site of incision had healed. She was discharged from the clinic.

DISCUSSION

D.W. presented with Bartholin's gland cyst for which marsupilization was done with good results.

Bartholin's glands are a pair of small compound structures that are situated beneath the vestibule on each side of the vaginal opening. Each gland is about 0.5cm-1cm in diameter with a duct 1.5cm-2cm long that open near the opening of the vagina.

The glands are important for sexual function. During sexual arousal they produce a mucoid material which acts as a lubricant (10.

Obstruction of the main duct results in cystic dilation and retention of secretion. This is mainly caused by infection but can be caused by insipissated mucous, congenital narrowing or trauma (2). Infection of the gland leads to abscess formation.

Most abscesses have mixed aerobic and anaerobic pathogens, some have one pathogen and in a number no pathogen is isolated (3). Those with single infection normally have Neiserria gonorrhea or chlamydia trachomatis (4).

Trauma may result from a median episiotomy or anterior colporraphy (1). Our patient had no history of trauma. Previous history of Bartholin's abcess is not always elicited.

Two types of cysts are identifiable by microscopy - ductal cysts and gland cysts as seen by the lining epithelium. Batholin's cysts are usually small and asymptomatic. Diagnosis is usually made during routine pelvic examination (5). Symptoms may occur

if the gland gets secondary infection or if the gland grows rapidly. D.W. did not have pain but had a rapidly growing cyst (5).

Several techniques have been proposed for the management of Bartholin's gland cyst. During acute infection, incision and drainage may be done. However, recurrence is common (1,5). Another method is insertion of a ward catheter. These two methods are not practiced in our unit.

Marsupilization is done whether the gland is infected or not and it preserves the secretory function of the gland. During the procedure, a wedge shaped vertical incision is made on the vaginal wall at the centre of the cyst. Opening of the cyst wall and draining of its contents follow this. The walls of the cyst are then evented and sutured to the vaginal wall using number 2/0 delayed absorbable sutures. Sitz baths from the 3rd post-operative day are recommended. This procedure was procedure was performed on our patient with good results. Recurrence following marsupilization is 10-15% (5).

Definative treatment is excision of the cyst but would no be done if there is infection due to high chances of developing haemorrhage or wound breakage.

A study of Mumia showed that Bartholin's abcess accounts for 1.7% of emergency gynaecological admissions in Kenyatta National Hospital (6).

Occasionally, Bartholin's gland may be the site of adenocarcinoma, 10% of those with carcinoma had history of previous inflammation.

REFERENCES:

1. Tindall V.R.: Tumours of the vulva: Jeffcoates Principles of Gynaecology, 5th edn. Butterworths and Co. Ltd. London p 383, 1987

2. Aghajamain A., Bernstein L., Gynmes D.A.: Bartholin's duct abscess and cyst: A case control study: South Med J. 1994; 87:26

3. Lee V.H., Ranken J.S., Alpert et al.: Microbiological investigations of Bartholin's gland abscess and cysts. Am. J. Obstet Gynecol 1977:129:150

4. Saul H.M., Grossman M.B.: The role of chlomydia trachomatic: In Bartholin's Abscess Am. J. Obstet Gynecol 1988: 158:76

5. Barclay D.L.: Benign disorders of the vulva and vagina: In: Pernoll M.L. (ed) Current Obstetric and Gynaecological Diagnosis and Treatment 8th edn. Appleton and Lange Connecticut p 693 1994

6. Mumia S.: Bartholin's abscess at Kenyatta National Hospital. M.med Thesis University of Nairobi.

GYNECOLOGY CASE NO 10

RUPTURED ECTOPIC PREGNANCY - RIGHT PARTIAL SAPHINGECTOMY

Name:	M.N.	Age:	27 years
IP no.:	0806453	Parity:	1+0
L.M.P.:	8.5.02	Amenorrhea:	8 weeks
D.O.A.:	4.7.02	D.O.D.:	9.7.02

PRESENTING COMPLAINS

M.N. was admitted to the acute gynaecological ward from home through Casualty with complains of severe abdominal pain and vaginal bleeding for one day.

HISTORY OF PRESENTING COMPLAIN

She was well until one month ago when she started having slight lower abdominal pain on the right side that was radiating to the back and worse on lying on that side.

She then started having spotting one week prior to admission. The pain increased 4 hours prior to admission with increased vaginal bleeding. She did not vomit or have diarrhea. She had no history of previous vaginal discharge or dysuria.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was para 1+0. Her last delivery was in a spontaneous vertex delivery to a life male infant in 1998. Her menarche was at the age of 16 years. Her menses were regular and coming every 28 days and lasting 3 to 4 days.

She has not used any contraceptive method. Her LMP was on 8.5.02 and she had an amenorrhoea of 8 weeks.

PAST MEDICAL AND SURGICAL HISTORY

She did not have any significant past history.

FAMILY AND SOCIAL HISTORY

She was married with one child. Her husband works as a technician in a factory in town. She does not smoke cigarette or drink alcohol. Her husband drinks alcohol (beer). There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was a young lady in fair general condition. She was afebrile with moderate palor, no jaundice or oedema. Her blood pressure was 110/60mmHg, pulse 100/minute, temperature 36.8° C and respiratory rate of 20/minute.

ABDOMINAL EXAMINATION

The abdomen was slightly distended and moved with respiration. It was soft with tenderness over the right iliac fossa and supra pubic area. There was no organomegally or other palpable mass. Paracentesis was positive for non-clotting blood.

VAGINAL EXAMINATION

She had normal external genitalia. The uterus was bulky and cervix was posterior. The pouch of Douglas was full and there was a tender mass in the right adnexa with positive cervical excitation. Examination finger was blood stained.

DIAGNOSIS

A tentative diagnosis of right ruptured ectopic pregnancy was made

INVESTIGATION

PDT - negative

MANAGEMENT

M.N. was prepared for emergency laparatomy. The patient was informed of the diagnosis and mode of management. Informed consent was obtained, a

blood sample taken for grouping and cross matching. Premedication IM atropine 0.6mg ½ before theatre was given.

In theatre, the patient was put in semilithotomy position and vulvo vaginal toilet done. After general anaesthesia was induced, clean urine, 30mls was drained after catheterization. She was put in supine position, cleaned and draped. The abdomen was opened in 3 layers via a Pfanestein incision.

Haemoperitoneum of a 600mls of blood was found . Right ruptured ampulary pregnancy was found and right partial salphingectomy done. This was done by clamping both end of ectopic pregnancy and ligating and excision of pregnancy. The specimen was taken for histology.

The right ovary, left tube and ovary were found normal. The uterus was bulky. The appendix was also found normal. The abdomen was cleaned and closed in 3 layers.

Her postoperative recovery was unremarkable. Check Hb was done on the 3rd post operative day, it was 10.2g/dl and she was discharged on the 4th day on oral antibiotics, analgesics and haematinics and to be seen in the clinic in three weeks.

REVIEW

Review after three weeks found that she was well and the wound had healed. She was advised to attend clinic for pre-conceptional counseling and follow up.

DISCUSSION

M.N. presented above had ruptured right tubal pregnancy and partial salphingectomy was done with an uneventful recovery.

Ectopic pregnancy is when the blastocyst implants anywhere else outside the endomterial lining of the uterine cavity (1,2).

Incidence of ectopic pregnancy is about 1 in 100 pregnancies and over 75% are diagnosed before the 12-week. At Kenyatta National Hospital, Webala found an incidence of 1 ectopic pregnancy for every 15 full term pregnancies (3) and Mwathe found 4-5 ectopic pregnancies per week (4).

It is more common in women of low fertility, low socio-economic status and in those with previous ectopic pregnancy: 10 to 20% will have a second ectopic pregnancy. Causes of ectopic pregnancy may either be mechanical or functional. These risk factors include tubal surgery, tubal sterilization, previous ectopic pregnancy, exposure to diethylstillbestrol in utero, infertility, multiple sexual partners, previous pelvic surgery, smoking, intrauterine devices, progestin contraceptives and pelvic inflammatory disease (2).

Pelvic inflammatory disease especially following Chylamydia trachomatis and Neisseria gonorrhea is the commonest cause (2). Webala found evidence of chronic salphingitis in 69% of the cases at Kenyatta National Hospital (3). Other factor include assisted ovulation, either using clomiphine citrate or following in vitro fertilization and/or gamete intra fallopian transfer (2).

Classification of ectopic pregnancy is based on the location, 99% are tubal with 55% being ampullary, 25% isthmic, 17% fimbrial and 2% being intestitial (1). Other sites are ovarian, abdominal and cervical. They may also be heterotrophic and occasionally you may have a pregnancy within a rudimentary horn, intramural or in a uterine diverticulum (1). The patient presented had a right ampulary ectopic pregnancy.

The fertilized ovum promptly burrows in the epithelium of the tube with limited resistance for the trophoblast and at the same time maternal blood vessels are opened (5). The fetus or embryo is often stunted. The uterus undergoes some element of early pregnancy changes. These changes include enlarged epithelial cells, with hyertrophic and hyperchromatic, lobular and irregularly shaped nuclei. The cytoplasm is vacuoted, roomy with occasional mitosis. These changes in the endometrium - aria stella reaction - are not specific for ectopic pregnancy and may occur in normal pregnancies (2).

Termination of the tubal pregnancy may lead to abortion or missed abortion, extratubal rupture or intratubal rupture (1).

Fifty percent of all ectopic pregnancies may abort, get absorbed or become chronic (5).

Interstitial or cornual pregnancy may rupture into the uterine cavity, into the broad ligament (5). Cervical pregnancy may rupture into the cervical canal or into the cavity. Patients with ectopic pregnancy may have diverse manifestation depending on whether there is rupture or not. Most of the time the woman will think she is normally pregnant or not pregnant.

Pain is present in 991 of the cases, this is usually abdominal but may be subdiaphragmatic or shoulder pain due to irritation of the diaphgram by the blood (1). Abnormal uterine bleeding occurs in 75% of the women. This is usually dark and scanty. Secondary amenorrhea (usually less than 2 weeks) may occur. Others may have syncope (1). Findings depend on whether the pregnancy is ruptured or not. Vital signs are normal before rupture. If rupture has occurred, the patient may present in shock (low blood pressure with weak rapid pulse). There may be a pelvic mass, pelvic tenderness with an adenexal mass in 53% of the patients (1).

Culdocentesis may reveal blood (2). Laboratory list include haemoglobin count which may show reduced haemoglobin. There may be leucocytosis of upto 30,000/ml.

¤-HCG (beta-human chorionic ganodotrophin) can be detected bur is usually lower than normal pregnancy levels.

Use of urinary pregnancy list may be positive in only 50-60% of ectopic pregnancies (5). Serum progesterone levels may also be used to rule out ectopic pregnancy with those with levels of greater than 25ng/ml being in less

than 2% of ectopic pregnancies and in 4% of abnormal pregnancies.A progesterone level of less than 15ng/ml is seen in 81% of ectopics,93% of abnormal intrauterine pregnancies and11% of normal pregnancies.

Ultrasound imaging is used in diagnosing with vaginal sonography having a sensitivity and specificity of 96 and 99 percent respectively. Abdominal utrasonography may also be used (2).

If both ▫ HCG and sonography are not conclusive, then serial follow up may be done (2). In some cases, diagnosis may be done through laparoscopy or laparatomy (2).

Laparoscopy is advantageous as it may give a definitive diagnosis and surgical removal may be done.

Curettage of uterus may differentiate between abortion and ectopic. It may show the aria-stella reaction.

Treatment of ectopic pregnancy is usually surgical or medical. Surgical treatment may be conservative or radical. Conservative surgical treatment either may be salphingostomy/salpingotomy (mostly done for Ampula), segmental resection and anastomosis (mostly for isthmus) or fimbrial expression (6). Radical surgical treatment is usually saphingectomy and is usually performed if the tube is heavily damaged (mostly for interstitium) oophorectomy for ovarian and hysterectomy for cervical ectopics (7). Rupture occurs in the order (from frequent) Isthmus-6 to 8weeks,Ampular-8to12 weeks and corneal/interstitial-12 to 16 weeks.

Medical treatment involves use of methotrexate either as definitive treatment or to prevent persistent trophoblast (6). Success rate is higher with small gestation and should be used for pregnancies of 6 weeks and less.
Selection criteria for methotrexate treatment are;
1.Heamodynamically stable

2.No evidence of tubal rupture or significant intr-abdominal heamorrhage

3.Tube less than3-4cm in diameter

4.No contraindication to methotrexate

5.Patient is available to follow up

Other treatment include actinomycin, direct injection of prostaglandin $F_{2\alpha}$ or hyperosmolar glucose.

Anti-D immunoglobin should be given to rhesus negative women (2).

REFERENCES

1. Pernoll M.L., Sara G.H. Early pregnancy risk: In: Current obstetric and gynecologic diagnosis and treatment. Pernoll M.L., Decherney ed. 8th edn. Appleton and Lange: 1994 p 306-330.
2. Cunningham G.T., Gant N.F., Leveno K.J. et al. Ectopic pregnancy In: William's obstetric 21st edn. 2001 pg 884-908.
3. Webala G.S.R. Tubal pregnancies as seen at Kenyatta National Hospital: Rate of PID in its aetiology. M.Med thesis. University of Nairobi 1979.
4. Mwathe E.G. The pattern of ectopic pregnancy at Kenyatta National Hospital. M.Med thesis University of Nairobi 1984.
5. Rock J.A., Damano M.A. Ectopic pregnancy in Rock J.A. Thompson J.D (eds) Te Lindes Operative Gynaecology 8th edn. Lippincott Raven Publisher. Philadephia 1997 p 501.
6. Lipscomb G.H., Stavell T.G., Ling F.W.: Non-surgical treatment of ectopic pregnancy N.E.J.M. 343:1325:2000
7. Tay JI., Mare J., Walker JJ.: Ectopic pregnancy BMJ. 320:916 2000

GYNECOLOGY CASE NO 11

UTERINE PROLAPSE - VAGINAL HYSTERECTOMY WITH ANTERIOR COLPORRHAPHY AND REPAIR OF ENTEROCELE DONE

Name:	T.K.	Parity:	2+1
Age:	42 Years	DOA:	26.9.02
IP No:	0770237	DOD:	2.10.02

PRESENTING COMPLAINS

She was admitted through the gynaecology clinic with a 3-year history of involuntary passage of urine. This was mostly when coughing, lifting heavy objects and any other manourve that increased her intra-abdominal pressure. There was associated lower abdominal discomfort. There was no history of chronic cough or constipation. She was not involved in any duty requiring regular lifting of heavy objects. She gave a history of recurrent urinary frequency and urgency in micturation.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

She was a para 2+1. First delivery was when she was 15 years old by vacuum delivery to a 4kg baby who was alive and well. Second delivery was also by assisted vacuum delivery in 1983. She had an ectopic gestation in 1999. She used coil in between the pregnancies upto the time of operation. Her periods were regular every 28 days lasting for three days. She conceived her first baby before her menarche.

PAST MEDICAL HISTORY

This was not significant.

FAMILY SOCIAL HISTORY

She was a single lady, self -employed with knitting business. She took alcohol moderately, but did not smoke. There was no chronic illness in the family.

PHYSICAL EXAMINATION

She was in good general condition, not pale, jaundiced or dehydrated. There was no pedal edema or palpable peripheral lymphnodes. Her blood pressure was 120/70mmHg, pulse rate 65/min and regular temperature 36.5°C and respiratory rate of 22 per minute.

ABDOMINAL EXAMINATION

She was obese. Had sub-umbilical midline scar. There was no tenderness or organomegaly.

PELVIC EXAMINATION

The external genitalia were normal. The cervix was in the lower third of the vagina but not protruding. There was demonstrable cystocele on vulva-salva menourve but no rectocele. There was evidence of stress incontinence. She also had a left Bartholins cyst.

DIAGNOSIS

A diagnosis of first-degree uterine prolapse, cystocele and stress incontinence was made.

INVESTIGATIONS

Haemogram:	Hb	- 15.0 g/dl
	WBC	- 6.7×10^9/l
	Platelets	- 403×10^9/l

Urea and Electrolyte:

Urea	- 6.1 mmol/l
K+	- 4.2 mmol/l
Na+	- 137 mmol/l
Creatinine	- 61 µmol/l

Pap smear: Adequate smear. No abnormal cells were seen.

The nature of her illness and mode of management was explained to her. She gave an informed consent to undergo surgery. Blood was taken for grouping and cross matching. She was autodonated one unit of blood. On the morning of surgery she was pre-medicated with intramuscular pethidine 50mg and atropine 0.6mg half hourly before theatre.

OPERATION

In supine position she was put under general anesthesia. She was then positioned in lithotomy positions valvo-vaginal toilet was done, draped and catheterized. Examination under anaesthesia confirmed earlier findings.

The labia majora were stitched to the medial aspect of the thighs for adequate exposure. The cervix was grasped with tenaculum and semilunar incision made at the junction of the vaginal mucosa just below the bladder attachment. Blunt dissection was done to push the bladder away upto the level of vesico-uterine pouch. A similar procedure was done posteriorly and rectum pushed away. The utero-sacral ligaments and cardinal ligaments were identified, clamped divided and ligated bilaterally. Bilateral uterine arteries were also identified, clamped, divided and ligated. The peritoneal cavity was then entered both anteriorly at the vesico-uterine pouch and posteriorly at the pouch of Douglas. Traction was applied to the cervix and the broad ligaments with fallopian tube, ovarian vessels and round ligaments identified clamped, divided and ligated sparing the ovaries. There was some difficult on the right side due to adhesions from previous surgery. The uterus was then delivered easily. Further blunt dissection to free the rectum from the peritoneum was done. Marcus stitches both internal and external were then inserted to be tied after closure of the vault. The peritoneum was then closed. The angles of the vaginal vault were closed with vicryl No. 1 and suspended with the pedicles of the cardinal and utero-sacral ligament. A midline incision was then made on the anterior vaginal wall and the flaps of the vaginal walls dissected laterally and the para-urethra and paravesicle fascia was mobilized by blunt dissection. Placation on the lateral margin of the paravesicle fascia and tied at the midline, care was being taken not to injure the urethra by use of a metal catheter in the urethra. Excess vaginal mucosa was excised and

margins approximate in the midline. The vault was then closed. The Bartholins cyst was incised and marsupilization done. The vaginal canal was cleaned with rifocin and packed with gauze soaked in rifocin, which was removed after 24 hours. Continuous urinary drainage was maintained for 48 hours. She was put on intravenous antibiotics.

Postoperative period was uneventful except for painful calf muscles bilaterally with no swelling or tenderness. She was thought to have deep venous thrombosis and was put on heparin infusion at 10,000 iu every 8 hours. Doppler ultrasound was done and no features of thrombosis were present. She was discharged home on oral amoxycillin and ibuprofen to be seen in gynaecology clinic after four weeks.

FOLLOW UP

She was seen in the outpatient clinic after four weeks and did not have any complaints. Speculum examination showed good healing of the vaginal vault and anterior vaginal wall. There was no evidence of prolapse or urinary incontinence. She was to be seen after one year for vault Pap smear.

DISCUSSION

Genital prolapse is a downward or forward displacement of one of the pelvic organs from its normal location. It is associated with loss of fascial and ligamentous support of pelvic organs. Traditionally prolapse has referred to displacement of the bladder (cystocele), urethra (urethrocele), uterus, and rectum (rectocele) (1-4).

Genital prolapse occurs most commonly in multiparous white women. In Kenyatta National Hospital, the incidence is reported at 0.6% (6).

All forms of female genital prolapse are described in reference to the vagina (1). Classification of prolapse is usually graded with scale of 0-3; with 0 referring to no prolapse and increasing with severity so as grade 3 is total prolapse beyond the vaginal introitus.

Female genital prolapse occurs most commonly in multiparous women as a result of childbirth injuries to endopelvic fascia, pelvic floor ligaments, and lacerations of pelvic muscle and those of the perineal body (1,6). However, the prolapse of the uterus can occur in nulliparous women especially when the cervix is congenitally elongated (6). Other factors contributing to genital prolapse include pelvic tumours, sacral nerve disorders, caudal anesthesia, presacral tumour, and fracture of the pelvis, obesity chronic bronchitis, and local conditions such as ascites and large ovarian and uterine tumours (2,6,7). Our patient had two operative vaginal deliveries but she was young and of low parity.

The signs and symptoms of uterine prolapse vary with the degree. With mild prolapse (1st degree), the patient may experience a falling-out sensation or may report that she is sitting on a ball or sensation of heaviness in the pelvis, low backache, lower abdominal pain and vaginal discomfort. In cases of severe prolapse (procidentia, 3rd degree), the cervix and entire uterus project through the introitus and the vaginal is totally inverted. Bleeding may occur from one or more places. Other associated symptoms and signs include urinary incontinence, recurrent urinary tracts infection and constipation (1,5,6).

Prevention measures include intrapartum and postpartum exercises, especially those designed to strengthen the levator and perineal muscle groups (Kegiel exercises) (6). Such exercises often help to improve or maintain pelvic support. Chronic cough, constipation and traumatic deliveries must be corrected or avoided. Estrogen therapy after menopause will help the tone of pelvic musculofascial tissues and thereby prevent or postpone the appearance of cystocele, rectocele and other forms of relaxation (3,4,6).

Specific treatment is both medical and surgical. The medical measures are mainly indicated for young patient, with future desire for child bearing, and in women unfit for surgery. Such measures include vaginal pessaries and tampons, which provide temporary support of the bladder and rectum (2,3,6). The definitive management is surgical.

Most patients with uterine prolapse have other composite lesion e.g. cystocele and urinary incontinence like in our patient. Therefore, vaginal hysterectomy for uterine prolapse should be accompanied with surgical management of a composite operation. This would include repair of actual or potential enterocele, careful anterior colporrhaply to correct the cystocele and stress incontinence and posterior colpoperineorrphy extending well up the posterior vaginal wall to correct rectocele (1,2,4,6). Our patient under went vaginal hysterectomy, repair of enterocele and anterior colporrhaphy.

Complications of vaginal hysterectomy include injury to the bladder, infection of the vault, vault prolapse and haemorrhage. Prophylactic antibiotics are indicated to prevent sepsis. The patient presented did not develop any of these complications.

REFERENCES

1. Wall, L.L. Incontinence, prolapse and disorders of pelvic floor. Novak's textbook of Gynaecology. 12th ed. 1996; William and Wilkins, Philadelphia, **20**:657.

2. Rock, J.A., Thomson J.D. Te Linde's Operative Gynaecology, 9th Ed.1997; Lippicott-Raven, **26**:946-62.

3. Carter, J.E. Risk factors for genital prolapse in non-hysterectomised women around menopause. Results from cross-sectional study in menopause clinics in Italy. Eur. J Obstet. Gynaecol. Report. Bio. 2000; **93**: 135-140.

4. Cater, J.E. Enterocele repair and vaginal vault suspension. Curr. Opin.Obstet. Gynaecol. 2000; **12**: 321-330.

5. Mwalali, P.N.A retrospective survey of genital prolapse at KNH. M.Med Thesis, 1982; UON.

6. Clyde, H., Dorr, I.I. Relaxation of Pelvic support. Current Obstetrics and Gynaecology Diagnosis and Treatment. 8th ed. 1994; Appleton and Lange, Connecticut, **41**:809-830.

7. Tindal V.R. Genital prolapse. Jeffcoate's Principles of gynaecology 5th Ed. 1987;Butterworth and Company, London. **26**:260.

GYNAECOLOGY CASE NO. 12

SEXUAL ASSAULT , EXAMINATION UNDER ANAESHTESIA (EUA) AND REPAIR OF VAGINAL AND PERINEAL TEARS

NAME: S.N.O		DOA:	31/1/2000
IPL NO:	0562192	DOD:	3/2/2000
AGE:	3 years		
SEX:	Female		

PRESENTING HISTORY

The mother, who gave a history of profuse PV bleeding and abdominal pains, brought the child. She said that a known man in the neighborhood had sexually assaulted the child. The child had been playing outside with the peers when the man called her for a sweet and them went with her to his house and sexually assaulted her. The child was brought to the hospital the same day but the time that had elapsed was difficult to tell.

OBSTETRIC AND GYNAECOLOGY HISTORY

This was not significant.

PAST MEDICAL HISTORY

This was not significant.

FAMILY AND SOCIAL HISTORY

She was a 3rd born in a family of four siblings, living with parents at Eastleigh Estate. The parents were small- scale business people. There was no history of chronic illness in the family.

PHYSICAL EXAMINATION

She was a young child who was in pain and was sick looking. She was a febrile and mildly pale. Her dress was soiled with blood, which had also dried on the legs.

Vital signs
- Pulse rate 78/minutes, regular
- Respiratory rate 20/min rate
- Temperature 36.2^{0}C.

The respiratory system, cardiovascular and central nervous systems were normal.

ABDOMINAL EXAMINATION

There was tenderness over the supra-pubic region. There was no distension, guarding or rebound tenderness.

VAGINAL EXAMINATION

The pants were blood stained. Deep perineal lacerations were noted. Old blood on the lacerated areas was noted, but further examination was not possible due to tenderness/soreness of the area.

DIAGNOSIS

A diagnosis of serious genital injury secondary to sexual assault in a minor was made.

MANAGEMENT

Intravenous infusion of normal saline was started. Blood was taken for grouping and cross-match,heamoglobin,HIV screening,VDRL test for syphilis and hepatitis B surface antigen screening. She was prepared for examination under anesthesia and repair of the perineal and vaginal tears. Informed consent was obtained from the mother. Pre-operative preparation was done as described in the introduction.

In theatre, examination under anesthesia was done with the patient in semi-lithotomy position. A nasal speculum was inserted to expose the vaginal walls and the cervix. A vaginal swab was taken for microscopy and culture. Vulva-vaginal toilet was done.

Multiple second-degree perineal tears and torn hymen were noted. Several longitudinal vaginal tears were noted over the lower one third of vagina. The cervix and vaginal fornices were intact. The urethra was intact. Slight sepsis of the perineal tears was noted. Vaginal toilet was done with Betadine then repair of all the tears was done with catgut 4/0. Haemostasis was achieved.

Investigation results.

1. Hemoglobin level was 10.0g/dl
2. VDRL was negative
3. ELISA fro HIV was negative
4. HVS (high vaginal swab - there were few spermatozoa, scanty pus cells, many red blood cell, Acinebacter species were isolated on culture with good sensitivity to drugs.
5. Hepatitis B surface antigen was negative.

The patient was put of Augmentin syrup 228mg two times daily for 5 days. The mother was also advised on twice daily sitz baths with warm salt water and counseling of the mother done. Repeat of HIV test advised after 3 months. She was discharged home on the 2nd postoperative day through GOPC

FOLLOW-UP

She was seen on 6/4/2000, and mother said she had itchiness of the vulva and white vaginal discharge. On inspection, perineal tears were healed and white vaginal discharge was confirmed. A vaginal swab was taken which indicated scanty pus cells and yeast cells. She was started on alternative antibiotics, ampiclox and flagyl and candid B cream. The mother was asked to have the Medical legal forms filled and was to bring the child for review after 6 weeks

On 12/2/2001, the child was seen again. This time she had no complaints and was discharged after repeat HIV test was found to be negative.

DISCUSSION

Sexual assault (rape) is a violent crime directed predominantly against women. Sexual assault is any sexual act performed by one person on another person without that person's consent. Rape is the illegal sexual penetration, but in some jurisdictions, it includes penetration of body by inanimate objects (1,2,3). A child may be seduced by offers of affection or bribes. Date rape is a variant of sexual assault in which the victim accepts a date, but the perpetrator (usually male) subsequently forces coitus on the victim without her consent. Statutory rape is sexual intercourse with a minor. The definition of "minor" varies by state. (3) The patient presented here was a 3-year old girl child and this would be statutory rape. She was seduced by offers of sweets by an adult male known to her and the parents. Legal statutes may categorise sexual assault as forcible, statutory, attempted, carnal knowledge of a juvenile or a crime against nature. Legal codes may categories rape according to the anatomic site of assault (oral, anal or vagina) and according to the degree of penetration (none, slight, or full) (1)

The psychological effect of rape on the victim cannot be predicted according to the degree of penetration or the anatomic site of the assault. Distinctions in the site and extent of sexual assault do, however carry medical importance, since the risk of injury; impregnation or acquisition of sexually transmitted disease will vary according to the specifics of the assault (1).
An accurate detailed history of the assault is essential for proper diagnosis, documentation and treatment (1)

Rape is the most under reported crime in the U.S.A and even in our set-up. Not more than 20% of all sexual assaults are reported to the authorities. Despite such extensive under-reporting, rape is still one of the most rapidly growing of all violent crimes. Rape is more prevalent in urban areas. About 50% of all sexual assaults occur in the victim's own home. More than 80% of sexual assaults occur within the victim's own neighbourhood and more than 50% of the rapists reside in the same neighbourhood. About 20% of the victims are able to identify the rapist by name and another 20% of victims have seen the rapist before the assault (1). At KNH, the peak incidence of the children admitted following sexual assault was in the range of 10-15 years (38.1%) (4)

The patient presented was 3 years old. She was lured by a man known to her and her parents into the neighbourhood where she was sexually assaulted. The man was also residing in the neighborhood.

Forcible rape is a violent is crime and there are two aspects of treatment of the victims. One is prevention of the crime through education of the public and the potential victims and the other is treatment of the victim after the assault has occurred (1)

Medical personnel must remember that rape is a legal term. It is not a diagnosis made by the physician treating the patient. The only statement that can be made by the physician is that there us evidence of recent sexual activity and describe any injuries that may be found. (5)

In the series by Hicks D.J, 8% of the victims had physical injuries and 1% were injured seriously to require hospitalization. However, even if there is no physical damage, there is psychological trauma. The patient who has been sexually assaulted feels markedly tensed up and restless. She is exhausted and her primary emotion at the time is of fear (1,5).

A victim who has survived sexual assault must deal with her feelings of helplessness and worthlessness and it is important that medical personnel approach such patients in a non-judgmental fashion, with an attitude of respect and concern for their well being. (1)

The physician takes a history, complete enough to cover all areas but not including the minute details of the incident. A brief description of the assault indicates areas for medical investigations and treatment, recounting the event is often frightening for the patient and a complete description may have to be deferred until immediate needs have been met. (3)

The physician must also obtain a detailed gynecologic history to fully evaluate the risks of impregnation and acquisition of sexually transmitted disease. History on last menstrual period, use of a contraceptive and about the time of pervious coitus in those rape victims of reproductive age-group, helps in determining the risk of pregnancy and in establishing the validity of sperm testing (1,3). The patient presented was at risk of acquisition of sexual transmitted disease but not pregnancy.

The patient's activities in the interval between the assault and the examination (whether she has eaten, drunk, bathed, douched, voided or defecated) must be recorded as they might affect findings on physical examination. (1)

The physician then examines the patient and carefully documents the location, nature and extent of external trauma (ecchymosis, abrasions, lacerations, bite marks, rope burns). If possible and with the permission of the patient, these lesions should be photographed (1)

The patient should then be examined on the area of specific injury (assault) and specimens collected. Lubricating jelly should not be used because it will interfere with forensic tests. Relevant areas of the patient's body should be examined with ultraviolet or Wood's light as dried seminal fluid will fluoresce. (1)

Saline moistened filter paper should be used to blot each examined area and filter paper specimen from each area packaged separately. Scrapping should be taken from underneath the victim's fingernails. The pubic hair if any, should be combed for foreign material and the comb and specimens then packaged together (1). This was not done on the patient, as she was a minor.

Meticulous inspection of the perineum and vulva for ecchymosis, abrasions and lacerations should be performed and careful a diagram made. The walls of the vagina fornices must be carefully inspected for trauma. The patient should never be coerced into or restrained for an examination. When indicated, it may be preferable to perform the examination in the operating room with the patient under anesthesia (1). The child presented was examined under general anesthesia, as the area was sore.

The speculum must be moistened only with saline. Non-absorbent cotton swabs should be used to sample fluid from the vaginal pools and should be placed in sterile glass tubes. Air-dried non-fixed smears of this same fluid should be placed on glass slides. 2mls of normal saline is injected into the vaginal vaults, re-aspirated and examined for the presence of sperms (they remain motile in vagina for 4-6 hours). A pap smear (papanicolaou smear) taken from the cervix will provide a permanent record of the presence of sperms. In addition, culture material from the endo-cervicl canal should be performed for gonorrhoea. A high vaginal swab was done in the patient presented when she was taken for EUA. It revealed few spermatozoa, scanty pus cells, many blood cells and Acinebacter species of bacterial.

Blood should be taken for blood group, HIV and VDRL. If there's possibility of pregnancy at the time of assault, levels of beta HCG should be determined (1). Hepatitis B testing should also be done. All tests should be repeated at 6 weeks and 6 months (3). Proper proceeding, labeling of collected specimens is crucial. The specimens must be completely sealed until they are received by the law enforcement agency (police). It is essential to preserve the "chain of evidence" if the specimens are to be varied in court (3). The above tests except the pregnancy test were done for the patient presented.

Treatment of physical injuries sustained at the time of assault, should be initiated immediately, prophylactic medical treatment may be indicated for prevention of pregnancy or sexually transmitted infections. The potential for acquiring sexually transmitted infections is increased when sexual contact during the episode is extensive or there are multiple disease (gonorrhoea, chlamydia, syphilis, hepatitis, HIV), prophylaxis consists of ceftriaxone 250mg 1.m as a single dose, metronidazole 2g orally as a single dose and doxycycline 100mgBID for 7 days for adults is advised. Other protocols utilize penicillin (1,3). If HIV test is positive, treatment with antiviral therapy should be

instituted (3). The child presented was given antibiotic prophylaxis with Augmentin and Metronidazole.

Hormonal contraceptive prophylaxis for pregnancy may be used within 72hours of the assault. These are 95-98% effective. These regimens include morning after contraceptive (postinor)-one tablet taken immediately and another one repeated after 24 hours, two tablets of an oral contraceptive (50ug ethinyl estradiol) immediately, followed by 2 tablets 12 hours later (99% effective). If the 50ug tablets are not available, 4 tablets containing 30ug ethinyl estradiol followed by 4 more tablets 12 hours later can be given with anti-emetic (3). A combination of estradiol 50ug plus morgestrel 0.5ug (oval), 2 tablets orally at the time of examination followed by 2 additional tablets in 12 hours, is an effective post-coital contraceptive (failure rate of 0.9%, nausea rate of 50%) (1). This was not necessary in the patient presented, as she was only 3years old and she was not near or post menarch. Monitoring after IUD insertion or if inserted within 5 days of unprotected sex may prevent pregnancy. RU - 486 (progesterone antagonist) taken during the first 5 weeks induce menses (1).

The psychosocial aspects are the most potentially damaging and require sophisticated management. Treating the patients with respect, ensuring that they are not left alone, assuring them that they are safe, demonstration understanding and empathy and explaining in detail how the evaluation will proceed are very important (3). Counseling in this case was given to the mother of the child. This child will probably require further counseling when she grows up.

An unhurried, no-judgmental, willing to listen-attitude in the examiner is therapeutic. The patients are traumatized and may be embarrassed by disclosing details and careful questioning is essential. The full psychological effect cannot be ascertained at the first examination and follow-up visits must be scheduled. Counseling by persons trained in rape crises-intervention should be arranged. (30

Physical trauma involves minor injuries, most of which can be treated conservatively. But severe injuries may occur and require surgical repair. Laceration of the upper vagina may require laparoscopy to determine the depth of the injury, especially in children. (3)

In the patient presented, antibiotic treatment was given and tests for VDRL, HIV and HVS were done. VDRL and HIV were found to be negative. HVS indicated that the child had been infected with sexually transmitted infection.

The emotional recovery process following sexual assault can be divided in 2 phases, acute and long term. The acute phase extends from the moment the woman is being assaulted until she begins to re-organize and re-integrate her emotions and behavior. The long-term phase usually begins 2-3 weeks after the assault, typically with alteration in the victims' lifestyle and emotional equilibrium. This phase may persist for an extended period of time (1,6)

The acute-phase reaction is characterized by fear, shock, disbelief or denial. The patient may become agitated, visibly upset or withdrawn, calm or controlled. Sleep disturbances, gastro-intestinal upsets, headaches and musculo-skeletal pain from tension. Psychiatric
Symptoms of distraction, disorganization, fearfulness and easy startling may occur. They may also experience nightmare. They are emotionally labile, fluctuating from fear and guilt, to anger and desire to revenge. (1,6)

Long-term phase of recovery is characterized by somatic and psychiatric symptoms as well as overt and frequently permanent alterations in behaviour and lifestyle (change phone numbers, jobs, residence). Repeated nightmare, development of phobias. Solitude may lead to panic. Overwhelming fear of crowds and strangers especially men may develop. (1)
More that half of rape victims experience difficulty in re-establishing sexual relationships. (1)

Women seeking treatment for chronic pelvic pain have a high prevalence of sexual trauma in their personal histories. In one study of 106 women with chronic pelvic pain, 48% had a history of major psychosexual trauma (molestation, incest or rape) compared with 6.5% of 92 pain-free controls presenting for an annual routine gynaecologic examination. Pelvic pain is specially and psycho-dynamically related to sexual abuse (7,8)

It is not possible to tell what late psychological complications will arise when the young patient presented here grows up and becomes sexually active. A lot of counseling was however given to the mother who was emotionally unstable at the time of the incidence.

Although many victims of rape may not have physical injuries, they suffer psychological trauma, which affects their lives and the lives of those around them. They require medical care and sessions of psychological counseling if they are to adjust and re-enter society without major difficulties

REFERENCES:

1. Michael C,Jessica S,Vivian P, Sexual assault. In: Current obstetrics and gynaecologic diagnosis and treatment, 9th edition, 2003, P. 1087-1093.

2. Sexual assault on www.vnh.org/OBSGYN/assault.htm (internet)

3. Medical examination of the rape victim. On www.merck.com/pubs/m manual/section 18/chapter 244/24449.htm (internet)

4. R.W.K Nduati, JWG Muita. Sexual assault. Sexual abuse of children as seen at KNH. East Africa Med j. July 1992, vol. 69, No 7, P 250-4

5. Dorothy j. Hicks. Sexual assault. Am j. Obstet.Gynaecol. 1980, 137; 931

6. Blair TMH, Warner CG. Sexual assault. Topic Emerge Med 1992, Dec: 58.

7. John A. Rock, john D. Thompson. Psychological aspects of pelvic surgery. In: Te Lindes Operative Gynecology, 8th Edition, Lippincott - Raven publishers, 1997, pages 41-42, 649, 654.

8. Reiter RC, Gambone JC. Demographic and historic variables in women with idiopathic chronic pelvic pain. Obstet Gynecol 1990, 75: 428.

GYNECOLOGY CASE NO 13

GENITO-URINARY FISTULA(VESICO-UTERINE): REPAIRED

Name MW	DOA 9/7/02
Age 25	DOD 15/7/02
Ip No	0773035

Presenting complaint

Regular passage of blood in urine and no menstrual periods since her last delivery 6 years ago.

HPI

She was well until 6 years ago when he got married and conceived. She was delivered by the C/S method at Pumwuani hospital due to labor dystocia. Since then she has never had normal menstrual periods. However each month she experiences lower abdominal pain and passage of blood in the urine. She has also been unable to conceive again.

Obstetric/gynecologic history.

LD 6 years ago by C/section. No dysmenorrhoea, no treatment for STI. No use of contraception.

Family Social History

Married, is a businesswoman selling clothes at Nairobi's Gikomba market.

Past Medical history.

No chronic ailment, not contributory.

Physical examination

Good general condition, no pallor no jaundice or edema. Slightly obese

BP 110/70mmHg Respiratory rate 18/min Temp 36^0C

CNS Normal findings

RS Chest clear, normal breasts.

PA subumblical midline scar no distension or tenderness. no organomegaly.

Vaginal examination .-Normal external genitalia, no excoriations,cervix closed and uterine size normal no tenderness.

Speculum exam(Sims)-Normal vaginal walls,cervix normal, no fistula visualize

Investigations

- Hb 14g/dl WBC 6.0 Platelets $300X10^3$
- Urea, electrolytes & Creatinine

Urea 2.0 mmol/l Cr 82 µmol/l Na 140mmol /l K 3.0mmol/l

- Pap smear satisfactory, no abnormal cells seen.
- HIV negative.

Diagnosis

Genito-Urinary Fistula(Most likely Vesico-Uterine)

Management

She was planned for abdominal repair of the Genito-Urinary fistula. On the night before surgery she was fasted from midnight and given flagyl for bowel sterility plus an enema. On the day of surgery she was premedicated with pethidine50mg and atropine 0.6mg then taken in for surgery. In theatre anesthesia was induced and a repeat lower midline incision used .The uterus was found to be adherent to the bladder fundus. This was gently separated and a fistula communication visualized between the uterine cavity end the bladder. Its edges were identified, freshened and the ostia closed. The ureteric orifices were normal. A urethral catheter was left insitu for 2 weeks. Hemostasis was achieved and anesthesia reversed successfully. The surgery and immediate postoperative period was uneventful.

Postoperative management

She began oral sips after 24hours, and later free fluids and light diet were allowed. She was encouraged to take at least 5 liter of water daily for at least one week. By the 3rd day the wound was opened and found to be clean and

dry. She was allowed home to go for removal of stitches t at the nearest health center. She was schedule for review at the Gynaecology out patient clinic in 2 weeks. For dye test and removal of the catheter.

Follow up

She was reviewed after 14 days and was doing well. The catheter was removed as planned and she was booked for visit within 1 month for a HSG to ascertain tube patency.

Discussion

MW was 25 years old; 6 years ago she underwent a caesarean section due to prolonged labour. She was delivered of a live infant whose weight is uncertain. She complains of cyclic bleeding on a monthly basis while passing urine. She has also been unable to conceive for 4 years. She was found to have a communication between the uterus and the bladder, which was repaired successfully. She was to repeat a HSG 3 months after surgery to determine tubal patency.

Genit-Urinary fistula is an abnormal communication between the urinary tract and genital tract either acquired or congenital with involuntary escape of urine into vagina.The communication may occur between the bladder,Urethra or ureter and genital tract resulting in the following types;

Bladder

Vesico-Vaginal Fistula(VVF)-commonest

Vesico-urethro-vaginal Fistula

Vesico-Uterine Fistula-This is what our patient had

Vesico-cervical Fistula

Urethra

Urethro-Vaginal

Ureter

Uretero-vaginal

Uretero-uterine

Uretero-cervical

Vesico-Uterine fistula that our patient had is not so common and mostly occurs post operatively as was in this case. The most common genito-urinary fistula is

VVF where there is a communication between the bladder and the vagina and the urine escapes to the vagina causing true incontinence with constant dribbling and continouse leakage as opposed to other types of incontinence like stress,overflow and Urge.

The true incidence of VVF is uncertain. Orwenyo found that of 166 cases treated in KNH between 1979 and 19982 90% were VVF with 10 % other types of fistula[2].

The classification of vesico-vaginal fistulas is presented according to the anatomic/ physiologic location and related to the recommended surgical technique and prognosis[3].

Table II: Classification of vesicovaginal fistulas

I fistulas not involving the closing mechanism

II fistulas involving the closing mechanism

- A without (sub) total involvement of the urethra
  - a without a circumferential defect
  - b with a circumferential defect
- B with (sub) total involvement of the urethra
  - a without a circumferential defect
  - b with circumferential defect

III miscellaneous, e.g. ureterovaginal, vesicouterine and other exceptional fistulas

An additional classification can be made according to the size of the fistula into small, medium, large and extensive:

Table II: additional classification to fistula size

Small	< 2cm
Medium	2-3cm
Large	4-5cm
Extensive	≥ 6cm

MW had a type III fistula according to the above classification.

There are various aetiological factors of VVF these include:

- Those resulting from obstetric injury e.g. pressure necrosis and direct trauma during operative vaginal delivery.
- Injury to the urinary tract during operations such as caesarean sections
- Radiotherapy in treatment of cancers
- Miscellaneous causes such as infections e.g. lymphogranuloma venerum and tuberculosis, trauma with fracture of the pelvic bones, symphysiotomy and prolonged pessary use as in the cases of genital prolapse1.

In the United States 85% of VVFs follow surgery, 10% radiotherapy and 5% obstetric causes[4]. In developing nations, the leading cause of fistulae is obstetric injury. Tahzib found that in Nigeria 83% of VVF resulted from obstructed labour and only 1% were from surgical injury[5]. In KNH Orwenyo found 92% resulted from obstetric injury[2]. Gunarantine and Mati found that 40-80% of VVFs were in primigravida of whom 70% had obstructed labour with cephalopelvic disproportion[6].

Management of VVFs can be done even with minimal facilities. At the patient' first visit an elaborate history is obtained. Initially a minimum of 10-12 weeks from the onset of leakage was recommended before any repair could be attempted. However, currently surgery can be attempted as soon as the slough has gone. A large Foley's catheter (gauge 18) should be inserted as soon as possible.

Routine antibiotic cover is not advised, rather when there is a specific infection such as sepsis, pyelonephritis or pneumonia. Cachectic patients are put on a high protein diet. Anemia is corrected with the use of haematinics. Blood transfusion should only be used in emergency situations. Routine urine examination is not done due to the difficulty in obtain a specimen which requires catheterization. A full blood count and renal function tests are to be done as part of preoperative assessment of the patient.

Intravenous pyelogram maybe useful but is not mandatory. If there is clinical suspicion of tuberculosis sputum examination rather than routine chest radiograph is indicated. Dye test may be done if the fistula is suspected but too small to be visualized. Cystoscopy does not give any diagnostic advantage but maybe useful for post operative follow up evaluation of the patient.

Examination under anesthesia is no longer a prerequisite before surgical intervention. This can be done at the time of the definitive surgery. If on preliminary vaginal examination a surgeon is unable to decide on the treatment option this patient would benefit from referral to a more experienced surgeon.

Preoperatively the patient should be appropriately counseled. Bowel preparation with enema, flagyl 1gm and dulcolax will ensure that the recto sigmoid colon is empty during surgery. Pubic hair should be shaven and the patient fasted overnight before the surgery.

VVf repair is either done transvaginally or abdominally depending on the location of the fistula. The repair if done vaginally may be done under spinal anesthesia. After the repair a catheter is left for 14 days after which a dye test is done to ensure there is no leakage of urine. Postoperative there should be continuous bladder irrigation and any blockage in the drainage of urine is an emergency that ought to be relieved immediately.

Complications of VVF repair include haemorrhage, ureteral obstruction, breakdown of repair, vaginal stenosis and urinary incontinece[1]. Complications associated with obstetric VVF formation include rectovaginal fistula, amennorrhoea, oligomenorrhea, vaginal stenosis, perineal excoriation and perinatal mortality. Orwenyo found RVFs to complicate in 7.4% of cases. The stillbirth rate was 70% with a perinatal mortality rate of 80%[2]. Gunaratine and Mati reported a stillbirth rate of 63.7% and a neonatal mortality rate of 60%. The patient presented here had a live infant who has no neurological deficit.

With improved access to obstetric services and prompt relief of obstruction obstetric VVFs can be prevented. Health facilities offering caesarean section should be made more accessible and affordable to pregnant women. Economic empowerment of women and education to young girls about abstinence should be advocated. Care should be taken by surgeons not to cause bladder or ureteric injury and incase it has occurred it should be detected intra operatively to allow for primary repair in order to avoid complications as seen in the case of MW.

REFERENCES

1. Rock JA, Thompson DJ. Vesico vaginal and urethro vaginal fistula. TeLinde's Operative gynaecology 8th edition 1997; 41: 1175-1205.

2. Orwenyo EA. A retrospective study of 166 cases of acquired vesicovaginal and rectovaginal fistulas treated at KNH 1979-1982. MMed Thesis University of Nairobi 1984.

3. Waaldijk K. Step by step surgery of vesicovaginal fistulas: A full colour atlas.1994.

4. Symmond RE. Incontinence, vesicle and urethral fistula. Obtet gynecol 1984; 27:499-515.

5. Tahzib F. Epidemiological determinants of VVF. Br J obste Gynecol 1983; 90: 387.

6. Gunaratine M, Mati JKG. Acquired fistulas of the female genital tract: A Comprehensive 5-year review.J Obste Gynecol East Central Afric 1982; 1: 11.

GYNECOLOGY CASE NO 14

INCOMPLETE ABORTION - MANUAL VACUUM ASPIRATION

Name:	C.K.	Age:	25 years
IP No.:	0806490	Ward:	1D
D.O.A.:	6.7.02	D.O.D.:	7.7.02

PRESENTING COMPLAIN

She presented with complain of vaginal bleeding for one day. She also had associated backache.

HISTORY OF PRESENTING COMPLAINT

She was well prior to the onset of vaginal bleeding which was spontaneous, dark in colour and in clots. There was associated backache and lower abdominal pains. She also had dizziness, but no dysuria.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

She was a para 0+0 gravida 1. Her last normal monthly period was on 18.2.02 and EDD was on 25.12.02. She had an amenorrhoea of 14 weeks. She had started attending antenatal clinic. Her menarche was at 15 years. Menses were regular every 28 days lasting 4-5 days. She has not used any contraception.

PAST MEDICAL HISTORY

This was unremarkable

FAMILY AND SOCIAL HISTORY

She was married and was a housewife. Her husband is a butcher. They both neither smoke cigarettes nor drink alcohol. Her mother is on treatment for pulmonary tuberculosis.

Contents of the uterus were evacuated by rotating the syringe through 360°C and pushing it back and forth. 60mls of products of conception were aspirated and the cavity was confirmed empty. When no more products were evacuated and there was resistance to movement of canula and a gritty feeling was felt.

There was minimal bleeding after the procedure. She was taken to the ward to recover and was discharged home later in the day on antibiotics (doxycycline and flagyl), ii. Analgesics (brufen).

She was also to pass through the family planning clinic for contraceptive counceling.

DISCUSSION

C.K. presented with incomplete abortion and manual vacuum aspiration was done.

Abortion is the termination of a pregnancy less than 20 weeks or fetal weight less than 500grams.This cut off point of 20weeks or 500gm reflects extrauterine fetal survival depending on the set up.In our set up,the cut off may be 24 weeks(only 15% survival rate for gestation of 24 weeks to 32weeks has been noted in our set up).

Abortion can either be spontaneous or induced. Abortion is one of the greatest public health problems because of its repercussion in maternal morbidity and mortality and also because of its ethical, political, social, religious moral and legal implications (2).

Abortion has been and is still used as a method of fertility control or back up to contraceptive failure: It is also related to inadequate family planning knowledge and services (3).

The incidence of abortion worldwide varies from 32 abortions per 1000 women to 46 per 1000 women in women aged 15-44 years (4).

PHYSICAL EXAMINATION

She was a young woman in fair general condition, clinically afebrile. She had mild pallor, no jaundice or lymphadenopathy. Respiratory rate was 20/minute; pulse rate 100 beats per minute, blood pressure 110/70mmHg.

ABDOMINAL EXAMINATION

The abdomen was soft, not distended. There was suprapubic tenderness and the uterus was about 12 weeks gestation.

VAGINAL EXAMINATION
Normal external genitalia, cervix was posterior 2cm dilated and products of conception were felt. Examining finger was blood stained.

DIAGNOSIS
An impression of incomplete abortion was made.

MANAGEMENT
She was for fluid replacement and manual vacuum aspiration.

She was started on IV fluids (normal saline and 5% dextrose). Blood was taken for grouping and cross-matching. She was started on IV gentamycin and crystalline penicillin.

The patient was then taken to the procedure room and put in lithotomy position, cleaned and draped. Vaginal examination confirmed earlier findings. Speculum was inserted and cervix cleaned. There were no cervical tears or lacerations. The anterior lip o the cervix was held at 12 o'clock position. The canula size 10 was inserted into the cavity, vacuum was created. On the syringe, the pinch valves released transferring the vacuum to the uterus.

Contents of the uterus were evacuated by rotating the syringe through 360°C and pushing it back and forth. 60mls of products of conception were aspirated and the cavity was confirmed empty. When no more products were evacuated and there was resistance to movement of canula and a gritty feeling was felt.

There was minimal bleeding after the procedure. She was taken to the ward to recover and was discharged home later in the day on antibiotics (doxycycline and flagyl), ii. Analgesics (brufen).

She was also to pass through the family planning clinic for contraceptive counceling.

DISCUSSION

C.K. presented with incomplete abortion and manual vacuum aspiration was done.

Abortion is the termination of a pregnancy less than 20 weeks or fetal weight less than 500grams.This cut off point of 20weeks or 500gm reflects extrauterine fetal survival depending on the set up.In our set up,the cut off may be 24 weeks(only 15% survival rate for gestation of 24 weeks to 32weeks has been noted in our set up).

Abortion can either be spontaneous or induced. Abortion is one of the greatest public health problems because of its repercussion in maternal morbidity and mortality and also because of its ethical, political, social, religious moral and legal implications (2).

Abortion has been and is still used as a method of fertility control or back up to contraceptive failure: It is also related to inadequate family planning knowledge and services (3).

The incidence of abortion worldwide varies from 32 abortions per 1000 women to 46 per 1000 women in women aged 15-44 years (4).

It is estimated that 50 million abortions are performed each year of which 20 million are unsafe and take place in the developing countries where risk of death is estimated at 1 out of every 280 procedures (3).

Up to 60% of total gynecological emergency admissions to Kenyatta National Hospital are due to abortions (6) and 62% of those admissions are likely to be induced or induced (7).

There are several aetiological factors of spontaneous abortions, which are broadly classified, as fetal or maternal(1)

-Fetal causes are mainly genetic and include chromosomal abnormalities, trisomy, polyploidy and other abnormalities

-Maternal causes are classified into infections, hormonal, immunological, anatomical or systemic diseases.

Abortions are clinicaly divided into threatened,inevitable,incomplete,complete,septic , missed and recurrent.

-Threatened abortion-in this case there is bleeding but the cervix remains closed.Management is bed rest and mild sedation.Progesterone is not recommended

-Inevitable abortion-in this case there is bleeding,pain and cervical dilatation.Management is as incomplete abortion.

-Incomplete abortion-in this case some products of conception have passed through the cervix.Management is dilatation and curettage using either sharp or sunction curettage under syntocinon infusion.

-Complete abortion -in this case the conceptus is expelled completely and management is observation.

-Missed abortion -in this case there is fetal death but the pregnancy is retained.management is dilatation and curettage after DIC is ruled out especialy if the pregnancy has been retained for more than 4-5 weeks after the fetal death.

-Septic abortion-in this case there is sepsis and management involves broad-spectrum antibiotics follwed by a D&C

Complications of abortion include haemorrhage ,sepsis and its sequelae,perforation,choriocarcinoma and injury to the bowel and/or bladder(1)

In Kenya, abortion is legally restricted leading to unsafe procedures, untrained providers and hence, high mortality and morbidity. Legalization reduces maternal mortality due to reduction of unsafe abortions (Abortion should be treated as an issue of health and welfare as opposed to one of crime and punishment). Because abortion is illegal, women suffering complications delay in seeking medical help. Unsafe abortions have broad and long term health and social implications. It is associated with long term effects such as infertility, social and psychological effects and even loss of the mother (8).

Treating abortion complications consumes plenty of scarce resources in terms of time, hospital beds, medical personnel and medical supplies. It is estimated that direct costs range from US$ 15 to US$ 67 in Kenya (9).

C.K. presented with incomplete abortion and luckily came before life-threatening complication set it and vacuum aspiration was done. Manual vacuum aspiration is safe simple and effective in treating incomplete abortion (10). It was introduced in Kenya in 1987 to treat incomplete abortions.

Maternal mortality arising from unsafe abortions can be tackled by preventing unwanted pregnancies through sex education and contraception, legalizing abortion and improving treatment and post abortal care-the emergency treatment,counseling for contraceptives and referral to other reproductive health and social services. Our patient was referred for contraceptive counseling.

REFERENCES

1. Pernoll M.L., Garmel S.H.: Early pregnancy risk. In: Current Obstetric and Gynaecologic Diagnosis and Treatment 8th edn. Edited by Drecheney A.H. and Pernoll M. Appleton and Lange 1994, chapter 14:306-20
2. Tielze C. 1984: The public health effects of legal abortion in the United States family planning perspectives 16(1):26-28.
3. A. Valentine, M. Lemo, Janet Kabeberi: A review of abortions in Kenya. March 1992.
4. Henshaw S.K., Singh S., Haas T. 199 incidence of abortion worldwide: International family planning perspectives supplementary S30-8
5. W.H.O., Division of reproductive health, 1998, Unsafe abortion: Global and regional estimates of incidence of and mortality due to unsafe abortion with listing of available country data 3rd edn 109 WHO/RHT/MSM/97:16.
6. Aggarwal V.D., Mati J.K.G., 1986: Review of abortion at Kenyatta National Hospital. E.Afr. Med. J. 57:138.
7. Aggarwal V.D., mati J.K.G., 1982: Epidemiology of induced abortions in Nairobi: Kenya J. Obst. Gyn. East Cent. Afric. 1:54-57.
8. Wanjala S., Murugu N.M., Mati J.K.G., 1984 Mortality due to abortion at KNH 1974-83 In: Abortion: Medical progress and social implications edited by Ruth Porter and Maeve O'Conner 4-53 Ciba Foundation Symposium 115.
9. Johnson B.R., Benson R., Rebogo Ordonz A.: 1993 Costs and resource utilization for the treatment of incomplete abortion in Kenya and Mexico, Social Science and Medicine 36(11): 1443-53
10. Kulezycki A., Potts M., Rosenfield A. 1996: Abortion and fertility regulation. Lancet 347 (9016) 1663-8.

GYNECOLOGY CASE NO 15

BURST ABDOMEN AFTER CAESARIAN SECTION - SECONDARY REPAIR

Name:	L.K.	Parity:	2+0
Age:	34 years	DOA	9.1.01
IP No:	0766130	DOD:	2.2.01

PRESENTING COMPLAINT

On the 20-1-01 the patient complained that the wound was gaping

HISTORY OF PRESENTING COMPLAINT

The patient had undergone an emergency caesarian section on 9-1-01 due to failed trial of scar. The outcome was a live male infant weighing 3800 grams with an Apgar score of 8 at 1 minute and 9 at 5 minutes. She had no prior draining of liquor at admission. The abdominal cavity had been acessed via sub-umbilical midline incision. On the 3rd postoperative day, the wound started discharging serosanguenous fluid and wound gaped on the 10th post-operative day after the sutures were removed.

OBSTETRICS AND GYNAECOLOGICAL HISTORY

She was para 2+0, in peuperium having delivered on 9.01.01 at 39 weeks. First delivery was 1998 through caesarian section due to big baby. She attained her menarche at 14 years. The menses were regular every 28 days with flow of 3-4 days.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She was a housewife. Her husband was a manager in a company in Industrial area. She neither smoked cigarettes nor took alcohol. There was no family history of chronic illness in the family.

PHYSICAL EXAMINATION

She was in fair general condition, not wasted, not pale or jaundice. Her blood pressure was 120/70 per minute, temperature 36.8°C, pulse 88/min, respiratory, cardiovascular and central nervous system were normal.

ABDOMINAL EXAMINATION

The incision site was covered with a green towel, on removal the wound was gaping with intestinal loops protruding through. There was no bleeding or pus.

PELVIC EXAMINATIONS

The external genitalia were normal and lochia was serous and non-foul smelling. Digital examination was not done.

DIAGNOSIS

A diagnosis of burst abdomen was made.

MANAGEMENT

The condition was explained to the patient. The management, that is, she required to be taken to theatre for repair was also explained. Informed consent was obtained. Blood for grouping and cross matching was taken and she was started on intravenous fluid. She was pre-medicated with intramuscular pethidine and atropine at 50mg and 0.6mg respectively. Before theatre the wound and intestine loops were covered with sterile wet green towel.

In theatre, she was put under general anesthesia. In lithotomy position vulvo-vaginal toilet was done and bladder catheterized aseptically and about 200mls of clear urine drained.

In supine position, the abdomen was cleaned and draped. The loop, of the small intestines were examined in their entire length and viability verified. The pelvis was examined and found to be clean. The uterine wound was healing well. The abdominal wall wound edges were refreshed until bleeding was noted. Using nylon 1, through and through stitches ware transfixed through the entire length

of the wound interruptedly but not tied. Vicryl No. 1 was used for mass closure between the nylon sutures. The skin was closed using nylon 2/0. The already transfixed sutures were incorporated into rubber tubing and then knotted. The wound was painted with povidone iodine and dressed. The patient was reversed from general anesthesia and later wheeled to the ward.

Postoperatively she recovered well and the stitches were removed on the 10th postoperative day, by which time the wound was well healed. She was discharged on the 12th postoperative day and advised to visit postnatal clinical in 2 weeks, unfortunately she never turned up for her appointment.

DISCUSSION

The patient presented had emergency caesarian delivery because of failed trial of scar. She started oozing serosanguenous fluid on the third postoperative day and the wound gaped on 10th postoperative day after the stitches were removed.

Wound dehiscence refers to separation of any of the suture layers of the abdominal wall. Burst abdomen refers to disruption of all layers of the abdominal walls where there may be evisceration of the intestine (1). Our patient had burst abdomen. Incision hernia results when all layers but the skin fails to heal.

The incidence of wound dehiscence and or burst abdomen vary considerably between 0.3% and 3% of all cases of pelvic surgery (2).

The principal causes of a burst abdomen include tearing of tissue, broken suture and slipped knots, all of which are preventable (3). Other contributing factors include: low midline incisions, length of the wound, suture material used, nutritional state of the patient, wound infection, age, obesity, hemartoma formation, and neoplasm (3,4).The risk in our patient was most likely due to slipped knot and use of catgut.

Clinical presentation is varied, but a warning sign of impeding burst abdomen is a serosanguinous discharge through the wound, indicating a communication

between the peritoneal cavity and the depth of the wound (1,2). The patient may be asymptomatic, but suddenly becomes aware of something "giving way". Evisceration must be recognized early and prompt steps taken since it carries a very high mortality of 15-30%. Our patient developed oozing of serosanguinous fluid from the third postoperative day and burst abdomen with evisceration after removal of skin sutures on the 10th post-operative day. Wound dehiscence usually occur between fifth and tenth day with peak on the eighth day.

Immediate management of a patient with burst abdomen includes intravenous access and resuscitation if needed. Administration of opoid analgesia (for pain relieve and sedation), covering of abdominal contents with a sterile dressing and early closure of the wound are indicated.

The closure of the wound is done under general anesthesia. This is best done by through and through (stay) sutures, preferably nylon No. 2. Alternatively, mass closure with nylon No. 1 and skin with nylon 2-0 is as good. The stay suture is left in situ for 10-14 days. Prior to closure the wound should be thoroughly cleaned and the edges done debridement. Minimal manipulation of the intestines is advisable. The antibiotic cover should be effective against anaerobes and aerobes as the culture and sensitivity results are awaited.

To prevent wound dehiscence, the pre-operative implicated factors can be overcome with parenteral nutrition. The intra-operative factors can be minimized with good aseptic and surgical technique. One should avoid weak sutures and when using monofilament sutures a square knot is advocated to prevent slipping (5).

REFERENCES

1. Matingly, R.F., Thompson J.D. Opening and closing abdominal wall. Te Linde's operative Gynaecology 8th ed. 1997; Lippincott-Raven, Philadelphia, **5**:310-11.

2. Keill, R.H., Keitzer, W.F., Nicholas, W.K. Abdominal wound dehiscence. Arch. Surg. 1973;**106**:573.

3. Andrew, D.A. Leaper, D.J. Wound dehiscence and incisional hernia. Surgery International Edition, 1999; **47**:229-32

4. Tindal, V.R. Pre-operative and post-operative management. Post-operative complications. Jeffcoate's Principles of Gynaecology 5th ed. 1987; Butterworths, London, **6**:234-8.

5. Muller, J.L., Buzley G.P., Mathews, D. Reduction of operative morbidity and mortality by combined pre-operative and post-operative nutritional support. Am. Surgery,1980;**192**:604.

LONG COMMENTARY IN GYNAECOLOGY

TITLE

POST ABORTION CARE SERVICES AT KENYATTA NATIONAL HOSPTIAL

ABBREVIATIONS

FP	Family Planning
HIV	Human Immune-deficiency Virus
KNH	Kenyatta National Hospital
ICPD	International Conference on population and Development
MVA	Manual Vacuum Aspiration
POC	Products Of Conception
PASS	Post Abortion Stress Syndrom
STI	Sexually Transmitted Infection
WHO	World Health Organistion
Ca Cervix	Cancer of the Cervix

ABSTRACT

BACKGROUND Post abortion care is a major safe motherhood strategy to combat maternal mortality and morbidity and lists among many service delivery policies and standards of reproductive health care (34). The 1994 international conference on population and development held in Cairo recommended emergency care for abortion complications and prompt provision of post abortion counseling,education and family planning services. The ministry of health in Kenya has approved a national expansion program that integrates post abortion care training and services with other reproductive health care. At Kenyatta National Hospital (KNH) ,it has been noted that death from abortion complications accounts for about 22.2% of all maternal deaths (38). It has also been observed that 43% of post abortion patients lacked knowledge of family planning(15).It is therefore necessary to assess the current post abortion care services to be able to improve on the gaps on this important safe motherhood strategy.

OBJECTIVE; To assess post abortion care services at Kenyatta National Hospital(KNH)

STUDY SITE; The study was conducted in the Acute Gynaecology ward at KNH

STUDY DESIGN; This was a cross-sectional survey

STUDY METHODOLOGY; A total of 370 patients admitted for post abortion care were recruited for the study and gave written consent to participate . A pre-tested questionnaire was administered in a private room immediately the patient had been discharged from the ward. The questionnaire was used to collect information on *socio-demographic status*, *past reproductive history* (previous sexually transmitted infections, cancer of cervix and family planning awareness), *post abortion care in the index pregnancy* - post abortion emergency treatment and post abortion referral to other reproductive health services. Results and responses were computed and analysed using SPSS version 10.0

RESULTS ;Most (62.2%) of the patient were in the high fertility age group of 20-29years,Teenegers(10-19) were 10.5%. 67% were of low socio economic status .

Post abortion counseling for family planning was low- 15.1% .Education improved use of family planning-61% for primary level,66% for secondary level and 75% for University/College.

Quality of post abortion emergency treatment was not good as 38% had to wait for more than 6hours for emergency evacuation,while 89% were not informed of their diagnosis.However over 75% of abortions were managed correctly as per gestational age.

Post abortion referrals to other reproductive health services was low , only 11.4% were referred with only 1.6% for papsmears and only 27% for family planning.88% of referrals were done verbally.

CONCLUSION; **The post abortion care was poor . The low rate of counseling for family planning was similar to previous surveys. Poor post abortion care contributes significantly to high maternal mortality thus it must be improved urgently.**

INTRODUCTION AND LITERATURE REVIEW

Maternal mortality and morbidity stemming from abortion complications are almost wholly preventable through existing means (1).

Abortion is defined as the termination of pregnancy, either spontaneously or deliberately, before the foetal viability is achieved i.e. before the foetus attains the weight of 500 gm and above, which corresponds to about 20 weeks gestational age from the last normal menstrual period.

In order to reduce the risk of long term illness or disability, and death, to women presenting with the complications of unsafe abortion, health care systems must provide easily accessible, quality post abortion care at all service levels. Currently, emergency post abortion care is provided mainly in higher level district hospitals. Not only does this lead to the high cost of providing these services, but it makes them inaccessible to many women. The prevention of abortion - related illness and mortality is dependent on the availability of emergency post abortion care in the health care system. Whether it is health information and education, stabilization and referral, uterine evacuation, or specialized care for the most severe complications, at least some components of emergency care must be available at every service delivery site in the health care system which should be applicable to both public and private sector health providers (2,3).

It is estimated that the incidence of abortion for the whole world is 15-20% (4), and that between 30 to 50 million abortions take place annually, more than half of them in the developing countries (5). A significant number of women arrive in the hospital with complications from spontaneous abortions and approximately 70,000 women die annually from complications related to unsafe abortion (6). Previous studies in Kenya have indicated a high incidence of abortion. It has been reported that about 60% of acute gynecological admission in Kenyatta National Hospital are due to abortion (7, 8, 9, 10, 11).

At other hospitals in Sub-Sahara Africa, abortion has been reported to account for a large number of gynecological admission with figures ranging form 10% to 28% being quoted (4, 12, 13, 14). The trend of abortion is on the increase worldwide because of the increase in sexuality among women in the reproductive age group (14, 15). In Asia and Middle East, these women are usually older, married and of high parity and not wanting anymore children (5). In Africa, this is more in the adolescents, many of whom tend to involve themselves in unprotected coitus (8, 9, ,12, 13, 14, ,15).

This has been demonstrated in studies done previously in Kenya and elsewhere, which have shown that sexuality among women is on the increase particularly among the young, unmarried and low parlous and especially so among the

adolescent (8, 9, 12, 13, 14, 15). It has been shown that sexual activity among adolescents start early (9, 15).

In some countries abortion accounts for 50% of pregnancy related deaths (2) and according to recent World Health Organisation estimates, upto 15% of pregnancy - related mortality worldwide is due to abortion (3).

Due to the high maternal mortality attributed to abortions and post abortion complications, a comprehensive post abortion care services should include both medical and preventive health care. The key elements of post abortion care are:-

(a) Emergency treatment of incomplete abortion and potentially life-threatening complications.

(b) Post abortion family planning and counseling services.

(c) Links between post abortion emergency services and other reproductive healthcare system.

(d) Community involvement

Every health care system provides some level of emergency post abortion care services because at least 15% of all recognized pregnancies end in spontaneous abortion (miscarriage) (16).

Post abortion emergency treatment

Although emergency post abortion care services are needed virtually everywhere, their quality, availability, affordability, acceptability and accessibility vary widely (17). Emergency treatment of post abortion complications often is offered only at secondary and tertiary health care centers in urban areas. Unfortunately, poor transportation system in many developing countries place centralized services out of reach of most poor, rural women. This gap in services makes even spontaneous abortion life-threatening in many instances. Increasing the availability of emergency post abortion care services through out the health care system requires decentralization of services which includes facility level decentralization, professional delegation, private sector participation, involvement of local authorities, reaching women living under difficult circumstances and improving the quality and range of care at every level. These steps must be backed up by establishing clear protocols for service delivery and comprehensive systematic training (2, 18, 19, 20, 21, 23).

Emergency management of post abortion complications should include: An initial assessment to confirm the presence of abortion complications, talking to the women regarding her medical condition and the treatment plan, medical evaluation (brief history, limited physical and pelvic examination, prompt referral if the woman requires treatment beyond the capacity of the facility where she is seen, stabilization of emergency conditions and treatment of any

complications - both complications present before treatment and complications occurring during or after the treatment procedure) and uterine evacuation to remove retained products of conception (POC). (24, 25, 26, 27, 28, 29).
World Health Organization (WHO) has identified the prompt treatment of incomplete abortion as an essential element of obstetric care that should be available at every district-level hospital. Fortunately, treatment of uncomplicated abortions also can be provided at the primary care level or in family planning clinics through the use of manual vacuum aspiration. The newly launched national standards for emergency maternal care in kenya state that every woman who has incomplete abortion should have an evacuation of the uterus within 2 hours of diagnosis (38).

Post abortion counseling services

In many instances, provision of emergency post abortion care may be one of the few occasions that a woman and her partner come into contact with the health care provider.

Therefore, it represents an important opportunity of providing contraceptive information and services. The contraceptive services should be introduced immediately after abortion and be readily available and accessible to all (15).

The post abortion family planning should include the following components of good family planning as recommended by WHO Technical Support (24); counseling about contraceptive needs in terms of the clients reproductive health goals, information and counseling about all available methods, their characteristics, effectiveness and side effects, choices among methods, assurance of contraceptive supply, access to follow up care and information about the need of protection against Sexually Transmitted Infections (STI's) (28, 30, 31).

The post abortion family planning should be based on an individual assessment of each women's situation i.e. her personal characteristics, clinical condition and the service delivery capabilities in the community where she lives. The post abortion family planning services need to be initiated immediately because ovulation may occur as early as 11 days following an abortion and usually occurs before the first menstrual bleeding. At minimum, all women receiving post abortion care need counseling and information to ensure that they understand they can become pregnant again before the next menses, there are safe contraceptive methods to prevent or delay pregnancy, where and how they can obtain family planning services and methods. All modern methods of contraception are appropriate for use after treatment for incomplete abortion as long as the provider screens the woman for the standard precautions for use of a particular method and gives adequate counseling (28, 32, 33).

The post abortion counseling needs to be very comprehensive and cover other related health issues including HIV and other Sexually Transmitted Disease (STD's), risks of developing cancer of the cervix especially from multiple sexual partners ad STDs like human papiloma virus infection and herpes simplex type

2. Emergency treatment of incomplete abortion is often a woman's first entry point into the health system and a time when other reproductive health needs can be addressed (34). Other emotional needs must be covered in the counseling as post abortion stress syndrome (PASS) is likely to develop.

The post abortion stress syndrome (PASS) is often characterized by guilt, psychological numbing, depression and thoughts of suicide including sad mood, sudden and uncontrollable crying episodes, deterioration of self-concept, sleep, appetite and sexual disturbances, reduced motivation, disruption in interpersonal relationships. Other components include nightmares, re-experiencing the abortion, pre occupation with becoming pregnant again, anxiety over fertility and child bearing issues, interruption of the bonding process with present and/or future children, anger/rage, development of eating disorders, alcohol/drug abuse and other self-punishing or self degrading behaviours (35, 36).

Post abortion referrals

Linking emergency post abortion care services with other reproductive health services is essential and logical, yet these services remain distinctly separate in most parts of the world. This separation leaves women without access to reproductive health care and contributes significantly to women's poor overall health status (19, 35).

It is important to identify the reproductive health services that each woman may need and offer her as wide a range of services as possible. For example, providers need to be alert to symptoms of sexually transmitted diseases (e.g. Trichomoniasis or mucopurulent cervicitis) and provide the appropriate treatment for them. Also it may be possible to offer cervical cancer screening at the time of treatment or to provide a referral to a facility where screening is available. Finally, women treated for spontaneous abortion may have special reproductive health care needs, such as special follow up for management of recurrent spontaneous abortion (infertility) or advice before attempting to become pregnant again or about prenatal care (19, 35).

The post abortion care is a major safe motherhood strategy to combat maternal mortality and morbidity and lists amongst many service delivery policies and standards of reproductive health care (34). The 1994 International Conference on Population and Development (ICPD), held in Cairo noted that (Paragraph 8.25) all governments and relevant organizations should strengthen their commitment to women's health, to deal with the health impact of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded post abortion counseling, education and family planning services. These services should be offered promptly. The Ministry of Health in Kenya has approved a national expansion program that integrates post abortion care training and services with other reproductive health care. The expansion is to broaden base of service (2, 6).

DEFINITIONS

- **Post Abortion Care:-** This refers to the care given to women experiencing spontaneous, self induced or planned termination of pregnancy and aims at minimizing and preventing the undesirable outcome of abortion.

- **Counseling:-** The process of helping clients make voluntary and informed decisions about their individual care. It is a two-way exchange of information that involves listening to clients and informing them of the options. Counseling is always responsive to each clients individual needs and values.

- **Post Abortion Stress Syndrome:-** The feeling that affect some women after an abortion i.e. persistent feeling of grief, guilt, sadness, crying and loss.

- **Post Abortion Family Planning Counseling:-** The process of helping patient after an abortion make informed decisions about fertility and related issues.

- **Unsafe Abortion:-** A procedure for terminating an unwanted pregnancy either by persons lacking necessary skills or in an environment lacking the minimal medical standards or both.

STUDY OBJECTIVES

Broad Objective

To assess post abortion counseling and services provided at Kenyatta National Hospital.

Specific Objectives

1. To determine the proportion of post abortal patients counseled for family planning and their previous awareness
2. To determine the proportion of post abortal patients counseled for sexually transmitted infections (including HIV) and for cancer of the cervix/pap-smears and their previous awareness
3. To determine the quality of post abortion emergency treatment (time taken before treatment is offered, proportion of patients receiving a appropriate treatment and the proportion informed on their final diagnosis).
4. To determine the proportion of post abortal patients referred to other reproductive health services.
5. To make recommendations and provide feedback to the service providers.

RATIONALE

There is high maternal mortality and morbidity attributed to abortion and post abortion complications in many developing countries like Kenya, thus comprehensive post abortion care services should include both medical and preventive health care. There is need to link emergency treatment in postabortion care to the family planning services counseling services and other reproductive health services thus improving safe motherhood strategy.

In Kenya, studies done previously at Kenyatta National Hospital have shown that deaths from abortion complications account for about 22.2% of all maternal deaths (38), 43% of post abortion patients were not using contraceptives due to lack of knowledge or non availability (15). It has also been observed but not qualitatively assessed that at Kenyatta National Hospital follow up services are only offered to post partum mothers but rarely to post abortal patients after discharge post evacuation except for the post laparatomy patients (15). The women hospitalized for abortion and its complications are treated and discharged as rapidly as possible and rarely offered any quality post abortion counseling (15). Their other reproductive health problems is rarely given priority (15).

It is with this in mind that a descriptive cross-sectional study was designed on post abortion counseling and services at Kenyatta National Hospital to form a basis of recommending quality provision of this vital care in order to reduce maternal morbidity and mortality.

STUDY DESIGN

This was a descriptive cross-sectional survey

MATERIALS AND METHODS

Study Area

The study was done in the acute gynecological ward (Ward ID) at Kenyatta National Hospital. This is the ward where all cases of abortions including complications are admitted. Other acute gynecological emergencies are also admitted here including ectopic pregnancies, acute pelvic inflammatory disease, bartholins abscesses, acute hemorrhage from any other gynecological cause or complications etc. the yearly average estimate admission into this ward in the last five years proceeding the study are as follows:-

Year	Total	Abortions
1996	4975	3160
1997	4947	2145
1998	3879	2515
1999	5268	2318
2000	6611	3965

In this ward, there is an evacuation room where patients with incomplete abortion have evacuation of the uterus done by aspiration using Karman's Cannula under no analgesia/anesthesia. The patients are discharged the same day or the following day with an exception of those with abortion complications who would stay longer for further management.

Other services for acute gynecological complications which do not require main theatre are also offered here. Post abortion counseling services are ideally supposed to be offered here also.

Study Population

The patients for the study were recruited in the months of October, November and December 2002. the interviews were done on alternate days. All patients who met the eligibility criteria for the study were recruited. For the patients rsiding in Nairobi, location of their residence was used to classify them into low class,middle class and high class. For example those residing in Kibera,mathare were grouped as low class, Nairobi west, Madaraka as middle class and muthaiga,Lavington as High class.

Inclusion Criteria

1. All the patients who had been managed for abortion and associated complications and had been discharged from the ward.

2. A signed informed consent was sought from each client and only those who agreed to participate in the study were included.

Exclusion Criteria

1. All patients who declined to give consent.

2. All patients managed for abortion and associated complications but were not yet discharged from the ward.

Data Collection

A structured questionnaire containing open and closed ended questions on socio-demographic characteristics, reproductive history and post abortion care received during the current abortion was used. The questionnaires were filled by direct interview of each participant in a private room after discharge. During the interview the patients were allowed to ask any questions they wished to ask regarding post abortion care or reproductive health in general. From their discharge summaries, the treatment received and referrals made were noted.Also the discharge diagnosis was recorded. Quality of post abortion emergency treatment was determined by estimating time taken before treatment is offered which should be within 2hours of diagnosis but for the purpose of this study less than 5 hours is used ,that is from the time of arrival to hospital to when treatment is received which takes into account registration process before seeing a doctor.Also considered for quality was the provision of emergency evacuation and provision of information on the diagnosis.
The interviews were conducted on alternative days with the help of three trained research assistants under the supervision of principle investigator. The research assistants were Kenya Registered Nurses who are also trained counselors. The questionnaires were pre-tested by requesting 20 post abortion patients at New Nyanza Provincial Hospital in Kisumu to fill out the questionnaire by the principal investigator. All ambiguities were corrected.

SAMPLE SIZE

This was calculated using the formula:

$$n = \frac{Z^2 P(1-P)}{C^2}$$

Where

n = desired sample size
Z = 1.96, derived from two tailed test at 5% confidence level
P = prevalence of the condition
C = precision required for the study
= 0.05 for 95% confidence level

Lema et al found out that abortion accounts for 60% of all acute gynecological admission at Kenyatta National Hospital.

$$n = \frac{1.96 \times 1.96 \times 0.6(1-06)}{0.05 \times 0.05}$$

$$= 369$$

The desired sample size = 369.

For this study, the sample of 370 was used.

ETHICAL CONSIDERATIONS

1. Permission to carry out the study was sought through the department of obstetrics and gynecology of the University of Nairobi from:-

    - The Ethical and Research Committee at Kenyatta National Hospital.

2. Signed informed consent was sought from each woman and only those consenting were included in the study.

3. Participation in the study was voluntary and no inducements were offered.

4. The post abortion patients who required family planning, counseling and referral to other reproductive health services were managed accordingly.

5. The questionnaire did not contain the participants name or ethnicity and was not used to get back or reprimand the participant.

All the information obtained firm the study was treated with utmost confidentiality and used only for the intended purpose.

RESULTS

A total of 370 patients admitted for post care in the acute gynecology ward (ID) at Kenyatta National Hospital were recruited for the study .Tables 1 - 9 describes their socio - demographic status, past reproductive health history and abortion care in the index pregnancy i.e. counseling services (family planning, HIV&STI, ca cervix & pap smear), quality of emergency treatment and referrals to other reproductive health services.

SOCIO-DEMOGRAPHIC STATUS; The findings of the socio-demographic characteristics of the study population is summarized in table1 below

Table 1: Socio - Demographic Status

	CHARACTERISTICS	NUMBER N= 370	PERCENTAGE %
1:	AGE (YEARS)		
	• 10 - 19	40	10.8
	• 20 - 29	230	62.2
	• 30 - 39	96	25.9
	• > 40	4	1.1
2:	RESIDENCE		
	a) Nairobi	328(370)	88.6
	i) Low class	248	67
	ii) Middle class	64	17.3
	iii) High class	16	4.3
	b) Outside Nairobi	42(370)	11.4
3:	MARITAL STATUS		
	• Single	122	33
	• Married	214	57.8
	• Separated	28	7.6
	• Widowed	6	1.6
4:	RELIGION		
	• Catholic	114	30.8
	• .Protestant	228	61.6
	• Muslim	12	3.2
	• Others	16	4.3
5:	EDUCATION		
	• Primary	228	61.6
	• Secondary	118	31.9
	• University / College after secondary.	24	6.5
6:	OCCUPATION		
	• Unemployed	204	55
	• Domestic servant	34	9
	• Business Lady	62	17
	• Professional	38	10
	• .Others	32	9

Age; Most of the clients were in the age group 20-29 forming 62.2% (230) of the study population followed by the age group 30-39 forming 25.9%(96). Adolescent/Teenagers (10-19) formed 10.8%

Residence; Most of the clients were residence of Nairobi forming 88.6% (328) and the proportion from the low class estate was higher forming 67%(248).

Marital status; Majority of the patients were married forming 57.8% (214) followed by single clients who were 33% (122) and separated 7.6%.

Religion; Most (92.4%) were Christians with protestants forming 61.6% of the study population.

Education; The level of education was low with majority having only reached primary school - 61.6% (228). But at least 100% of the study population had received some form of education

Occupation; Most the clients were unemployed thus forming 55% (204) of the study population.

PAST REPRODUCTIVE HISTORY

The characteristics that were looked into included previous abortions, sexually transmitted infection and ca cervix awareness, and the previous family planning awareness and usage. The findings are summarized in table 2.1 and 2.2 respectively.

Table 2.1 Past Reproductive Health History - Previous abortions, STI and ca cervix awareness

	CHARACTERISTIC	NUMBER	PERCENTAGE %
1:	PREVIOUS ABORTIONS		
	(i) Number of abortions in past pregnancies		
	• 0	290	78.4
	• 1	56	15.1
	• 2	16	4.3
	• 3	8	2.2
	(ii) Treatment of previous abortion		
	• Out patient	12	14.6
	• Hospitalized	48	58.5
	• . Operation	2	2.4
	• . No treatment	20	24.4
	(iii) Counseling after previous abortion		
	• . Counseled	4	5
	• . Not counseled	78	95
	• . No previous abortion	288	
2:	SEXUALLY TRANSMITTED INFECTIONS (STI) AWARENESS		
	(i)Previous awareness		
	• . aware	306	82.7
	• . Not aware	64	17.3
	(ii)Source of information of previous STI awareness		
	• . Health care	76	19.5
	• . Media	28	8.0
	• . Friends / relatives / spouse	120	31.4
	• . Seminars / books / schools	82	22.1
	• . Combinations	74	19.0
3:	CANCER OF CERVIX AWARENESS		
	(i) Previous awareness		
	• . Aware	134	36.2
	• . Not aware	236	63.8
	(ii) Previous awareness on pap smears		
	• . Aware	58	15.7
	• . Not aware	312	84.3
	(iii) Source of information on previous awareness for ca cervix	n=134	
	• . Health care	50	38.8
	• . Media only	20	14.9
	• . Friends / Relatives /Spouse	40	29.9
	• . Seminars /Schools /books	22	16.4
	(iv) Source of information on pap smears	n=58	
	• . Health care	28	48.3
	• . Friends/ Relatives /Spouse	8	1.8
	• . Media	4	6.9
	• . Seminars /schools /books	18	31

Previous abortions; 78.4% (290) of the client had not had any previous abortion followed by 15.1% who had previously had only one abortion. Most of those who had previous abortions that is 58.5% (48) had been treated by hospitalization and only 5% (4) received post abortion counseling.

Sexually transmitted infections awareness; 82.7% (306) had previously received information on STI's. Source of information in order was friends/relatives - 31.4%, seminar/books/schools - 22.1%, health staff 19.5%, media 8%, and 19% had received information from a combination of sources

Cancer of cervix awareness; Only 36.2% (134) had previous awareness for cancer of cervix and only 15.7% (58) for pap smear. The main source of information in both cases was health staff (38.8%) for cancer cervix and 48.3% for pap smears).

Table 2.2 Past Reproductive Health History -Family planning

	CHARACTERISTICS	NUMBER	PERCENTAGE %
1:	Previous FP awareness	330 (370)	89.2
	• . 10 -19 Yrs	26 (40)	65
	• . 20 - 29 Yrs	206 (230)	89.6
	• . 30 - 39 yrs	94 (96)	97.9
	• . >40 Yrs	4 (4)	100
2:	Previous family planning used and age	236 (370)	63.8
	• . 10 - 19	6 (40)	15
	• . 20 - 29	134 (230)	58.3
	• . 30 - 39	92 (96)	95.8
	• . >40	4 (4)	100
3:	Previous family planning use and education		
	• . Primary	140 (228)	61.4
	• . Secondary	78 (118)	66
	• . University / College after secondary	18 (24)	75
4:	Previous family(FP) use and parity		
	• 0	18 (94)	19.1
	• 1	96 (132)	72.7
	• 2	36 (42)	85.1
	• 3	30 (40)	75
	• >3	56 (62)	90.3
5	Previous FP use and marital status		
	Single	37(122)	30
	Married	107(214)	50
	Separated	16(28)	58
	Divorce	4(6)	70
6:	family planning methods used previously	236	
	• . Pills	116	49.2
	• . IUCD	4	1.7
	• . Norplant	2	0.8
	• . Barrier / Spermicides	2	0.8
	• . Calendar	10	4.2
	• . Injection / Depo provera	102	43.2
7:	Reasons for previous non use of family planning	134	36.2
	• . Not ready/ wants a baby	32	23.9
	• . Afraid	16	11.9
	• . Lack of knowledge	40	29.9
	• . Advised against	14	10.4
	• . Others	6	4.5
	• . No reason	26	19.4
8	Source of *information* for previous FP awareness	330	
	• . Health care	194	58.8
	• . Media	12	3.6
	• . Friends /relatives /Spouse	104	31.5
	• . Seminars/ books /Schools	18	5.5
	• . Others	2	0.6

Previous family planning awareness; 89.2% (330) of the study population were aware of family planning services previously. The awareness was highest in the age group, >40 yrs - 100% then 30-39-97.9% followed by 20-29 yrs - 89.6% (206). For teenagers (10-19yrs) it was 65%.

Previous family planning use and age; 63.8%(236) had used family planning. From the highest to the lowest, the order was;>40yrs-100%, 30-39yrs-95.8%, 20-29-58.3% and teenagers/adolescent (10-19)-15%

Previous family planning use and Education Family; planning usage was found to increase with level of education - primary 61.4%, secondary 66%, university/college after search - 75%.

Previous family planning use and parity;
from the highest to the lowest, the use was as follows:-

Parity >3	90.3%
Para 2	85.7%
Para 3	75%
Para 1	72.7%

Previous family planning method use ; From the highest to the lowest, it was Pills 49.3%, injections / Depo-Provera - 49.2%, calendar - 4.2%, IUCD - 1.7%, Norplant - 0.8%, barrier/spermicides - 0.8%.

Previous family use and marital status; Among the previous family planning users, the single clients had the lowest proportion of users, with only 30%, while for those clients who were married, separated and divorce, it was 50%,58% and 70% respectively

Reasons for previous non-use of family planning; These were varied: lack of knowledge - 29.9%, afraid 11.9%, advised against 10.4% or others gave no reason - 19.4%.

Source of information; The main source of information on previous family planning use was health staff 58.8%

POST ABORTION CARE IN THE INDEX PREGNANCY

1 POST ABORTION COUNSELING SERVICES

(i) Family planning and counseling services

Family planning and counseling services concerning the index pregnancy is summarized in table 3 below

Table 3 Family Planning Counseling And Services.

	CHARACTERISTICS	NUMBER	PERCENTAGE
1:	ABORTIONN BY GESTATION		
	• . < 7 weeks	13	3.5
	• . 7 - 12 weeks	141	38.1
	• . 13 - 18 weeks	113	30.5
	• . > 18	103	27.9
2:	INDEX PREGNANCY IN RELATION TO PROBLLEMS WITH FP	N = 370	
	(i) Family planning method failure	n= 30 (370)	8.1
	• . Pill	14	46.7
	• . IUCD	2	6.7
	• . Calendar	4	13.3
	• . Injection / Depo	10	33.3
	(ii) Poor compliance	n= 90 (370)	24.3
	• . Pill	52	57.8
	• . IUCD	0	0
	• . Colander	4	4.4
	• . Injection / Depo provera	34	37.8
	(iii) Family planning inaccessibility	n=10	2.7
	(iv) Family planning unavailability	n=6	1.6
	(v) Lack of awareness of FP	n=48	13
	(vi) Other / Not on FP	n=186	50.3
3:	COUNSELING ABOUT FP AFTER CURRENT ABORTION	N= 370	
	• . Counseled	56	15.1
	• . Not counseled	314	84.9
4:	CHOOSING USE OF FP AFTER CURRENT ABORTION		
	• . Chose FP	100	27
	• . Did not choose FP	270	73
5:	REASONS FOR NOT CHOOSING FP; Not ready	N=270	
	• . Afraid	132	48.9
	• . Lack of knowledge	18	6.7
	• . Advised against	99	36.7
	• . Others	9	3.3
		12	4.4
6:	FP CHOSEN AFTER CURRENT ABORTION	N=100	
	• . Pill	30	30
	• . IUCD	2	2
	• . Norplant	10	10
	• . Calendar	2	2
	• . Injection / Depo provera	40	40
	• . Abstinence	6	6
	• . Bilateral Tubal ligation	10	10
7:	REFERAL FOR FAMILY PLANNING	N= 370	
	• . Referred	48	12.9
	• . Not referred	322	87.1
8:	WHERE REFERRED	N= 48	
	• . KNH Family welfare clinic 66	24	50
	• . Private clinic / Hospital.	16	33.3
	• Others	8	16.7

Distribution of abortion by gestation age;

It was in the following order: 7-12 weeks - 38.1% (141), 13-18 week - 30.5% (113), >18 weeks - 27.9% (103) and less than 7 weeks - 3.5% (113).

Index pregnancy in relation to problems with family planning:-

Family planning method failure was 8.1% (301), poor compliance was 24.3% (90), family planning inaccessibility-27% (6), family planning unavailability-1.6% (6), lack of awareness of family planning 13% (48) while 50.3% (186) were not on family planning but reported no correlation with family planning problem and the index pregnancy. For those who had family planning method failure, ,the order from highest to lowest was pills 46.7% (4), injection / depo - 33.3% (10), calendar method - 13.3% (4) and IUCD 6.7%(2). For those who had poor compliance, the order was; 57.8(52) for pills, injection/depo - 37.8(34), calendar method 4.4%(4) and IUCD 0%.

Post abortion family planning counseling services after index pregnancy;

Only 15.1%(56) were counseled, however 27% (100) chose to use family planning and 73% (270) chose not to use. The reasons given for those who did not choose family planning were as follows:- 48.9% (132) were just not ready, 36.7% (99) had lack of knowledge, ,6.7% (18) were afraid, 3.3% (9) were advised against and 4.4% (12) gave no reasons.

The methods chosen in order were:

injection/depo - 40%(40), pill 3030% (30), Norplant 10% (10), bilateral tubal ligation 10% (10), abstinence 6% (6), calendar 2% (2) and IUCD 2% (2).

Post abortion referrals for family planning;

13% (48) were referred and 87% (322) were not referred for any family planning services. Of these referral, 50% (24) were referred to family welfare clinics/hospitals and 16.7% (8) were referred to other places.

(ii) Post abortion HIV and STI counseling

The findings for post abortion counseling for HIV and STI's are summarized in table 4 below

Table 4
Post Abortion HIV and STI Counseling

	CHARACTERISTICS	NUMBER	PERCENTAGE %
1.	(i) HIV awareness		
	• . Aware	354	95.7
	• . Not aware	16	4.3
	(ii) Information received about HIV after current abortion		
	• . Informed	38	10.3
	• . Not informed	332	89.7
	(i) Preventive strategies on HIV		
	• . Condoms	172	31.6
	• . Abstinence	126	23.2
	• . Drugs	8	1.5
	• . Blood safety and needles	20	3.7
	• . Faithfulness to partner	178	32.7
	• . VCT	12	2.2
	• . Don't know	28	5.2
	(ii) Source of information about HIV for those with HIV awareness	n= 354	
	• . Health care	70	19.8
	• . Media	144	40.2
	• . Friends/ Relatives/ Spouse	80	22.6
	• . Seminars / Schools / Books	60	16.9
2.	STI's		
	(i) Information received about STI	N= 354	
	• . Informed	36	9.7
	• . Not informed	334	90.3
	(ii) Dangers from STI's		
	• . Infertility	92	20.9
	• . Chronic P.D.	46	10.4
	• . HIV	8	1.8
	• . Others	148	33.6
	• . Don't know	147	33.3
	(iii) STI effects on ca cervix	N= 370	
	• . Aware	68	18.4
	• . Not aware	302	81.6
	(iv) Preventive strategies against STI's		
	• . Condoms	112	23.2
	• . Abstinence	122	25.3
	• . Blood safety and needles	2	0.4
	• . Faithfulness to partner	144	29.8
	• . VCT	6	1.2
	• . Don't know	97	20.1

HIV awareness was high-95.7%; After current abortion, only 10.3% (38) were informed about HIV with 89.7% (332) having received no information. On preventive measures for HIV, the findings were; 31.9% (172) for use of condom, abstinence - 23.2% (126), drugs - 1.5% (8), blood safety and needles - 3.7% (201), faithfulness to partner 32.7% (178), VCT - 2.2% (12) and 5.2% (28) did not know. Source of information on HIV was highest for media 40.7%.

Post abortion counseling for sexually transmitted infections (STI's) was low as only 9.7% (36) were counseled with 90.3% (334) having received no information at all. Correct knowledge on dangers for STI was only 20.9% for infertility, 10% for PID and 1.8% for HIV. Majority of upto 81.6% (302) were not even aware of effects of STI's in developing cancer of the cervix. On prevention of STIs, the findings were: 23.2% for condoms, 25.3% for abstinence, 29.8% for faithfulness to partner, 1.2% for VCT and 20.1% did not know.

(iii) Post abortion counseling for cancer of cervix and Pap smears

The results on counseling for cancer of cervix and pap smear received after the current abortion are summarized in table 5.

Table 5: Cancer Of The Cervix And Papsmear Counseling

	CHARACTERISTICS	NUMBER	PERCENTAGE
1	Information about ca cervix received	N = 370	
	• Informed	14	3.8.
	• Not informed	356	96.2
2	Risks for developing ca cervix awareness	N = 370	
	• Aware	38	10.3
	• Not aware	332	89.7
3	i) Awareness for preventive measures against ca-cervix	N= 370	
	• Aware	42	11.4
	• Not aware	328	88.6
	ii) Types of preventive measures against ca- cervix	N = 42	
	• Regular pap smear	10	23.8
	• Avoid STI & multiple sex partners	10	23.8
	• Others	22	52.4
4	Information received about Pap smear		
	• Informed	6	1.6
	• Not informed	364	98.4
5.	Importance of Pap smear		
	• Checks STI/ ca cervix	26	7
	• Prevents ca cervix	14	3.8
	• Don't know	330	89.2
6	Who should have pap smear		
	• Women with abdominal complaints	6	1.6
	• All women that are sexually active	30	8.1
	• Others	4	1.1
	• Don't know	330	89.2
7	i) Referral for Pap smear		
	• Referred	6	1.6
	• Not referred	364	98.4
	ii) Places for referrals for pap smear	n = 6	
	• FWC - 66 (KNH)	4	66.7
	• City Council	2	33.3

Only 3.8%(14) received counseling for cancer of cervix with only 10.3% (38) aware of risks for developing cancer of cancer of cervix, and only 11.4% aware of preventive measures against developing cancer of cervix. On prevention of cancer of cervix, 23.8% were for both regular pap smears and avoidance of STI and multiple sexual partners.

Only 1.6%(6) were counseled for pap smears with 98.6% (364) having recieved no counseling at all. 89.2% (330) did not know the importance of pap smears while 3.8% responded correctly that it checks for STI / ca cervix and 7% (14) that it prevents ca cervix. A further 89.2% (330) did not know who should have a pap smear while only 8.1% (30) answered correctly that all women that are sexually active should be done regular pap smear. Only 1.6% (6) were referred for pap smears with 66.7%(4) referred to FWC in KNH and 33.3% (2) referred to city council.

2. QUALITY OF POST ABORTION EMERGENCY TREATMENT

This was determined by time taken for patients to receive emergency post abortion evacuation and other treatments like drugs or intravenous fluids or blood transfusions for septic abortions or shock, apropriate management in comparison to the gestation of the abortions and the information given to the patients on their diagnosis. These are summerised in tables 6,7 and 8 respectively.

Table 6 : Time Taken For Treatment To be Offered.

TIME TAKEN	NUMBER	%
0 -5 hours	236	63.8
6 -12 hours	60	16.2
13 - 24 hours	40	10.8
> 24 hours	34	9.1

63%(236) of clients were treated within 5hours of arrival to the hospital,16.2% within 6-12 hours 10.8% within 13 to 24 hours and only 9.1% after 24 hours

Table7: Type of Treatment and Gestation age of Abortion

Gestation	Treatment Received						
	MVA alone		MVA & other treatments		Other treatments only		Total
	No.	%	No.	%	No.	%	
Less than 7 weeks	3	23	10	77	0	0	13
7-12 weeks	25	18	106	75	10	7	141
13-18 weeks	34	30	68	60	11	10	113
More than18 weeks	15	15	75	73	13	12	103

Note; Other treatment included blood transfusion &intravenous fluids for shock,drugs for septic abortions and operations for complications of abortion like perforated uterus and pelvic abscess.

Most of the abortions that were 12weeks and less received Manual Vacuum Aspiration (MVA) treatment with 77% for those less than 7weeks and 75% for those 7-12weeks.

Table 8: Diagnosis Awareness

VARIABLE	NO.	%
Awareness of diagnosis	N= 370	
• Informed	118	31.9
• Not informed	252	68.1
Diagnosis comparison		
• Diagnosis awareness same as in file.	100	27
• Diagnosis awareness not same as in file	270	73

Only 31.9%(118) were informed of their diagnosis .27%(100) were aware of the correct diagnosis as the one in the file

3 POST ABORTION REFERRALS TO OTHER REPRODUCTIVE HEALTH SERVICES

The results for the post abortion referrals are summarized in table 9 below;

Table 9: Post Abortion Referrals.

	CHARACTERISTICS	NO.	%
1	W- Referrals made		
	• Yes	52	14
	• No	318	86
2	Other reproductive health services where referrals were made:	N = 52	
	• GOPC in KNH	12	23.1
	• FWC in KNH	6	11.5
	• Adolescent clinic	20	38.5
	• Others/outside KNH	14	26.9
3	Format of Referrals	N = 52	
	• Through consultation request form	6	11.5
	• verbally	46	88.5

Only 14%(52) of the clients were referred to other reproductive health services while 86%(318) were not. Of those referred to ,23.1% were referred to GOPC in KNH,11.5% to FWC in KNH,38.5% to Adolescent clinic in KNH and 26.9% to other

health services outside KNH.88.5% of the referrals were verbal while 11.5% were through consultation request forms

DISCUSSION

There is high maternal mortality and morbidity attributed to abortion and post abortion complications in many developing countries like Kenya (30% of the 600 maternal deaths per 100,000 live births annually), thus comprehensive post abortion care services should include both medical and preventive care.

Most of the patients were young with the age group of 20-29 years forming 62.2% of the study population. It is worth noting that teenager formed 10.8% of the study population. Though the proportion of teenager was lower than the findings of a previous investigator in the same setting -17.5%(15), special attention needs to be given to this group as regards to post abortion counseling for family planning and referral to the Adolescent clinic for follow up.

Majority (88.6%) of the patients were residents of Nairobi with 67% having low socio-economic status thus residing low in class estates. This finding is not surprising as previous workers (20) have found unsafe abortion to be higher in women with low socio - economic status and most of them end up being admitted at Kenyatta National Hospital with post abortion complications. The Ministry of health in Kenya has a big challenge to come up with clear policies regarding the ever-sensitive issue of safe abortion, as unsafe abortion and its complications seems to be still a problem thus contributing to maternal mortality and morbidity.

Majority (57.8%) of the clients were married with single being 33%. These findings agree with reports of an investigation done in the same setting previously (15).

100% of the patient had at least some education but majority (61.6%) had only attained primary education. This agrees with the previous findings (15).

The Christians were the majority (92.4%) with Muslims only forming 3.2% previous workers (15) had the same findings. This distribution conforms to the distribution of people by religious affiliation in Kenya where the majority are Christians.

55% of the patients were unemployed. This is a further confirmation that the majority of these patients are from a low socio - economic group. A finding cited by Aggarwal and Mati previously(10)

In 78.4%, the index abortion was the first one. Similar findings were reported by Mutungi, Aggarwal & Mati, Omuga with figures of 74.8%, 80% and 75.1% respectively. 21.6% of the patients had previously had abortions ranging from 1 to 3 and of these, 58.5% had been managed by hospitalization and only 5% received post abortion counseling.

Previous awareness for sexually transmitted infections was high (82.7%) with many varied sources of information like health care (19.5%) media (8%), friends/relatives/spouse (31.4%). Seminars/books/school (22.1%) and combinations (`19%). The contribution of school brings again the controversial issue of sex education is schools. This is yet another challenge to the ministry of Education with advise from Ministry of Health to come out clearly with policies on this.

Previous awareness of cancer of the cervix was low (36.2%) and it was even lower for pap-smears (15.7%). For those with awareness on ca cervix, the information sources were as follows; Health care -38.8%, media -14.9%, friends/Relatives/ spouse -29.9%, seminars/ School /books -16.4%. For pap-smears, Health care - 48.3%, friend/Relatives/ Spouse -1.8%, media -6.9% and seminars /Schools/ books -31%.

Previous family planning awareness was 89.2% and there were variations as per age group as follows. Teenagers (10-19 years)- 63.8%, 20-29 year- 89.6%, 30-39years-97.9 %and over 40 years -100%. These findings are almost similar to reports from Kenya Demographics and Health Survey (KDHS) of 1998 where 96.8% of all women were found to have knowledge of contraceptive methods.

Previous family planning use (ever use of contraception) was 63.8% and the distribution in the age groups was; 10-19 -15%, 20-29-58.3%, 30-39-95.8%, 40 and above-100%. The findings correlates well with KDHS of 1998 where 51.3%of women were found to have ever used contraceptive and the distribution in the age groups was; 15.8% for 15-19 years, 20-24 years - 52.1 %, 25-29-67.3%, 30-34yrs-70.2%, 35-39-68.6% 40-44-61.1% and 45-49-52.7%. The difference noted with KDHS of 1998 is the low figures for above 40 years but this could be explained by the fact that only 4 out of 370 patients were in this age group in the study population.

The higher the level of education, the greater the proportion that used family planning thus 61.4% for primary, 66% for secondary and 75% for university /College after secondary. This is encouraging and the girl education must be promoted by the government in order to control the high fertility rate which currently stands at 4.7 children per woman (rural - 5.2 children per woman, urban-3.1 children per woman) -KDHS of 1998.

Previous parity and use of family planning was as follows; No previous viable pregnancy - 19.1%, one previous viable pregnancy - 72.7%, Two previous viable pregnancies - 88%, Three previous viable pregnancies - 75% and More than three previous viable pregnancies-90.3%. Higher parities were generally associated with more use of family planning methods.

Previous Family Planning use and marital status was 50% for currently married women, 30% for single, 58% for separated and 70% for Divorced. These results are similar to those of previous workers (19). KDHS of 1998 found that 64.1% of currently married women had ever used contraceptives thus the figure for this study is slightly lower. The contraceptive prevalence rate (CPR) for Kenya - percentage of currently married women who are using any method of family

planning is 39% (KDHS 1998). Methods of family planning previously used were; 49.2% for pills, 43.2% for injections, 4.2% for calendar method, 1.7% for IUCD, 0.8% for barrier methods and Norplant. The KDHS of 1998 reported 25.7% for pills, 18.8% for injections, 16.5% for calendar method, 6.2% for IUCD, 0.8. % For Norplant and 9.4% for barrier. This study has higher figures for pills and injections but in both cases they are most frequently used.

Reasons for non use of family planning previously were varied; 36.2%- not ready/wants a baby, 23.9% were afraid, 19.9% had lack of knowledge and 10.4% were advised against. Previous workers reported high figure (43.4%) for lack of knowledge (15)

The main (58.8%) source of information for previous use of family planning method was the health care.

The distribution of the index abortion with gestations was higher (38.1%) for 7-12 weeks, 30.5% for 13-18 weeks. Previous workers had the same findings (15)

The index abortion occurred due to problems with family planning in a high proportion -47% (174). The family planning method failure was 8.1% (30) with the pill being the highest (46.7%) followed by injection (33.3%) and calendar method (13.3%). Poor compliance was -24.3% (90) with again the pill being the highest 57.8%, followed by injections. Family planning inaccessibility, unavailability and lack of awareness contributed to 2.7%, 1.6%, and 1.3% respectively.

Post abortion counseling for family planning during the index abortion was very minimal (15 % only) and only 27% chose family planning with 30% choosing pills, 2% for IUCD, 10% for Norplant, 2% for calendar method, 40% for injections, 6% for abstinence and 10% for bilateral tubal legation. Majority (72%) did not choose family planning and the reasons given varied and follows: 48.9% were not ready, 6.7% were afraid, 36.7% had lack of knowledge and 3.3% were advised against.

Majority (87.1%) were not referred for family planning services and for those referred, 50% were to Kenyatta National Hospital's (KNH) Family Welfare Clinic (FWC) 66 and 33.5% to private clinics/hospital

Post abortion counseling for HIV was low (only 10%) even though the HIV awareness for the patients was high (95.7%), and only 5.2% did not know preventive strategies for HIV.

Post abortion counseling for sexually transmitted infections (STI's) was low (only 9.7%) but a higher proportion (66.7%) knew dangers from STI's though only 18.4% were aware of effects of STI's on cancer of the cervix. About 80% knew preventive strategies for STI's

Post abortion counseling for both cancer of cervix and pap smear was very low (3.8% and 1.6% respectively), 10.3% were aware of risks of developing cancer of

cervix and only 1.1% answered correctly that all women who are sexually active should have a pap smear.

Post abortion referrals for Pap smear was quite low (only 1.6 %) with majority (66.7%) being referred to KNH FWC - 66 and City Council Clinics (33.3%).

The quality of emergency post abortion treatment was not good enough in terms of time taken for treatment to be offered as about 38% took more than 6hours to be offered emergency evacuation, although 63.8% were offered treatment within 5 hours of reaching the hospital. Current recommendation in Kenya is that emergency evacuation should be offered within 2hours of diagnosis (38). Most of the abortions were managed well as per the gestation i.e. MVA done for 77% for those less than 7weeks and 75% for those 7-12 weeks. Most (68.1%) were not informed of their diagnosis and only 27% knew the correct diagnosis as per the one written on the files. This shows that the quality of care is poor as the patients have a right to be informed of their diagnosis and should give informed consent before any procedure.

Post abortion referrals to other reproductive health services was poor with only 11.4% referred and of those referred, 23.1% were to Gynecologic out patient clinic (GOPC), 11.5% to FWC- 66, 38.5% to adolescent clinic and 26.9% to services outside KNH. Format of referrals was mainly (88.5%) verbal with consultation request form constituting only 11.5%.

CONCLUSIONS FROM THE STUDY

1. Teenagers formed about 10% of post abortion care patients.

2. Most (67%) post abortion care patients had low socio-economic status.

3. Higher level of education is associated with high use of family planning and schools played an important role on information on STI's (22%).

4. Post abortion counseling for family planning was low (15.1%) but the previous awareness was high(89.2%)

5. Post abortion counseling for HIV and STI's was low (10.3% and 9.7% respectively).The previous awareness was high -95.7% for HIV and 82.7% for STI's.

6. Post abortion counseling for both cancer of cervix and pap smears was low (3.8% and 1.6 % respectively). The previous awareness was also low-36.2% and 15.7% respectively

7. Quality of post abortion emergency treatment was not good as about 38% had to wait for more than 6hours for emergency evacuation,

most(68%) were not informed of their diagnosis. However over 75% of the abortions were managed well as per the gestational age.

8. Post abortion referrals to other reproductive health services was low (only 11.4% referred) with only 1.6% referred for pap smear and only about 22% for family planning and 88% were referred verbally

RECOMMENDATIONS

It thus recommended that: -

1) Adolescent/teenagers forms a significant proportion of post abortion patients(10%) thus adolescent/reproductive health issues be given more emphasis.

2) Policy issues on safe abortion be given an urgent priority by the Government as 67% of post abortion patients managed at KNH are of low socio-economic status and are likely to get complications of unsafe abortions.

3) Efforts on promoting girl education to continue as education has positive effect on use of family planning.

4) The efforts on post abortion care at Kenyatta National Hospital and other hospitals in the Republic need to be increased so as to achieve the goals for safe motherhood and reduce maternal morbidity and mortality.

5) Further research on factors affecting quality of post abortion care including staffing, staff knowledge,attitude and practice

REFERENCES

1. IPAS: Advances in Abortion Care Volume 4, Number 1 Carrboro, NC 1994.

2. Khama R.: Decentralizing PAC services: Insights from a Decade in Africa.

3. World Health Organization: Complication of Abortion Technical and Managerial Guidelines for Prevention and Treatment Geneva, WHO 1994a.

4. Lwanga, C.: Abortion in Mulago Hospital, Kampala E. Africa Med. J. 57: 138 1980.

5. Population Report Series F: Number 7:105: July 1980.

6. Orero S. O: Post Abortion Care: Paper Presented at the International Conference on Safe Motherhood on Effective Strategies to Promote Quality Maternal and Newborn Care - Nairobi May 22-26-2000.

7. Lema V. M. Kamau R. K. Rogo K. O. Epidemiology of Abortion in Kenya. The context for the study of adolescence - 1989.

8. Omuga B. O. O. Presentation of abortions and its preventive problems at Kenyatta National Hospital. M. Med Thesis. University of Nairobi, 1989.

9. Kizza A. P. M. Incomplete Abortion Treated with Karman's Cannula and Syringe. M. Med Thesis. University of Nairobi - 1989.

10. Aggarwal, V. P and Mati J. K. G. Epidemiology of Induced Abortion in Nairobi, Kenya. J. Obst. Gym. East Cent Afr 1:54:1982.

11. Aggarwal, R. P. and Mati J. K. G. Review of Abortions at Kenyatta National Hospital. E. Africa, Med. J. 57:138:1980.

12. Narone, R. K. Ngulube J. J. and Naron J. N. A Study of Spontaneous Abortion in Zambia J. Obst. Gyn. East. Cent. Afr 2:150,1983.

13. Mtimavalye, L. A. R. Reproductive Health Care among Women in Africa. Current Trends and the Future J. Obs. Gyn. East Cent. Afri. 1:48; 1982.

14. Omu A. E., Oronsayee. A.U: Fall M. K. B and Asupuo E. E. J. Adolescent Induced Abortion in Benin City, Nigeria. Int. J. Gynecology. Obstet. 19:495:1981.

15. Mutungi A. - Contraceptive Acceptance and Continuation in Women Managed for Incomplete Abortion in Kenyatta National Hospital - M.Med thesis,University of Nairobi, 1990

16. Mchaurin KE: Health System Role in Abortion Care. The Need for a Pro-Active Approach, Issues in Abortion Care. Carrboro North Carolina, IPAS 1991.

17. Wolf M: Consequences and Prevention of Unsafe Abortion: Report to Two Panels at the III World Congress of Gynecology and Obstetrics. Issues in Abortion Care 3. Carrboro, North Carolina, IPAS, 1994.

18. Advances and Challenges in Post Abortion Care Operation Research - Summary Report of a Global Meeting 19-21 January 1998 New York.

19. Ministry of Health - Kenya: National Reproductive Health Strategy 1997 - 2010: November 1996.

20. Khama R., Lisa B., Ombaka C. - Community Level Dynamics of Unsafe Abortion in Western Kenya and Opportunities for Prevention.

21. Otsea C - The Place of Abortion Care in Safe Motherhood Programmes. Journal of Obstetrics and Gynecology of East and Central Africa Vol. 11 1995.

22. WHO - A tabulation of Available Data on the Frequency and Mortality of Unsafe Abortion 2nd ed. Geneva WHO 1994b.

23. Wolf M. and Benson J: Meeting Women's Family Planning Needs for Post Abortion Family Planning - International Journal of Gynecology and Obstetrics 45 (Supply 53 - 525, 1994.

24. WHO Geneva 1993: A Tabulation of Available Data on the Frequency and Mortality of Unsafe Abortion.

25. Greens Lade F. et al: Summary of Clinical and Programmatic Experience with Manual Vacuum Aspiration. Advance in Abortion Care 3(2), 1993.

26. Rogo, K. O. "Induced Abortion in Sub-Sahara Africa" - East Africa Medical Journal Journal 70: 395, 1993.

27. Lahteenmaki P: Post Abortal Contraception: Annals of Medicine 25(2): 185 - 9, 1993.

28. Ministry of Health (Kenya) - Reproductive Health/Family Planning Policy Guidelines and Standards for service Providers - Revised June 1997.

29. Lahteenmaki P et al: Return of Ovulation After Discontinuation of Oral Contraceptives. Fertility and Sterility 34(3): 246 - 249, 1990.

30. Johnson BR, Benson J. AND Hawkins BC: Reducing Resource Use and Improving Quality of Care with MVA. Advances in Abortion Care 2(2), 1992.

31. Hart and Macharper 7: Clinical Aspects of Induced Abortion in South Australia from 1970 - 1984. Australian and New Zealand Journal of Obstetric Care at First Referral Level 30(16)-230, 1986

32. WHO - Geneva 1991: Essential Elements of Obstetric Care at First Referral Level.

33. WHO: 1997 Post Abortion Family Planning - A Practical Guide for Programme Managers - Division of Reproductive Health - Technical Support.

34. Onyango S. - IPAS - Africa Report - Kenya November 1999.

35. Reproline Internet Search: Maternal and Neonatal Health: Post Abortion Care 2000.

36. Wanjala S, Murugu NM, Mati KG Mortality due to Abortion at Kenyatta National Hospital 1974 - 1983. East Africa Medical Journal 60;250,1984

37. Makokha A. E: Maternal Mortality - KNH 1972 - 1977. East Africa medical journal 57:451; 1980

38. Standards for maternal care in Kenya, collaboration of profesional societies of kenya and the united kingdom-Ministry of Health october 2002

APPENDIX I

OBSTETRIC LONG COMMENTARY

data collection questionnaire

QUESTIONNAIRE FOR KNOWLEDGE, ATTITUDE AND RPACTICE ON PERINATAL HIV TRANSMISSION AND PREVENTIVE MEASURES AMONG ANTENATAL MOTHERS AT KENYATTA NATIONAL HOSPITAL

SECTION 1:

SOCIO DEMOGRAPHIC CHARACTERISTICS

1. Code Number 01,02,03 _____

2. Date

3. Age
(i) 13-20 ☐
(ii) 21-28 ☐
(iii) 29 - 35 ☐
(iv) ≥36 ☐

4. Residence
(i) Nairobi ☐
(ii) Outside Nairobi ☐

5. Current Marital Status
(i) Single ☐
(ii) Married ☐
(iii) Separated / Divorced ☐
(iv) Widowed ☐
(v) Others (Specify)

6. Religion
(i) Catholic ☐
(ii) Protestant ☐
(iii) Muslim ☐
(iv) Others (Specify) _____

7. Education
What level of education have you attained?
(i) None ☐
(ii) Primary ☐
(iii) Secondary ☐
(iv) University / College after Secondary D
(v) Others (Specify) _____

8. Occupation
(i) Unemployed ☐
(ii) Domestic Servant ☐
(iii) ' Business Lady ☐
(iv) Professional Lady ☐
(v) Others (Specify) _____

SECTION 2:-
REPRODUCTIVE HISTORY

9. How many times have you been pregnant before this pregnancy
_____

10. How many pregnancies have you carried to term
_____

11. How many miscarriages have you had before this pregnancy?
_____

Parity
_____

SECTION 3:-

KNOWLEDGE ON PERINATAL H1V TRANSMISSION

12. (i) Have you heard about H1V infection?
(ii) If yes, from what source _____
(iii) What is it? _____
(iv) How is it transmitted?
_____

13. Can H1V infected mothers get babies with HIV?
Yes ☐
No ☐
Not Sure ☐

14. Can a child be born with HIV infection?
Yes☐
No☐
Not Sure ☐
If Yes.what is the source? C.?(Skip Q15 if the response is yes)

i) Transplacentalty from the mother ☐
(ii) Vaginal Delivery ☐
(iii) Episiotomies ☐
(iv) Nasopharyngeal Suction of New Born ☐
(v) Breast Feeding ☐
(vi) Instrumental Delivery ☐
vii) Others (Specify) _____

15. Does having sexual intercourse with HIV infected partner during pregnancy have any effect on mother to child HIV transmission?
(i) Yes ☐
(ii) No ☐
(iii) Not Sure ☐
(iv) If yes how _____

16. Does having other Sexually Transmitted infections affect mother to child HIV Transmission?
(i) Yes ☐
(it) No ☐
(iii) Not Sure ☐

(iv) If yes how._____

SECTION 4:

KNOWLEDGE ON PREVENTIVE MEASURES ON PERINATAL HIV TRANSMISSION'

17. Can a HIV infected mother get a baby without HIV infection
(i) Yes ☐
(ii) No ☐
(iii) Not Sure ☐

18. (a) What effect does Breast Feeding have on Perinatal HIV Transmission
(i) No effect ☐
(ii) Increases Transmission ☐
(iii) Decreases Transmission ☐
(iv) Not Sure ☐

18 (b) Source of Information
Medical Staff ☐
Media ☐
Spouse / Friends ☐

18.(c (i) Does HIV / AIDS have a cure?
Yes ☐ No ☐ Not Sure
(ii) Are there anti retroviral drugs that can reduce Perinatal HIV transmission?
Yes ☐
No ☐
Not Sure☐
(iii If yes, name any _____
(iv) Source of Information
Medical Staff ☐
Media ☐
Spouse / Friends ☐

19(i) Does elective caesarian section have any effect on Perinatal HIV Infection.
Yes ☐
No ☐
Not Sure ☐

(ii) If yes, what effect? _____„

(iii) Source of information

Medical Staff ☐
Media ☐
Spouse / Friends ☐

20(i) Do condoms have a role in Perinatal HIV Transmission?
Yes ☐ No ☐ Not Sure ☐
(ii) If yes. what is the role? _____
(iii) Source of Information
Medical Staff ☐

Media ☐
Spouse / Friends ☐

21Which of the following would prevent Perinatal HIV Transmission?

	Yes	No	Not Sure
(i) Episiotomies (cutting: genitalia			
(ii) Repeated vaginal examination			
(iii) Multiple sexual intercourse during pregnancy			
(iy) Early rupture of membranes			
(v) Avoiding breast feeding			
(vi) Avoiding sexual intercourse when having vaginal discharge			
(vii) Early treatment of vaginal discharge			

SECTION 5:

ATTITUDE ON PREVENTIVE MEASURES ON PERINATAL HIV TRANSMISSION

22. Do you think that all pregnant mothers who are HIV positive should be put on antiretroviral drugs.
Yes ☐
No ☐
Not Sure ☐

23 Do you think that all mothers who are HIV positive should breast feed?
Yes
No ☐
Not Sure ☐

24. Do you think that all pregnant mothers who are HIV positive should be Offered the option of elective caesarian section.
Yes ☐
No ☐
Not Sure ☐

25. Do you think that all-pregnant mothers whose spouse test HIV positive should use condoms?
Yes ☐
No ☐
Not Sure ☐

26. Do you think all pregnant mothers should be tested for HIV?
Yes ☐
No ☐
Not Sure ☐
27. Do you think that all mothers should disclose their HIV status to:-
(i) Health workers?

Yes No ☐ Not Sure ☐
Others (Specify) _____
(ii) Spouse?
Yes ☐ No ☐ Not Sure ☐

Others (Specify) _____

SECTION6-

PRACTICE ON PREVENTIVE MEASURES ON PERINATAL HIV TRANSMISSION

28(a) If you were informed that you are HIV positive, would you continue breast-feeding?

Yes ☐ If yes, state the reason

_____

No ☐ If no, state the reason

_____

Not Sure ☐ If not sure, state the reason

_____

(b) What are your cultural beliefs about breast-feeding?

_____

I). Increases Perinatal HIV Transmission ☐
II). Decreases Perinatal HIV Transmission ☐

29. If you were informed that you are HIV positive, would you take anti-retroviral drugs?
Yes ☐
No ☐
Not Sure ☐

30. If you were informed that you are HIV positive, would you opt for elective caesarian section?
Yes ☐ No Not Sure ☐

31. If you tested HIV positive,
(1)Would you inform your health care provider
Yes ☐ If yes, state the reason

_____

No ☐If no, state the reason

_____

Not Sure ☐
(ii) Would you inform your spouse?
Yes ☐ If yes, state the reason

_____

No ☐ If no, state the reason

_____

Not Sure
(iii) Would you encourage your spouse to be tested?
——————

Yes ☐ If yes state the reason _____
No ☐ If no, state the reason ——————————

Not Sure ☐

32. Would you encourage your spouse to use condoms if he tested HIV positive?
Yes
No ☐
Not Sure ☐

33. HIV status of the antenatal mother (from the antenatal records).

Yes ☐
No ☐
Declined Testing ☐

Informed consent form:

Code Number ☐

I voluntarily agree to participate on the study on knowledge, attitude and practice on perinatal HIV transmission and preventive measures among antenatal mothers at Kenyatta National Hospital which aims at recommending strategies on prevention of perinatal HIV transmission and 1 have been informed that this will not interfere with my antenatal care and all the information obtained will be treated with utmost confidentiality. I further agree that my HIV results can be made available for the purpose of this study.

Sign _____

Date _____

APPENDIX II

GYNAECOLOGY LONG COMMENTARY

Data collection questionnare

QUESTIONARE FOR POST ABORTION CARE SERVICES AT KENYATTA NATIONAL HOSPITAL

SECTION ONE

SOCIO - DEMOGRAPHIC CHARACTERISTICS

1. Code Number ☐☐☐☐ 01,02,03, etc.

2. Date ☐☐☐☐☐☐

3. Date of Birth ☐☐☐☐☐☐☐☐ Age (Yrs) _____

4. Place of Residence
(i) Nairobi ☐ Estate _____
(ii) Outside Nairobi ☐

5. Current Marital Status
(i) Single ☐
(ii) Married ☐
(iii)Separated / Divorced ☐
(iv) Widowed ☐
(v) Others - Specify _____

6. Religion
(i) Catholic ☐
(ii) Protestant ☐
(iii) Muslim ☐
(iv) Others (Specify) _____

7. Education
What level of education have you attained?

(i) None ☐
(ii) Primary ☐
(iii) Secondary ☐
(iv) University / College after Secondary ☐

8. Occupation
(i) Unemployed
(ii) Domestic Servant ☐
(iii) Manual Farm Worker
(iv) Small Scale Business Lady
(v) Professional
(vi) Commercial Sex Worker
(vii) House Wife
(viii) Others (Specify) _____

SECTION 2:

REPRODUCTIVE HISTORY

9. How many times have you been pregnant before this pregnancy?

10. How many pregnancies have you carried to term? _____

11. (a) How-many miscarriages have you had before this pregnancy?
(b) At what gestation were they?

(i) ≤ 6 weeks
(ii) 7-12 weeks
(iii) 13-18 weeks
iv) >_ - 19 weeks

(c) The parity is _____

12. For the miscarriage you have had before,
(a) Were you treated?
Yes ☐ No ☐
(b) If yes how _____
(c) Did you receive any counseling?
Yes ☐ No ☐
(d) If yes what issues were covered _____

SECTION 3:-

POST ABORTION CARE

Family Planning

13. When was the first day of your last normal menstrual period? ☐☐
When did this miscarriage occur? ☐☐☐☐☐☐
Calculate gestational age in weeks ☐☐☐

14. (i) Have you ever been informed about Family Planning method before this pregnancy?
Yes ☐ If yes/ from what source _____
No ☐

15. Have you used Family Planning before?
Yes ▫ If yes, which method_____
No ▫ If no, why _____

16. Did the current pregnancy occur due to any of the following problems with Family Planning?

(i) Family Planning method failure
Specify method _____

(ii) Poor compliance
Specify Method _____
(iii) Family Planning inaccessibility
'iv) Family Planning unavailability
(v) Lack of awareness of Family Planning
(vi) Others _____
(Specify)

17. After this miscarriage/ were you informed about Family Planning?
Yes ▫
No ▫
If yes, what were you informed _____
_____

18 Did you choose any Family Planning method after this miscarriage?
Yes ▫ If yes, which method _____
No ▫ If no, why

19. Were you referred anywhere for Family Planning after this miscarriage.
Yes ▫ If yes/ where _____
No ▫

Post Abortion Counseling for HIV and Sexually Transmitted infections

20. Have you ever been informed about HIV before this miscarriage?

Yes ▫
No ▫
(ii) If yes, from what source _____
(iii) What were you informed about it _____

21. After this miscarriage, were you informed about HIV?
Yes ▫ If yes/ what information did you receive _____
No ▫

22. State any preventive strategies for HIV transmission you are aware of
_____

23. Have you ever been informed about Sexually Transmitted Infections (ST1) before this pregnancy?
Yes ▫ If yes, from what source _____
No ▫

23. Did you receive any information about Sexually Transmitted Infections after this miscarriage?
24.
Yes ▫
No ▫
If yes/ what information _____
_____

25. What are some of the dangers of sexually transmitted infections

26. What are some of the preventive strategies against Sexually Transmitted Infection

Post Abortion Counseling for Ca Cervix and Pap Smear

27. Have you heard about cancer of the cervix before this miscarriage?
Yes ▫
No ▫
If yes, what source? _____

28. Were you informed about cancer of the cervix after this miscarriage?
Yes ▫
No ▫
If yes, what source? _____

29. Are there any risk factors for developing ca cervix you know?
Yes ▫
No ▫
If yes, which ones _____

30. Does having Sexually Transmitted Infections have any effect on developing cancer of the cervix?
Yes ▫
No ▫
Does not know ▫

If yes, what effect _____

31 }. Are there any preventive strategies for developing ca cervix?
Yes ▫
No ▫
Does not know ▫

If yes/ which one _____

32. Have you ever heard about pap smear before this miscarriage?
Yes ▫
No ▫
If yes, from what source _____

33. Were you informed about pap smear after this miscarriage?
Yes ▫

No ▫

If yes/ what information did you receive? _____

34. (i) What is the importance of pap smear?
(ii) Who should have a pap smear? _____
(iii) How frequently should pap smear be done? _____

35. Were you referred for a pap smear?

Yes ▫
No ▫

If yes/ where were you referred to _____

Quality Treatment for Post Abortion

36. (a) During this miscarriage, what time did you reach the hospital (Date and Time)?
(b) What treatments did you receive?

(i) Uterus evacuation ▫
(ii) Operation through abdomen ▫
(iii) Drugs ▫
(iv) Others (Specify) _____
(c) What time did you receive the treatment (Date and Time)
Calculate time take in hours_____

37. Were you informed about your diagnosis?
Yes ▫
No ▫

If yes/ what is your diagnosis _____

(Diagnosis from discharge summary / file is

_____

38. Which drugs were you discharged on? _____

(Check also from discharge summary / prescription

_____

Post Abortion Referrals

39. Were you referred to other reproductive health services?

Yes ▫

No ▫

If yes, which one _____
(i) Gynae out patient clinic (GOPC No. 18)
(ii) Family Welfare Clinic (FWC66) ▫
(iii) Adolescent clinic ▫
(iv) Psychiatric clinic ▫
(v) Others specify _____

40. How was the referral made?
i. Through consultation request form
ii. Through telephone
iii. Others (Specify) _____

41. From the diagnosis was the all the right referrals made
Yes ▫
No ▫

If yes, which one _____

_____

INFORMED CONSENT FORM:

Code Number ▫

I voluntarily agree to participate on the study on post abortion counseling and services at
Kenyatta National Hospital which aims at recommending quality service provision for post
abortion care. I have been informed that all the information obtained will be treated with
outmost confidentiality.

Sign _____

Date _____

APPENDIX 111

LETTERS OF ETHICAL APPROVAL

Tel: 726300 - 19
726550 - 9
726562 - 6
726450 - 9
726581 - 2
Fax: 725272

KENYATTA NATIONAL HOSPITAL
P.O. Box 20723,
NAIROBI.

Email: *knh@healthnet.or.ke*

Ref: KNH-ERC/01/1128

28 August 2001

Dr. Ong'ech John O.
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi

Dear Dr. Ong'ech,

RE: **RESEARCH PROPOSAL** "KNOWLEDGE, ATTITUDE AND PRACTICE ON PERINATAL HIV TRANSMISSION AND PREVENTIVE MEASURES AMONG ANTENATAL MOTHERS AT KENYATTA NATIONAL HOSPITAL" (P49/5/2001)

This is to inform you that the Kenyatta National Hospital Ethical and Research Committee has reviewed and **approved** the revised version of your above cited research proposal.

On behalf of the Committee I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Thank you.

Yours faithfully,

PROF. A.N. GUANTAI
SECRETARY, KNH-ERC

c.c. Prof. K.M. Bhatt,
Chairman, KNH-ERC,
Dept. of Medicine, UON.

Deputy Director (CS),
Kenyatta N. Hospital.

Supervisors: Dr. M'Imunya Machoki, Dept. of Obs/Gynae, UON
Dr. Weston W. Khisa, Dept. of Obs/Gynae, KNH

The Chairman, Dept. of Obs/Gynae, UON

The Dean, Faculty of Medicine, UON

Tel: 726300 - 19
726550 - 9
726562 - 6
726450 - 9
726581 - 2
Fax: 725272

KENYATTA NATIONAL HOSPITAL
P.O. Box 20723,
NAIROBI.

Email: *knh@healthnet.or.ke*

Ref: KNH-ERC/01/1126

23 August 2001

Dr. Ong'ech John O.
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi

Dear Dr. Ong'ech,

RE: **RESEARCH PROPOSAL** "POST-ARBOTION COUNSELING AND SERVICES AT KENYATTA NATIONAL HOSPITAL" (P48/5/2001)

This is to inform you that the Kenyatta National Hospital Ethical and Research Committee has reviewed and **approved** the revised version of your above cited research proposal.

On behalf of the Committee I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of data base that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Thank you.

Yours faithfully,

PROF. A.N. GUANTAI
SECRETARY, KNH-ERC

c.c. Prof. K.M. Bhatt,
Chairman, KNH-ERC,
Dept. of Medicine, UON.

Deputy Director (CS),
Kenyatta N. Hospital.

Supervisors: Dr. M'Imunya Machoki, Dept. of Obs/Gynae, UON
Dr. Weston W. Khisa, Dept. of Obs/Gynae, UON

The Chairman, Dept. of Obs/Gynae, UON

The Dean, Faculty of Medicine, UON