CASE REPORTS AND COMMENTARIES IN OBSTETRICS AND GYNAECOLOGY PRESENTED FOR PART FULFILMENT OF MASTER OF MEDICINE IN OBSTETRICS AND GYNAECOLOGY:

UNIVERSITY OF NAIROBI

BY

DR CHEGE M.J

JANUARY 2007

DECLARATION:

This is to certify that the cases recorded and commentaries in this book are my original work and have not been presented in any other University.

I further certify that all the cases presented here were managed by me under the supervision of the senior Members of the department of Obstetrics and Gynaecology at Kenyatta National Hospital.

SIGNED.....

DATE.....14/11/2026

DR CHEGE M.J; MBChB (1995) Nbi.

Certificate of supervision.

This is to certify that Dr Chege M.J researched upon the long commentaries presented in this book under my guidance and supervision and that this book has been presented with my approval.

Signed....Gichuhi.....

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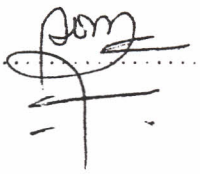
This is to certify that Dr Chege M.J researched upon the long commentaries presented in this book under my guidance and supervision and that this book has been presented with my approval.

Signed.....  .....

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Finally; let me thank all my colleagues, nurses and midwives and paramedical staff for their different roles that helped to make my studies enjoyable.

When all is said and done; God made it possible and all of us were vessels for the accomplishment of his plans for my studies.

DEDICATION:

I dedicate this book to my whole family for their support. My parents for their encouragement even when things seemed too tough. Nyokabi, my wife for urging me on and on.
Cici was giving me space and time to read.

I have listened to advice and accepted instructions and now, I am wise.

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Gynaecology short cases:

ACRONYMS:

ACOG	American College of Obstetricians and Gynaecolgists.
A.N.C	Ante Clinic Care
APH	Ante Partum Haemorrhage
BEOC	Basic Emergency Obstetric care.
C/S	Caesarean section.
CEOC	Comprehensive Emergency Obstetric care.
CPD	Cephalo-pelvic disproportion.
CSW	Commercial Sex Worker
DDI	Decision to delivery interval.
E.C	Emergency Contraception
E.D.D	Expected Day of Delivery
END	Early Neonatal Death.
FSB	Fresh still birth.
HBDH	Homa bay District Hospital
HIV	Human immunodeficiency syndrome.
ICU	Intensive care unit.
I.U.C.D	*Intra-uterine contraceptive device.*
K.D.H.S	Kenya Demographic Health Survey.
KNH	Kenyatta National Hospital.
L.M.P	Last Menstrual Period
MSB	Macerated still birth
NBI	Nairobi.
N.B.U	New Born Unit.
PET	Pre-eclamtic toxaemia
POPP	Persistent occipital posterior position
PPH	Post partum haemorrhage.
PROM	Premature rupture of membranes.
PPROM	Preterm premature rupture of membranes
RCT	Randomised Control Trial
UNFPA	*United Nations Family Planning association.*
UNICEF	United Nations Children Education Fund
WHO	World health organization.

INTRODUCTION:

KENYATTA NATIONAL HOSPITAL

Kenyatta National hospital, the largest hospital in Kenya, is situated in Nairobi. It is about 3 kms from the city center off Ngong road. It stands on about 304 acres of land and it was started in 1901 as the Native Civil council Hospital, later became King George hospital. In 1964, it was renamed Kenyatta National hospital. The hospital is currently run as a state corporation through a parastatal board established in 1986 by an act of parliament. It serves as a referral center as well as serving the population within and around the city. It provides curative, preventive, promotive and rehabilitative services in all medical disciplines. It is a training center for undergraduate and postgraduate students from the college of health sciences of the University of Nairobi. It is also a training centre for nurses, clinical officers and other paramedics from the Kenya Medical Training College. The hospital is housed in a ten (10) storey building complex with extensions that serve as outpatient clinics, theaters, casualty, intensive care unit and laboratories.

OBSTETRIC AND GYNAECOLOGY UNIT:

The obstetric and gynecology unit of Kenyatta National hospital was commissioned in 1965.The unit provides both out-patient and in-patient services. The out-patient services are provided at casualty department (1D), antenatal clinics, post-natal clinics gynaecology clinics and the family welfare clinic (FWC). The in-patient services are provided in labour ward, acute gynaecology ward, and cold gynaecology ward and antenatal / postnatal wards.

In terms of personnel, the unit is divided into three firms, each headed by a senior consultant obstetrician/gynaecologist, with a team of senior registras, registras, interns, nurses and paramedical staff. The senior medical staff are from both the university of Nairobi and Kenyatta National hospital.

Laboratory services are provided by the hospital laboratories. In addition to the hospital laboratory services, the Department of Obstetrics and Gynaecology of the University of Nairobi offers the following laboratory services for the hospital: semen analysis, hormonal analysis, radio-immunoassay, cytology, chromosome analysis, bilirubin

spectro-photometry, surfactant test and glucose tolerance test. Radiological examinations such as ultra sound are provided by both Nairobi University and Kenyatta National Hospital in their respective radiology departments.

Casualty department

This offers services 24 hours a day and all obstetric and gynaecologic emergencies are screened here. Senior house officers offer obstetric and gynaecological coverage 24 hours a day in shifts. Most patients are treated and discharged or referred to the gynaecology or obstetric clinics. Patients requiring admissions are admitted either in labour ward or acute gynaecological ward. The casualty department manages incomplete abortions. Manual vacuum aspiration is done and the patients observed and if stable are then allowed home. Resuscitation of acute cases is also done before the patient is admitted.

The patients that require acute gynaecology management are evaluated further and those that qualify for admission are admitted, otherwise they are treated as outpatients.

Antenatal care Clinic (ANC)

ANC patients are booked on Monday morning by a senior registrar and the three firms work in rotation, booking about 50 clients every week. This booking is slowly being phased out as the hospital encompasses the focused ante natal care WHO model. The patients report to the clinic at 7.30 am and are interviewed by the nurse who records personal data, medical and obstetric history. The patient's height, weight and blood pressure measured and urinalysis is also carried out and the results recorded in the antenatal card.

A senior registrar from the booking firm reviews the patients and selects the high risk patients for follow up. The risk factors considered including the following:

- Primigravidas, especially the adolescent and those above 35 years.
- Previous operations or complications or complicated deliveries e.g. vacuum extraction, caesarian section, post-partum haemorage, ruptured uterus and so on.
- Grandmultiparous woman
- Bad obstetric history including habitual abortions, still births or neonatal deaths.

- Medical diseases complicating pregnancy such as cardiac disease, hypertension, renal diseases, diabetes mellitus, anaemia, thyroid disease, renal disease and deep venous thrombosis.
- Previous gynaecological problems e.g. repaired genital fistulae, myomectomy, tubal surgery for infertility or ovulation induction.

Other indications include; multiple gestation, breech presentation and pre-eclampsia.

There are also those that wish to attend the ante-natal clinic and have none of the above risk factors, they are not denied the services.

All booked patients have their names entered in a register; they then proceed to the examination room where the registrar does a thorough general and systemic examination. The following are particularly noted during the examination.

- The condition of the mother
- Gestation age
- Uterine size,
- Foetal lie and presentation,
- Foetal activity and heart tones.

Those patients requiring admission are admitted to the relevant wards. The rest of the patients get their full antenatal profile done and then given appointments for follow up. The antenatal profile entails full haemogram, blood group and Rhesus factor, screen for syphilis and HIV. Trained counselors counsel the clients before HIV testing.

Ante natal Follow-up.

Under the WHO model, clients are divided into two groups. Those eligible to receive routine ANC (basic component) and those that require special care depending on their risk factors. There is a preset criteria used to determine the eligibility of the women for the basic component. There is a classifying form that has a checklist to assist in the classifying. Women answering yes to any of the 18 questions would not be eligible for the basic component of the WHO ante natal care model. Ideally, the clients are to make four visits to the clinic. The model is tailored with an assumption that the first ante natal visit is done at or before twelve weeks. The second visit is scheduled to coincide with 22-

26 weeks. Third visit at between 30 and 32 week then last visit at 36 weeks. However, pregnancy is dynamic and a woman can shift from one level to the other. Patients with medical or obstetrical conditions that necessitate more frequent visits are accorded the same. At each visit, apart from the routine examination (weight, blood pressure and urinalysis), health education is offered. The client is also encouraged to ask questions about the pregnancy and to raise her fears. There is an established hot-line for the clients to call in case of something they are not very sure when they are at home. The telephone line is located in labor ward. Feotal growth is monitored through fundal height and comparing with the gestation by dates. The foetal heart tones, foetal lie and presentation is noted and recorded in antenatal card that is kept in the hospital. For those in their first pregnancies or those who may have delivered three years earlier or more are given two doses of tetanus toxoid four weeks apart. Those that do not fall in this class are given a booster tetanus toxoid dose in the second trimester. The breasts are examined at least once in the third trimester. Those with inverted nipples are taught how to evert them in preparation for breastfeeding.

Clients with severe medical conditions such as pre-eclampsia, deep venous thrombosis, anaemia and diabetes are admitted before term for stabilization before delivery.

At 36 weeks, clinical pelvimetry is done on all primigravidas and radiological pelvimetry on patients with a borderline pelvis. Amniocentesis for surfactant test is done at 38 weeks in those planned for induction of labour or elective operative delivery.

MATERNITY UNIT:

The maternity unit is composed of labour ward, three ante-natal wards and the new born unit. Over 7000 deliveries are conducted in labour ward annually.

Labour ward has first stage rooms, two delivery rooms with 2 couches each. There is also an acute room for close monitoring for those that may have pre-eclampsia, eclampsia, post partum haemorhage, on blood transfusion etc. There is oxygen supplied for patients that require it as part of their management. There are two incubators in each delivery suite for placing of preterm or poor scoring infants before their transfer to the new born unit. Adjacent to the labour ward, there are two operating theaters that are used for both

emergency and elective caesarean sections. Currently, only one theater that is operational. Each antenatal ward has a bed capacity of 32 but many a times the patients are more and they have to share the beds. The wards handle both ante and postnatal patients. The senior house officers do a daily ward round under the supervision of a senior registrar. Each firm has one ward and a major ward round is done once a week where the consultants, senior registrars, senior house officers, clinical officers, nurses and students attend.

The paediatrics department manages the new born unit (NBU). The NBU has five rooms where by one is preserved for the infected babies and those born before arrival. The NBU has 30 incubators and 10 cots. Infants born to diabetic mothers, those with congenital malformations and those asphyxiated are admitted to NBU after delivery. The obstetric team has a good working relation with the paediatrics team. In all mothers that undergo caesarean section, a doctor from the paediatrics unit has to be there to review the baby immediately after birth.

Admission to labour ward.

Patients who attend antenatal clinic at Kenyatta National hospital (booked) present themselves in labour ward. They are examined and if not in labour and do not require acute labour ward management, they are given first doses of treatment and transferred to the ante natal wards. The patients who are un-booked are admitted through casualty but when they reach labour ward, the management is the same. There is a firm on call each week and this group manages patients and clients admitted that week. Labour ward has nurses and midwives who work independent of the firms. The team in the firms includes consultants, senior registrars, registrars and intern doctors. The clinician on the ground is the intern doctor and the registrar. They take the full history and do the physical examination to assist in the impression and diagnosis. The senior house officer makes the appropriate decision but if in a dilemma, consults his/her senior.

First stage of labour.

A. The patients in active labour are admitted in the first stage room where-by partogram is started immediately. The findings are communicated to the client in a language and style that she understands. This assists in removing the anxiety that grips some women more so those in their first pregnancy.

The charting begins immediately after admission and this forms the baseline for other decisions.

Analgesia is provided by parenteral pethidine or tramadol. No opiate analgesia is given if cervical dilatation is 6 or more centimeters. Those with meconium stained liquor but normal regular foetal heart rate are started on oxygen by mask and reviews done as dictated by the situation. It is during subsequent reviews that decisions are arrived at pertaining to the labour progress and those that need immediate action, the action is taken.

Induction of labour:

This is usually done in the morning and various methods are used. Methods employed commonly are amniotomy followed by oxytocin drip. In other cases, prostaglandins are used to ripen the cervix and followed either by rupture of membranes and or oxytocin drip infusion.

Vulvovaginal toilet.

The patient is placed on dorsal position with her lower limbs flexed and the knees and hips fully abducted. The examiner washes the hands then dons sterile gloves and uses sterile swabs soaked in an antiseptic solution. Vuval draping is done with sterile towels then examination proceeds. Five soaked swabs are held with the right hand and dropped one at a time to the left hand which is used to swab the vulva. The swabbing of the labia is done anteroposteriorly starting with one of the labia minora and proceeding outwards to the labia majora on alternate sides, left then right. The left hand is then used to part the labia thus exposing the introitus. The last swab in the right hand is then used to swab the urethra and the vestibule anteroposteriorly. Digital or speculum examination then follows.

Speculum examination.

This examination is done especially for patients who come complaining of per vaginal bleeding or drainage of liquor prior to onset of labour. The patient is placed in semi-lithotomy position and vulva aseptically cleaned and then draped with sterile towels. The labia are parted with the left hand and an appropriate Cuscos speculum that is already lubricated with K-Y jelly is inserted using the right hand. The speculum is inserted with the jaws in the vertical plane and then slowly advanced as they are rotated to the horizontal plane. The speculum is then opened and with the aid of a good source of light, the cervix is visualized and any bleeding or liquor is noted. The state of the cervix is also noted as this helps in case of cervicitis. Patient does Valsalva maneuver if the issue was liquor drainage and none seen pooling in the posterior fornix.

B. Second stage of labour.

This starts when full cervical dilatation has been achieved. The patient is then taken to the delivery room. The vulva and perineum are prepared by first doing vulvovaginal toilet then draping the perineum with sterile towels. The patient is then encouraged to bear down with each contraction. The perineal support is done using the right hand with a sterile pad. The left hand keeps the head in flexion to prevent sudden expulsion. When the delivery of the head occurs, the mouth and nares are wiped with sterile gauze to prevent aspiration of the amniotic fluid. When the head comes out, the mid-wife /doctor passes a finger around the neck to check for a cord round the neck. If the cord is found and is loose, it is slipped over the head. When the cord is tight, it is double clamped and divided. When restitution and external rotation has occurred, the anterior shoulder is then delivered by downward traction then the rest of the body follows. The cord is clamped and divided and the mother is the shown the baby and asked to confirm the sex. This reassures the mother that her baby is alive and she gets to know the sex of the baby. When the mother has prior identified risk factors, the paediatricican is usually on standby.

Third stage of labour.

At the delivery of the anterior shoulder, 0.5 mg of ergometrine is given intramuscularly to effect contraction of the uterus. In patients with cardiac condition or hypertension,

oxytocin is given instead. It is given in a dose of 5 international units as an intravenous infusion if uterine contraction does not occur spontaneously. The placenta and membranes are delivered by controlled cord traction. The birth canal is then inspected for any tears and if an episiotomy had been given, it is repaired. Post delivery, the vital signs are observed every 15 minutes for the first hour hour. Lochia loss is also monitored and if all parameters are within normal, the patient is then transferred to the lying-in wards for further overnight observation. The patients who had normal delivery are discharged after 24 hours. Rooming in is encouraged from the onset and this helps in establishing the parental child bond. The mother is advised on perineal hygiene and frequent sitz baths till healing of the episiotomy.

OPERATIVE PROCEDURES

Episiotomy

A midline or medio-lateral episiotomy is performed at crowning of the foetal head at the perineum in all cases where the perineum is tight and runs risks of tears. A medio-lateral episiotomy is commonly used in this unit because it has less risk of extension to the anal sphincter and rectum. An episiotomy is also necessary in patients who have cardiac disease when in 2nd stage as the vacuum delivery is done. During repair a gauze pack is inserted into the vagina. The apex at the vaginal mucosa is identified. From the apex, repair of the vaginal epithelium is carried on with continuous chronic catgut number 2/0. The perineal muscles are then approximated by deep interrupted sutures. The skin edge is then apposed using interrupted or continuous catgut number 2/0 burying the knots and starting from the lateral edge. The patient is advised on perineal and frequent saline sit baths until healing occurs.

Vacuum Extraction

The common indications for assisted vacuum delivery are poor maternal effort, foetal distress or cord prolapse with a fully dilated cervix, and in patients with cardiac failure. The patient is placed in lithotomy position and a digital examination is performed to

confirm a fully dilated cervix and cephalic presentation. The largest ventouse cap that fits into the vagina is applied to the foetal scalp close to the occiput. The index finger of the right hand is passed around the perineum to ensure that the maternal tissue (cervix and vaginal) is not trapped within the cup. The vacuum section pressure is gradually increased at a rate of 0.2kg/cm^2 to between 0.5 kg and 0.8 kg./cm^2. This allows for the formation of an artificial caput or 'Chignon". A medio-lateral episiotomy is made under local anaesthesia, if required at the time the head is crowning.

The traction pressure or pull is applied along the midline of the pelvis and simultaneously with the uterine contractions. Once the baby's head is delivered the ventouse cup is released immediately and the second and third stages of labour conducted as usual.

CAESEREAN SECTION

The lower segment caeserian is the commonest major obstetric operation performed either electively or as an emergency. Classical caeserian section is rarely performed except for case of transverse lie with ruptured membranes.

Preoperative Management

The haemoglobin estimation and blood grouping plus cross matching are carried out. Those undergoing operation electively are starved for 6 hours prior to the operation. Informed consent for the operation and for general anaesthesia is obtained. Two units of compatible blood are obtained. The abdominal wall, vulva and perineum are shaved clean. Pre-medication is given in the form of Atropine Sulphate 0.6mg intramuscularly half an hour before going to theatre. Cardiac patients 0.4mg of Hyoscine is used instead.

Surgical procedure

In theatre, the patient is placed in supine position and an intravenous infusion is started through a large bore needle. In semi-lithotomy position, the vulva and perineum are cleaned with 1% savlon solution.

Aseptic catheterisation is carried out and all the urine drained and the catheter is retained to provide conscious bladder drainage during operation. The patient is repositioned to supine position. The anterior abdominal wall is cleaned with antiseptic solution and

iodine/spirit solution (Betadine). Then draping with sterile drapes is done exposing only an area bounded by the mons pubis below to about 4 centimetres above the umbilicus and 2 cm on each side of the midline if sub-umbilical midline incision is to be used. If pfanniestiel incision is to be used, the upper draped border need not be placed above the umbilicus. 100% pre-oxygenation is given to the patient for five minutes then general anaesthesia is induced using intravenous Thiopentone sodium 250 to 500mg depending on the patients weight. A short neuromuscular blocking agent Suxamethoneum 100mg is used to provide muscle relaxation. Anaesthesia is maintained with Nitrous oxide and Oxygen in the ratio of 1:1 before the baby is delivered then a ratio of 2:1 is given. A total of 6 to 8 litres per minute is used depending on the circuit used. Throughout the operation, Halothane 0.5% or Trilene 0.35% is used to maintain unawareness. When the effect of Suxamethoneum has worn off, Pancuronium or d-Tubocurare, a long acting muscle relaxant is used. The abdomen is opened in layers through either a Pfannesteil incision or a midline sub umbilical incision or rarely a Para median incision. With a clean knife the incision is deepened, the rectus sheath is divided and elevated with two long artery forceps and the muscles are separated from their attachment to it by blunt dissection, and then drawn to one side to expose the peritoneum. The later is held with two straight artery forceps and opened taking care not to injure the gut. The incision limits are extended with index and middle fingers of the left hand placed intraperitoneally guiding the scissors, avoiding injury to the bladder and bowels.

The uterus is then identified; wet sterile abdominal packs are placed on either side of the uterus to prevent spillage of blood and liquor into the peritoneal cavity and to protect gut. A Doyen's retractor is then used to reflect the bladder downwards as well as to expose the uterovesical fold of peritoneum. Using a non-toothed dissecting forceps the loose peritoneum over the lower uterine segment is picked up and incised with curved scissors in an elliptical manner. The peritoneum is then stripped off the lower uterine segment with a mounted swab. The Doyen's retractor is shifted to include the lower part of the peritoneal fold in retracting the bladder away from the lower uterine segment. The lower uterine segment is then incised in the midline about two centimetres below the uterine attachment of the uterovesical peritoneal fold. Once the membranes are reached the

incision is extended laterally on either side in an elliptical manner using curved scissors directed by two fingers of the left hand and the incision is enlarged enough to allow delivery of the head and trunk. The retractor is removed and the membranes are ruptured allowing some liquor to escape. The hand is slipped into the uterus between the foetal head and the symphysis pubis, and the head is lifted gently with the fingers and palm through the incision while a modest fundal pressure is applied. After delivery of the head, the nostrils and the mouth are wiped. The shoulders are then delivered using gentle traction. The trunk delivery follows readily. The anaesthetist at delivery of the shoulders gives intravenous Ergometrine 0.5mg. The cord is then clamped and divided and baby is handed over to a midwife or assistant for resuscitation.

The placenta and membranes are delivered manually or by controlled cord traction. Green Armytage uterine clamps are used to hold the cut edges of the uterus to control bleeding and the inside of the uterus is wiped of clots and membranes. If the cervix was not dilated in labour it is dilated at this juncture with a mounted swab to allow postpartum lochia drainage. The uterus is then repaired with or without lifting it out through the incision. The uterus is closed with number 2 chronic catgut in two (some use one layer) layers, as a continuous stitch for both layers, the second layer burying the first and extending beyond its lateral edges. The visceral peritoneum is then closed with number one chronic catgut continuous stitch.

The abdominal packs are removed, the abdomen is mopped and the pelvic viscera are inspected for any abnormality. Instruments and swabs are counted, if reported correct with the initial count, the abdomen is closed in three or four layers. Number one chronic catgut is used on the peritoneum, while number two chromic catgut is used as a continuous stitch on the rectus sheath. The skin is closed with interrupted nylon or silk suture or with subcutaneous vicryl 2/0. The wound is cleaned with Hibitane solution then painted with iodine solution if it is available and covered with gauze and light strapping applied to hold the dressing in place. The catheter is removed and colour of urine is noted. The uterus is massaged and any blood clots expelled and evacuated from the vagina. A clean vulval pad is applied.

General anaesthesia is reversed with 1.2mg Atropine Sulphate and 2.5mg of Neostigmine. Extubation is done and oro-pharyngeal suction carried out. Blood loss is estimated and recorded and the patient is transferred to recovery room, then later to labour ward as the anaesthesia wanes.

Post Caesarean Section Care

The pulse, blood pressure, temperature and respiratory rate are observed and recorded half hourly until the patient is fully awake then four hourly. Intramuscularly Pethidine 50 to 100mg is given four to eight hourly for 48 hours for pain relief depending on the patient's weight. When the patient is allowed oral intake, further anaesthesia is given as oral Paracetamol 1000mg 8 hourly. Prophylactic antibiotics are administered routinely to all patients. Initially the patient is observed in labour ward and if her general condition remains stable and satisfactory, she is transferred to the lying in wards. Early ambulation is encouraged. Haemoglobin and urine bacteriological examination are done on the third postoperative day. Two to three litres of intravenous fluids are given in the first 24 hours (with at least 500mls of normal saline).

Normal diet is gradually introduced after free fluids and light diet. All stitches are removed on 7th postoperative day and the patient is discharged home with a case summary. She is advised to attend the child welfare clinic and postnatal clinic in two and six weeks respectively.

Care of the Newborn

All the Newborn babies who are normal join their mothers after deliver unless the mother is moribund. A paediatric registrar reviews all the babies with problems or where complications are anticipated together with babies delivered by operative vaginal delivery or by caesarean section. Those having problems or who are expected to develop some problems are transferred to nursery in a warm incubator. The premature babies are managed in nursery until their weight is about 2000 grams when they are discharged. All babies are immunized with BCG before discharge. The mothers without any medical or obstetric complications who have babies in nursery are lodged in a mother's hostel.

Post Natal follow-up

The clinic is held on every Friday. Only those patients who had a complicated or operative delivery are seen. The rest are followed up in their nearest facility. In this clinic the blood pressures and weights are taken, urinalysis done, history of puerperium, lactation and immunization of the baby is taken. The patient is then examined and any problems managed. Family planning advice is given and the patient is referred to the family planning clinic for appropriate method.

Family Planning Clinic

The clinic is at family welfare centre also named clinic 66. Oral, injectable contraceptives, implants, intrauterine contraceptive devices and barrier method are offered. Patients requiring postpartum sterilization under local anaesthesia have the operation done in the clinic. Patients requiring interval sterilization are counseled and given a date booked for their operation as day cases.

THE GYNAECOLOGY UNIT

This is comprised of an outpatient consultant clinic and wards 1B and 1D on the first floor of the tower block. In ward 1D, emergency services are provided throughout the 24 hours by the Acute Gynaecology team. Ward 1B caters for "cold Gynaecology cases". The patients in ward 1B are there for elective surgery or anti-neoplastic chemotherapy.

The Gynaecology Clinics

There are three outpatient clinics per week; Firm I on Tuesday, Firm III on Wednesday and Firm II on Thursday. At any time, there are one or two consultants, several senior registrars, registrars, medical students and nurses. There is an additional oncology clinic on Friday mornings for oncology patients who are on follow-up.

A colposcopy clinic is held every Friday morning for further evaluation of patients with abnormal cervical cytology. A fertility clinic is held every Monday afternoons. The majority of patients attending the gynaecology clinic are referred from other specialist clinics of Kenyatta National Hospital, other hospitals in and around Nairobi as well as from district and provincial hospitals.

Infertility cases constitute two thirds of the gynaecology consultation, followed by uterine fibroid, abnormal uterine bleeding and adnexal masses. In the clinic, history is taken, thorough physical examination is conducted and most of the investigations are carried out while the patient attends the clinic to reduce the hospital stay. These investigations include haemogram, semen analysis, Pap smear and pregnancy test among others.

Cold Gynaecology Admission (Ward 1B)

This is the non-emergency ward to which patients are usually admitted from the clinic or are transferred from the acute Gynaecology ward for further management. The ward has 32 beds divided among the three Firms. Commonly, the patients admitted her have uterine fibroids, genito-urinary fistulae, gynaecological malignancies and infertility among others.

Acute Gynaecology – Ward 1D

The emergency gynaecology ward is ward 1D on the first floor of the main block. It has 4 rooms, with each room having 8 beds giving a total of 32 beds. On average, 20 to 30 patients are admitted per day and majority are cases of incomplete abortion admitted through casualty department. They are reviewed by the houseman and reviewed by the registrar who undertakes the management in consultation with senior members of the

Firm. Other common cases include ectopic pregnancies, acute pelvic inflammatory disease (PID) and pelvic abscess.

Uncomplicated cases of incomplete abortion have uterine evacuation performed using Karman's canulla and syringe. They are discharged home on the same day stable, or the next day after overnight observation and treatment in the ward. These are also counselled on contraception and those willing are put on a method of contraception before discharge. Patients who have undergone emergency Laparatomy for ectopic pregnancy, pelvic mass, and abscess have a minimum stay of four days postoperatively.

Patients with suspected carcinoma of the cervix who require admission are admitted to this ward. They receive emergency care; blood transfusion, antibiotic and analgesic treatment. Routine laboratory investigations are carried out. Thereafter the patients are prepared for examination under anaesthesia (EUA) in Caesium theatre for staging and biopsy. They are then transferred to oncology ward for definitive management on receiving the histology report.

GYNAECOLOGIC OPERATIONS

Theatre is always available for emergency gynaecologic operations. Laparotomy for ruptured ectopic pregnancies, ovarian cysts, tubo-ovarian masses, pelvic abscesses and other minor operations such as Marsupilaization, removal of misplaced intra-uterine devices, diagnostic and suction curettage of the uterus are performed.

Each of the Firms has a day for elective operations from 8 am to 5 pm every week. The operations are done under general anaesthesia in which intravenous Sodium Thiopentone and Succinyl Choline are used for induction of anaesthesia. Nitrous oxide, Oxygen and Halothane are used for maintenance of anaesthesia. Curare is given intermittently for muscle relaxation and Atropine plus Neostigmine are used for reversal.

Preoperative Management

Patients for emergency Laparotomy are prepared for theatre immediately. Pre-medication is given as Atropine 0.6 mg intramuscularly half an hour before operation. Blood is cross-

matched and intravenous drip started. For elective operations, routine or baseline and specific relevant investigations are carried out and the date for surgery determined. The patient is starved from midnight on the evening prior to the operation. A soap enema is given in the morning. Pubic hair is shaved in theater just before the operation. Pre-medication is given in form of Atropin Sulphate 0.6mg and Pethidine 50mg intramuscularly half an hour before theatre.

Postoperative Management

Vital signs are observed half hourly until the patient fully recovers form anaesthesia and then 4 hourly thereafter. Antibiotics, usually Crystalline Penicillin 2 mega units six hourly and Gentamycin 80mg eight hourly for the first two days then oral Amoxycillin 500mg eight hourly for five days are given. The patient is maintained on intravenous fluids about 2.5- 3.5 per day until she is able to take orally. Pethidine 50 to 100mg is given every 6 or 8 hours for analgesia during the first 48 hours then oral analgesics are given. Oral feeds are re-started after ascertaining the presence of good bowel sounds. Early ambulation is encouraged to decrease the incidence of deep venous thrombosis (DVT).

Postoperative haemoglobin level is checked on the third postoperative day. The wound is inspected on the fourth postoperative day and if healing well the patient is allowed home for the removal of non-absorbable sutures on the 7th postoperative day at the nearest health facility. The patient is discharged home with a "discharge summary" and is booked in gynaecology outpatient clinic for review after six weeks.

COMMON GYNAECOLOGIC OPERATIONS

1. **Uterine evacuation**

This procedure is performed on emergency basis for incomplete abortion to empty the uterus of products of conception. A Karman's Canula and syringe is used often under no anaesthesia or sedation. The patient is placed in lithotomy position and the vulva and perineum cleaned with antiseptic solution. The patient is then draped with sterile linen. The bladder is catheterised to drain urine. A pelvic examination is carried out to

determine the size of the uterus and cervical dilation. A speculum is introduced gently into the vaginal and cervix is grasped with a tenaculum forceps (Volsellum) and the appropriate size of cannula gently inserted into the uterus. Negative pressure is applied to the syringe, which is then connected to the canulla and the valve opened. The contents of the uterus are sucked into the syringe as the canulla is moved up to the fundus of the uterus and rotated through the four quadrants of the uterine cavity.

The patient is discharged home on oral antibiotics and analgesics. If the products of conception are found to be septic the patient is started on parental broad-spectrum antibiotics.

2. **Total Abdominal Hysterectomy**

General anaesthesia is induced as described above. Vulvo-vaginal toilet is performed with Hibitane solution and the bladder catheterised aseptically. The catheter is left in situ to provide continuous bladder drainage during the operation. Pelvic examination under anaesthesia is performed and findings noted. The vagina is painted with Methylene blue. The abdomen in the cleaned with Hibitane and painted with iodine solution followed by draping with sterile towels.

The abdomen is opened in layers as described for caesarean section. The bowels are packed away form the pelvis using warm moist packs after general inspection of the abdominal viscera. The round ligaments on either side are identified clamped using straight long artery forceps and divided between the two forceps. The lateral lumps are each ligated with number 2 chronic catgut.

The anterior leaf of the broad ligament is parched forwards and incised with scissors. The next step depends on whether the fallopian tubes and ovaries are to be conserved or removed. If they are conserved, 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 with a transfixing chronic catgut number 2 sutures. The same is done on the opposite side. If the tube and ovaries are to be removed with the uterus, the infundibulopelvic portion of the broad ligament is doubly clamped with long curved artery forceps with the tips reaching the open window in the broad ligament. The ligament together with the ovarian vessels

are divided between the clamps and ligated using chronic catgut number 2. The same is repeated on 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 vaginal vault by careful blunt sharp 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.

The posterior leaf of the broad ligament on either side is cut parallel with the side of uterus to better demonstrate and skeletonize the uterine vessels between the levels of the broad ligament for clamping. The uterine vessels are doubly 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 vessels that are not included in the clamp. Before clamping and cutting the uterine vessels it is always advisable to palpate the lower portion of the pelvic ureters as they cross beneath the uterine artery, lateral to 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 chronic catgut number 2.

The uterus is retracted forwards and upward to demonstrate and stretch the uterosacral ligaments posteriorly. A transverse incision is made through 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 mobilizing it past the cervix to the posterior vaginal fornix. Each uterosacral ligament is double clamped, cut and ligated with number 2 chronic catgut sutures. Here, particular care is exercised to avoid the pelvic portion of the ureter as it causes along the base of the broad ligament. The cardinal ligaments of either side of the uterus are then clamped, cut and ligated.

The anterior vaginal fornix is opened and the vagina is circumcised by sharp knife or dissection by scissors round the cervix. The uterus together with its cervix is delivered as

the anterior, posterior and lateral angles of the vagina are secured with long straight artery forceps. The vaginal margins are then closed using a series of figure of 8 interrupted sutures. Particular care us taken when tying the lateral angles to ensure that the descending vaginal branches of uterine vessels are securely ligated. Haemostasis is ensured.

Suspension of the vaginal vault is done by tying the peritonization suture to the lateral and mid sutures of the vault. Peritonization is accomplished by means of a continuous number 1 chronic catgut sutures that first pierces the vaginal walls close near the midline and passes through the posterior leaf of the broad ligament, the free margin of the uterosacral ligament, then through the infundibulpelvic ligament, the free margin round ligament and the anterior bladder peritoneum. The suture is tied at the centre. The same is repeated on the opposite side with the suture being tied at the midline.

The abdominal viscera are inspected. If haemostasis has been achieved and instrument and swab counts are normal, the abdomen is closed in anatomical layers. General anaesthesia is reversed and patient is then managed as described in postoperative care above.

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 building 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 (H.R.C).

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 bring up their children. The counsellors are drawn from the trained nurses, sociologists and consultant obstetricians and 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 STI 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 narcotics 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 who are in need. It is situated on level 2 of the tower block.

THE MOTHERS HOSTEL

This accommodates mothers who are well but whose babies are in the new-born unit. When the mothers get sick, they seek treatment from the wards where they were initially admitted.

OBSTETRIC CASE 1
PLACENTA PRAEVIA TYPE II B CAESERIAN SECTION - LIVE BABY

NAME	: M.W.G	**IP NO.**	: 0564827	**AGE : 31 YEARS**
D.O.A.	: 20/07/05	**L.M.P**	:23.12.04	
E.D.D.	: *30.09.05*	***PARITY***	*:3+0 GRAVIDA 4*	
D.O.D.	: 29.07.05			

PRESENTING COMPLAINT

She presented with painless per vaginal bleeding that had started 2 hours prior to admission.

HISTORY OF PRESENTING COMPLAINT

The bleeding was of sudden onset, was fresh and not associated with abdominal pain and there was no drainage of liquor. There was no history of trauma. The blood had soaked her panties. There was no history of dysuria, per vaginal discharge or frequency of micturation.

ANTENATAL CARE

She attended antenatal care at Kenyatta National Hospital once at 24 weeks.

Antenatal profile:

Haemoglobin – 11.2/dl

Blood group – B Rhesus positive, **VDRL** – Negative and **HIV** – Negative.

Blood pressure at booking time was 120/80 mmHg.

She had done a pelvic ultrasound scan at 20 weeks which had reported a single viable fetus with a low lying placenta that was posterior and encroaching in the internal cervical os. (Ultrasonographer reported type 11B placenta praevia.)

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was para 3+0. The last menstrual period was on 23.12.04 and her expected date of delivery was on 30.09.05. She was 29 weeks gestation by dates.

Her previous deliveries were as follows

1996, had a spontaneous vaginal delivery to a female infant, weight 3.8 kg.

1999, had a spontaneous vaginal delivery to a male infant, weight 3.8 kg.

2003, had a spontaneous vaginal delivery to a male infant, weight 3.6 kg.

All the children were alive and well.

She attained menarche at 16 years. Her menses were regular-28 days cycle lasting 3 days.

She had used depo provera injection for family planning from mid 2001 to mid 2002.

PAST MEDICAL HISTORY

She had never been admitted before except for delivery. She did not suffer any chronic illness. She had never been transfused. She had no drug or food allergies.

FAMILY AND SOCIAL HISTORY

She was a housewife but the husband was a Research Officer with Kenya Agricultural Research Institute. They lived in Kikuyu. She did not smoke cigarettes or drink alcohol. There was no family history of chronic illness.

PHYSICAL EXAMINATION

General examination:

She was in good general condition, not pale, not jaundiced and not cyanosed. She had no oedema. Her blood pressure was 120/65mmHg, her pulse rate was 88/minute, respiratory rate was 20 per minute, and her temperature was 36.6^{0}c

ABDOMINAL EXAMINATION.

The abdomen was uniformly distended, the fundal height corresponding to 30 weeks. The lie was longitudinal, presentation was cephalic, the head was not engaged, and fetal heart rate was 146 beats per minute and regular. There were no palpable contractions. There were no obvious areas of tenderness. There was no organomegally or other added masses.

SPECULUM EXAMINATION

She had normal external genitalia; the vaginal walls had no lacerations or bleeding areas. There was some dark blood in the posterior fornix. The cervix was closed and no active bleeding was observed. Valsalva maneuver did not elicit bleeding.

The posterior fornix had a bluish hue.

CARDIOVASCULAR, RESPIRATORY, MUSCULO SKELETAL AND NERVOUS SYSTEMS: All these were essentially normal.

Impression: Antepartum haemorrhage due to placenta previa at 29 weeks of gestation.

Plan: She was admitted and intravenous access maintained with a wide bore canulla (size 18).

Blood for grouping and cross match (2 units) was taken to the blood transfusion unit. Obstetric scan was requested and patient put on bed rest. Since she was not actively bleeding and she was at 29 weeks, conservative management was opted for. Monitoring of the bleeding was to be done by inspecting the pad daily, taking into account the frequency of pad changing. Foetal well being was to be monitored through maintenance of a foetal kick-chart. She was thus transferred to the ante natal ward. While in the ward, the vital parameters remained stable though she had occasional spotting but no brisk bleeding.

An obstetric scan done on 27/07/2005 reported a single viable intrauterine pregnancy in breech presentation. The placenta was fundal anterior and not low lying. She stayed in the ward and no bleeding was observed thus she was discharged on 29th July 2005. On the discharge summary were written the issues she was to observe. In case of bleeding, she was to visit hospital within the shortest time possible. She was to monitor the foetal movements and visit hospital in case they were reduced.

After about a week, she was readmitted on 6th August 2005 with painless per vaginal bleeding. She came within an hour of noticing the bleeding. At admission, her vital signs were within normal range. General condition was good. Blood pressure was 125/65 mmHg. Pulse rate was 86bpm.

Abdominal examination:

The abdomen was uniformly distended and moving with respiration. The fundal height corresponded to 32 weeks. The foetal lie was longitudinal with a cephalic presentation. There were no areas of tenderness and foetal heart was heard and had a rate of 152 b/min.

Speculum examination was done and only clots were evacuated from the introitus but there was no active bleeding from the cervical os. The cervix was closed. A haematocrit done at admission was 38% corresponding to a Hb of about 12.3g/dl

Decision to manage conservatively was arrived at. Her gestation by dates was 32-plus weeks. Blood grouping was done.

While in the ward, she was given dexamethasone to aid in maturation of the foetal lungs. She continued having spotting on and off but never had a soaked pad. The patient requested to have bilateral tubal ligation at the end of the index pregnancy. She consented on the relevant forms.

INVESTIGATIONS DONE:

Full blood count: WBC-- 7.3 $x10^{9}$/ L, Hb was 13.5 g/dl and platelets were adequate at 274 x 10^{9}. The neutrophils were 60 % and lymphocytes 40.5%. The peripheral film was normochromic normocytic.

U/E/Cr: urea was 1.4mmol/l while creatinine was 61micromoles/l. The electrolytes were within normal.

Coagulation screen.

Prothrombin time test = 15 seconds, Prothrombin time control= 13 seconds

APTT: TEST = 37 Seconds, APTT: CONTROL = 37 Seconds, INR was 1.18

Obstetric scan done on 17/08/2005

Single intra-uterine pregnancy in cephalic presentation. Foetal cardiac activity is seen with a heart rate of 152/minute. Placenta is fundal posterior and not low lying. Amount of liquor is adequate. Gestation by biparietal diameter, abdominal circumference, femur length is 32 weeks, 6 days. Estimated fetal weight was 1970 Gms. She was to be managed conservatively upto term and examination under anaesthesia (EUA) in a double set up was to be done when time for delivery reached.

On 30/08/2005, she had spontaneous preterm rupture of membranes (at 36 weeks gestation). She was transferred to labour ward and on examination she was in good general condition. The foetal heart was heard and regular with a term fundal height. She had no contractions.

Speculum: The liquor was seen draining freely from the os even without valsalva manouvre. The liquor was stained with old blood. Since the patient had been counseled on the mode of delivery, she was prepared for examination under anaesthesia. Consent was taken and since there were 2 units of blood preserved in her name in the laboratory, blood for grouping and cross-match was not taken. An intravenous access was maintained and pubic hair shaving was done. Theater was informed and the patient was wheeled to theater at 3 Am on 31-08-05. In theater, there were two doctors and the anaesthetist and nursing staff were ready. Blood had been collected from the laboratory and accompanied the patient to theater.

Procedure.

The patient was cleaned, draped then general anaesthesia administered then put in semi-lithotomy position. She was catheterized and clear urine drained. Speculum was inserted and the cervix was parous and had a bluish hue. There was clear liquor draining from the cervical os.

Digital examination: Palpation of the fornices revealed a boggy mass in the posterior fornix. The cervix was 2 centimeters dilated. The finger was inserted in the cervix and swept around the internal os. The placenta was felt in the lower uterine segment encroaching on to the internal os posteriorly. There was no cord felt. This was typed placenta previa 2B. The patient was repositioned to supine and emergency cesarean section and a modified Pomeroys bilateral tubal ligation done.

Cesarean section

The abdomen was opened in layers via a pfanniestiel incision. The intestines and paracolic gutters were paused. Lower uterine segment was identified. The visceral peritoneum was incised three centimeters away from the bladder and reflected downward with the bladder. Lower uterine caeserian section was then done. A live female infant was delivered. The infant had an Apgar score of 6/1, 8/5, and 10/10, and weighed 2400 grammes. The placenta was delivered by controlled cord contraction and it was complete.

The placental bed was inspected and had minimal bleeding. The uterus was then closed in 3 layers, with good haemostasis. Bilateral tubal ligation was done using modified Pomeroys method. The ovaries were grossly normal bilaterally. The abdomen was closed after correct swab and instrument count. The estimated blood loss was 600 mls.

Post operatively she was put on intravenous fluids until bowel sounds were present. Pain was managed with intra muscular pethidine 100mg every 6 hours and diclofenac 75 mg intramuscular every eight hours for 48 hours. Crystalline penicillin 2mu every 6 hours and gentamycin 80mg every eight hours intravenously was given for 2 days as prophylaxis against infection.

Postoperatively she did well and was discharged on the fourth postoperative day with her baby. The skin stitches were absorbable thus did not require removal.

FOLLOWUP

She was seen in the postnatal clinic after two weeks to review her healing progress. By then the wound was healing well and she had no major complaints. She was breastfeeding exclusively and the baby was growing well.

DISCUSSION

This is a case of patient who presented with antepartum haemorrhage at term secondary to placenta praevia type 2B. She was done emergency caeserian section and a live baby was delivered. She had no post partum haemorrhage and post operatively, she recovered well.

In developing countries obstetric haemorrhage is a leading cause of maternal mortality. In the western world, maternal mortality due to haemorrahage has been reduced considerably by easy availability of blood bank, antibiotics, expertly administered anesthesia and caeserian section. In the U.S, haemoorhage is the third leading cause of mortality but in the developing nations, it is the leading cause of maternal deaths.[1] Makokha in his study found that haemorrhage followed by infections were the leading causes of maternal mortality in Kenya.[2]

Third trimester haemorrhage continues to be one of the most ominous complications of pregnancy. Bleeding in late pregnancy is common; it requires medical evaluation in 5-10% of pregnancies.[2]

Most serious haemorrhages (2-3% of pregnancies) loose more than 800mls of blood and are due to premature separation of the placenta or placenta praevia. Less common but dangerous causes of bleeding include circumvellate placenta, abnormalities of the blood clotting mechanisms, and uterine rupture. Bleeding from the peripheral portion of the intervillous space, or a marginal sinus rupture is a debatable cause of bleeding. Extrusion of the cervical mucus ("bloody show") is the most common cause of bleeding in late pregnancy.[1, 3]

The patient presented had placenta praevia type 2B. In theatre she lost about 600mls of blood.

In placenta praevia, the reference is the location of the placenta from the internal os.

Placenta praevia can be classified into four types: [1, 3]

Type 1: Low lying placenta: the placenta is implanted in the lower uterine segment but does not reach the internal os.

Type II: Marginal placenta praevia: the edge of the placenta is on the margin of the internal os. Type 11 is divided into A or B. Type 11 A is anterior while type 11 B is posterior.

Type III: Partial placenta praevia: the placenta partially covers the internal os.

Type IV: Total placenta praevia: the placenta completely covers the internal os.

The incidence of placenta praevia is 0.5 % in the developed countries.[4]

At KNH, incidence of placenta has been found to range from 0.25 to 0.9 %. [5, 6]

The etiology of placenta praevia is unknown, but the risk factors include: advanced maternal age, multiparity, and previous caeserian section delivery. Cigarette smoking is also implicated as an important risk factor. The possible etiological factors include scarred or poorly vascularised endometrium in the corpus, a large placenta, and abnormal forms of placentation such as succenturiate lobe or placenta diffusa.[3]

A large placenta probably accounts for the observation that the incidence of praevia is double in multiple pregnancies. The patient had a singleton pregnancy.

A low segment caeserian section scar triples the incidence of placenta praevia.[1, 3, and 7]

The patient presented here had 3 previous deliveries with no complication.

Bleeding from placenta praevia may be due to any of the following causes:

- Mechanical separation of the placenta from its implantation site, either during the formation of the lower uterine segment or during effacement and dilatation of the cervix in labour, or as a result of intravaginal manipulation.
- Rupture of poorly supported venous lakes in the decidua basalis that have become engorged with venous blood.
- Placentitis. This follows infection by the enteroviruses.

In women presenting with bleeding in the later half of pregnancy, placenta praevia or abrubtio placenta should always be suspected.

The principles of management include: [1, 3, and 7]

- Any woman presenting with vaginal bleeding in late pregnancy must be evaluated in a hospital capable of dealing with maternal haemorrhage and a compromised perinate.

- A vaginal or rectal examination must not be performed until preparations are complete for management of massive haemorrhage and maternal or perinatal complications.

Signs and symptoms of acute blood loss (hypovolaemic shock) must be quickly noted. These include pallor, clammy skin, syncope, thirst, air hunger, restlessness, agitation, anxiety, confusion, falling blood pressure, increased or thready pulse and oliguria (or anuria). The patient presented had not bled a lot thus did not require transfusion.

Hypovolaemic shock requires immediate treatment first; general antishock measures must be undertaken. The patient is placed in trendelburg position, ensure the airway, keep patient warm, establish intravenous access and replace fluids using 5% dextrose and saline or lactated ringers while blood components are being obtained.[1, 3]

Prior to vaginal examination, an effort should be made to confirm or rule out placenta praevia by means of sonography. The real time scanner is ideal for screening purposes, because the equipment is portable and the accuracy is over 95%.

The type of management depends on the amount of uterine bleeding; the duration of pregnancy and viability of the fetus; the degree of placenta praevia, the presentation, position, and station of the fetus; the gravidity and parity of the patient; the status of the cervix; and whether labour has began or not.

If the fetus is preterm and the bleeding is not excessive, then conservative management is adopted. This consists mainly of strict bed rest until 37 completed weeks. If the fetus is at term or the patient is in active labour, then examination under anesthesia is done and the fetus is delivered. Examination under anaesthesia confirmed the placenta praevia in the presented patient.

During the caesarean delivery, a transverse uterine incision is made because fetal bleeding may result from an incision into an anterior placenta, a vertical incision is sometimes recommended in these circumstances. Due to the poor contractile nature of the lower uterine segment, there may be uncontrollable hemorrhage following placental removal.

Placenta praevia may be complicated by various degrees of placental accreta. This will render control of bleeding from placental bed difficult. The patient presented did not have placenta accreta.

In those that get placenta accreta and have uncontrollable bleeding, over-sewing the implantation site with O–chromic sutures may provide haemostasis. In some cases bilateral uterine artery ligation is helpful, and in others, bleeding ceases with internal iliac artery ligation.

With availability of antibiotics, blood banking, expertly administered anaesthesia, and caeserian section; the maternal prognosis is excellent. The outcome for the presented patient was good.

The perinatal mortality associated with placenta praevia in most medical centres has been 10 – 20%, or at least 10 times that of normal pregnancy.[1, 3] It has also been found in various studies that congenital malformations are increased with praevia.[8] Foetal growth restriction has been reported in some studies and may reach about 20%.[9]

The patient presented had good maternal and perinatal outcome.

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OBSTETRIC CASE 2:

PRETERM PREMATURE RUPTURE OF MEMBRANES: CONSERVATIVE MANAGEMENT-LIVE BABY:

NAME: C.N
IPNo. 1045095
Age 30 years. Parity 1+0.

L.M.P 5/02/05 EDD 12.11.05 GBD 29+ Weeks.

D.O.A **25/08/2005**

D.O.DELIVERY 06.10.05

D.O.Discharge 07.10.05.

PRESENTING COMPLAINTS.
Drainage of liquor –duration of 3 days.

History of presenting complaints:
She was at rest when she noticed drainage of clear fluid that went down her legs and formed a pool on the ground. There was no accompanying abdominal pains and no urinary symptoms. The first day she changed two pads. It subsided but on second day had pad change once. On the third day, she changed thrice thus she sought hospital attention. There was no fever and no other complaints. She perceived foetal movements normally.

ANTENATAL CARE.
She was attending ante natal clinic at Ruai health center. The antenatal profiles were as follows;

Blood group—B Rhesus positive, VDRL and H.I.V were negative. The booking Hemoglobin was 10.7 g/dl. The booking blood pressure was 120/70mmHg.

OBSTETRICS AND GYNAECOLOGY HISTORY:

She was a para 1 + 0 gravida 2 whose last delivery was in 2002, it was spontaneous vaginal delivery to a male infant, birth weight 3.2 Kg. The child was alive and well. The pueperium was uneventful.

Contraceptives: She had used combined oral contraceptives up to December of 2004. Her menarche was at 15 years, had a cycle of 28 days with menses duration of 3-4 days. The menstrual flow was normal.

PAST MEDICAL HISTORY:

She had no chronic illness nor had she been admitted before except at delivery time.

FAMILY/SOCIAL HISTORY:

She was married and worked as a secretary with Safeway holdings. The husband was a businessman. She did not take alcohol nor smoke cigarettes.

PHYSICAL EXAMINATION:

General examination:

The general condition was good, she was not pale, was not jaundiced and was not febrile clinically.

Vital signs: Pulse rate=78bpm. Temp was 36 °C. Respiration rate was 18/min and the blood pressure was 120/70 mmHg.

ABDOMINAL EXAMINATION:

Fundal height was corresponding to 30 weeks, lie was longitudinal, presentation was cephalic and foetal heart rate was regular at 152 beats per minute. There were no areas of abdominal tenderness.

SPECULUM EXAMINATION.

She had normal external genitalia.

There was evidence of candidiasis with slight inflammation of the cervix. There was no active draining. On Valsalva manouver, draining was confirmed. The cervix was closed.

Other systems

Respiration, cardiac and other systems were essentially normal.

IMPRESSION.
Preterm premature rupture of membranes at 29 weeks.

Plan:

Conservative management that entailed

- Bed rest,
- Vital signs monitoring particularly pulse rate and temperature,
- Full blood count at least twice a week,
- Urinalysis (midstream specimen of urine) for microscopy, culture and sensitivity.,
- Endocervical High vaginal swab for microscopy, culture and sensitivity,
- Monitor drainage through pad-changes.
- Foetal kick chart.
- Obstetric scan.
- Antibiotics.
- Steroid administration.

An obstetric scan of 26-08-05 confirmed a single viable intra-uterine pregnancy in cephalic presentation. Placenta was posterior, not low lying. Liquor was adequate in volume. Gestation age was given as averaging 28 weeks.

Full blood count of 26-08-05

White blood cells were 13.2 x 10^3 / mm^3, Hb was 10.5 g/dl and film was normocytic normochromic.

Urinalysis.

Normal with no growth reported.

High vaginal swab.

Wet preparation showed yeast cells and culture isolated Candida albicans.

She was started on antibiotic-Cefuroxime axetil, antifungal clotrimazole pessaries and was also given dexamethasone 12 mg 12 hourly for one day.

She stayed in the ward and had periods of draining but there was no sign or symptom of chorioamnitis. The fundal height was increasing at expected rate. The follow up full blood counts were all within normal.

The follow-up obstetric scans (2) were reporting normal findings and the liquor volume was adequate. The draining of liquor was on and off.

She was to continue on conservative management up to 34 weeks when she was to be induced. However, if other factors dictated otherwise, delivery could be effected earlier.

The last obstetric scan done on 28-09-05 showed that gestation by age was 33 weeks, fetal breathing, tone and somatic movements were observed. The liquor was reduced. The biophysical profile given as 6/8.

She was given 1 more week to achieve 34 weeks.

On 05-10-05, she was transferred to Labour ward for induction.

Induction:

Examination:

General condition was good, was not pale and was not febrile. Vital signs were within normal.

P/A-fundal height was 34 weeks. The lie was longitudinal, presentation was cephalic and ballotable. Foetal heart rate was 146bpm.

Pelvic exam

External genitalia was normal.

There was draining of liquor seen.

Vaginal walls appeared normal.

Cervix was 2 cm dilated, central position, of medium consistency and 1.5 cm long. The head was still ballotable.

Done:

She was started on Syntocinon (5 international units) in 500 mls of 5% dextrose as an intravenous infusion. It was started at 10 drops per minute and increased every half hour by 10 drops per minute. The maximum was to be 60 drops per minute. By the end of the first dose, the cervical findings were as initially and had not had mild contractions but the foetal heart rate was within normal. The syntocinon dose was stepped up to 10 international units to run at 30 drops per minutes and escalated as above.

The contractions picked (3 every 10 minutes ech lasting 20 seconds when syntocinon was running at 40 drops per minute. The foetal heart rate remained within normal and was 152/minute.

Pelvic examination findings:

The external genitalia was normal

Cervix was 4 cm dilated, fully effaced and well applied to presenting part. There was no cord prolapse. The pelvis felt clinically adequate.

Partogram was instituted and the syntocinon continued and maintained at 60 drops per minute. After syntocinon was over, the contractions were strong and she progressed on well. She was given analgesic-Tramadol intramusculary 100 mg as a single dose. She delivered a live male infant at 4.30 pm on 06-10-05. The Apgar score was 9:1, 10:10 and weight was 2400 grams.

The placenta was delivered 10 minutes later by controlled cord contraction and was complete. The estimated blood loss was 150 mls.

Breast feeding was initiated there-after.

She was transferred to the postnatal ward at 7 Pm and had uneventful post-natal period. She was discharged on 7th October after the baby received BCG vaccine. She was to be reviewed in postnatal clinic in 2 weeks time.

FOLLOW-UP

She was reviewed two weeks later in the postnatal clinic and she had no complaints. The baby was doing well and still breast feeding. She was then given an appointment to be seen in the family planning clinic for counseling on family planning.

DISCUSSION:

C.N was a 30 year old para 1+0 who presented with preterm premature rupture of membranes at 29+ weeks and was managed conservatively and had a spontaneous vaginal delivery to a live male infant who scored well. At postnatal clinic visit the baby was breastfeeding well and the mother had no complaints.

The amniotic fluid is contained within the amniotic membranes. These membranes are composed of amnion and chorion, which are closely adherent layers consisting of several cell types including epithelial cells, mesenchymal cells and trophoblastic cells embedded in a collagenous matrix. The amniotic fluid is formed by 12^{th} week and is contained within the membranes. The integrity of the membranes is essential for retention of the amniotic fluid. The membranes secret substances into amniotic fluid and guard the foetus against infection ascending the reproductive tract. The membranes normally rupture spontaneously during labour or are artificially ruptured.

Premature rupture of membranes (PROM) is the rupture of membranes with leakage of amniotic fluid more than eight hours before the onset of labour regardless of gestation. Preterm premature of membranes (PPROM) refers to rupture before 37 weeks and six days of gestation. The patient C.N had PPROM as the gestation was 29+ weeks.

PPROM and PROM continue to be important in obstetrics as accurate assessment and knowledge of maternal, foetal and neonatal risks are crucial in decision making and management. Premature rupture of membranes occurs in 10.7% of all pregnancies and in 94%, the foetus is mature while in 5 % it is preterm [1]. Preterm premature rupture of the membranes (PPROM) is associated with 30-40% of preterm deliveries and is the leading identifiable cause of preterm delivery. Preterm premature rupture of membranes occurs in approximately 1 % of all pregnancies. Preterm deliveries have accompanying complications that include respiratory distress syndrome, neonatal infections and intraventricular haemmorhage.

In evaluating the incidence of PROM at Kenyatta National Hospital, Otieno[2] found an incidence of 9.3 %(1979) while Wanjala [3] reported an incidence of 8.2 %(1980). The

exact cause of premature rupture of membranes is not known though there are associated factors. The factors include maternal infections, intra-uterine infections, cervical incompetence, previous history of prom and even trauma. At the molecular level, there appears to be an association with diminished collagen synthesis, altered collagen structure and accelerated collagen degradation possibly with concurrent cellular changes within the foetal membranes[1].

1.Infections

There has been debate whether infections are a cause or consequence of premature rupture of membranes. There is now an increasing evidence of the major role of infections in causing PROM. Women with urinary tract infection, bacterial vaginosis and other genital infections are more prone to develop premature rupture of membranes[4]

Infection is thought to act in two ways,

A. Infection produces a decrease in the resistance of the connective tissue matrix by bacterial production of proteases and phospholipases or indirectly by triggering maternal and foetal macrophage mediated enzyme secretion.
B. Infection is thought to increase production of prostaglandins and hence uterine activity.

The organisms implicated include group B streptococci, gardnerella vaginalis, Chlamydia and vaginal anaerobes.

2. **Connective tissue disorder and nutritional deficiencies**.

The fetal membranes are chorion and the amnion. The Amnion is the innermost and is continguous with the amniotic fluid. The amnion is the tissue that provides almost all of the tensile strength of the foetal membranes[5]. Collagen tissue disorders associated with weakened foetal membranes and nutritional deficiencies that predispose women to abnormal collagen have also been implicated in PROM. In the women who smoke, there is a higher chance of preterm premature rupture of membranes. The Cadmium inhaled in cigarette smoke enters the amniotic fluid and induce formation of metallotheonine that sequestrates copper thus making it unavailable for the integrity of the membranes. Patient C.N was not a smoker.

3. **Lack of support.**

Membrane stretching and uterine overdistention in multiple gestation and polyhydramnios induces mechanical stretch of the foetal membranes resulting in release of several amniotic factors such as PGE_2 and inter-leukin-8 that increases the chances of PROM. Patients who have had cone biopsy on their cervix may also present with premature rupture of membranes due to a weakened cervix leading to hearniation of the amniotic membranes. The presented patient had a singleton pregnancy and had no history of cervical surgery.

4. **Genetic predisposition**

Patients with positive familial history of previous PPROM/PROM are more susceptible to premature rupture of membranes.

5. **Others**

The role of steroid hormones, (Estrogen and progesterone) and relaxin has not been well defined in relation to PROM.

The cause of PPROM in patient C.N could not be elucidated.

Diagnosis of Premature rupture of membranes entails a history of gush of fluid from the vagina and the clinician demonstrating amniotic fluid leakage from the cervix or pooling of the fluid in the vagina. Matemal history of liquor drainage is accurate in 90% of the cases. Other patients may give additional history of flecks of vernix or meconium in the fluid. Some may even report reduction of uterine size. The presented patient had the history of gushing of fluid from the vagina which flowed down her legs and had formed a pool on the ground.

To confirm the premature rupture of membranes, a sterile speculum examination is done in addition to the normal obstetrical examination. This examination looks for three hallmark confirmatory findings associated with PROM.

a) Pooling—the collection of amniotic fluid in the posterior fornix. Visualization of liquor leakage from the cervical os is diagnostic but if not observed, the patient is asked to increase the intra-abdominal pressure by coughing twice or three times and this may show leakage. The amount of liquor, colour, smell and viscosity is

noted. The cervix state is also noted, whether dilated or not. When the fluid is difficult to ascertain whether it is liquor, urine or hydrorrhea gravidarum, the test in b) below is done.

b) Nitrazine test—a sterile cotton tipped swab is used to collect fluid from the posterior fornix and apply it to nitrazine paper. In the presence of amniotic fluid, the nitrazine paper turns blue, demonstrating an alkaline pH (7.0-7.25). There are other tests that can still be done to further confirm.

c) Ferning—a drop of the liquid is placed on a slide and allowed to air-dry. Amniotic fluid will form a fern-like pattern of crystallization.

d) Evans Blue dye instillation—this entails doing amniocentesis and removing few mls of amniotic fluid and injecting similar amount of Indigo carmine or Evans blue. After about 15 minutes, a speculum examination will reveal the dye in the vagina.

In this patient, confirmation was done when she did a valsalva maneuver and her cervix was closed.

Once diagnosis of PROM is made, management depends on the gestation and presence or otherwise of amnionitis. Term pregnancy with PROM with no amnionitis can be managed expectantly or actively. Expectant management entails non intervention while waiting for spontaneous labour. When the patient does not go into labour within 6-8 hours, then active management should be instituted and labour induced to minimize the risk of infections. Researchers have observed that 90% of term PROM go into labour within24 hours. Patient C.N was not at term gestation. Those with gestation between 28-34, 50% go into labour within 24 hours and 80% within one week[6].

In PPROM, the latency period from membrane rupture to delivery increases inversely with advancing gestational age. The period from 26-32 weeks gestation, it is 12 days whereas at 32-34 weeks, the mean latency period is 4 days[7].

Most pregnancies complicated by preterm PROM result in preterm delivery.

Management of PPROM depends on initial findings. Where there is intra-amniotic infection, delivery must be instituted. Clinical evidence of infection include maternal temperature>38^{0}C, foetal tachycardia, fundal tenderness, foul or purulent vaginal discharge, maternal tachycardia or positive gram stain for micro-organisms. This index

patient had no tachycardia and no sign of infection. The foetus had no tachycardia thus she was managed conservatively.

The overall goal in managing expectantly is to allow the pregnancy to reach a gestational age beyond which neonatal morbidity and mortality is minimal and achieve delivery before the mother and/or foetus is infected.

The conservative management entails monitoring of various factors that may indicate need for urgent delivery. Most important is signs of infections. The following are monitored.

a) Tachycardia: maternal pulse rate>100 beats per minute or foetal heart rate > 160 bpm should raise an alarm these findings need to be supported by other factors as shown below.
b) Fever.
c) Foul smelling liquor.
d) Uterine tenderness.

The liqour loss is also monitored by giving the patient a perineal pad and the rate of changing is recorded. This is coupled with uterine size examination to establish if the fundal height corresponds to the gestation age.

Laboratory monitoring: White blood cell count at least twice weekly is done. A leucocyte count of 16,000/micromL may signify an infection

The patient was monitored and did not develop signs of chorioamnionitis.

Use of antibiotics has been associated with prolongation of pregnancy and reduction in infant and maternal morbidity.

The summary of the available literature supports the use of ampicillin (2 g IV q6h) and erythromycin (250 mg IV q6h) for 48 hours, followed by amoxicillin (250 mg PO q8h) and erythromycin base (333 mg PO q8h) for 5 days, for a total of 7 days of antibiotics. An alternative is ampicillin/sulbactam (3 g IV q6h) for 48 hours, followed by amoxicillin/clavulanate (250 mg PO q8h) for 5 days, for a total of 7 days of antibiotics. A broad-spectrum cephalosporin or clindamycin may be substituted in patients who are

allergic to penicillin. This patient received a cephalosporin antibiotic. Prolonged antibiotics offer no advantages and may promote the emergence of resistance (eg, ampicillin-resistant *Escherichia coli*).

Little controversy about who should receive steroids should exist. The Consensus Development Panel of the National Institutes of Health recommends corticosteroid use for women with PPROM prior to 30-32 weeks of gestation in the absence of clinical chorioamnionitis. The dose is betamethasone 12 mg IM qd for 2 days[8]. In the initial statement, an allowance was also made for dexamethasone, but a considerable amount of evidence has developed since then that favors betamethasone. No evidence supports the use of subsequent courses of this therapy. Our patient received dexamethasone.

A complication of continuous liqour loss is pulmonary foetal hypoplasia[4] *which is the* most serious fetal complication and can be lethal. The presence of severe (amniotic fluid index <2.0 cm), prolonged (>14 days), and early (<25 weeks at onset) oligohydramnios has been associated with a neonatal mortality rate greater than 90% in one study. In other studies, the gestational age at the time of PPROM had the most significance when predicting pulmonary hypoplasia. In the human fetus, PROM occurring 13-25 weeks has the most dismal prognosis. The diagnosis of pulmonary hypoplasia is made at autopsy by weighing the lungs. Several schemes exist for predicting pulmonary hypoplasia antenatally using lung lengths and/or thoracic circumference ratios, but the functional capacity of the lung cannot be predicted, only the amount of tissue present.

The patient presented with PPROM and was managed conservatively, received antibiotics, steroids and was induced and had a successful delivery

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OBSTETRIC CASE 3

DEEP VENOUS THROMBOSIS IN PREGNANCY, POSTDATES, INDUCTION, LIVE BABY.

NAME:	**B.A**
AGE:	***26 YEARS***
IP NO:	**1033554**
WARD:	**1A**
PARITY:	**O + O**
D.O.A:	**23/06/05**
D.O.D:	**02/09/05**
L.M.P	**10/11/04**
EDD	**17/08/05**

PRESENTING COMPLAINT

Swelling of the left lower limb for 3 days

Pain of the left lower limb for 2 days.

HISTORY OF PRESENTING ILLNESS

She had been well till three days prior admission when she noticed that the lower limb was swollen. The swelling was progressive and ascended up to the groin. The swelling became painful and walking was difficult. There was no history of trauma. She had no history of fever.

ANTE-NATAL CARE.

She was attending Dandora city council clinic where she had made three visits.
She had received two doses of tetanus toxoid injection. Haemoglobin level was 11.4 g/dl, blood group was O rhesus positive, VDRL AND HIV were both negative.

OBSTETRICS AND GYNAECOLOGICAL HISTORY .

She was para 0+0.

Her menarche was at 14 years. Her cycles were regular occurring every 28 days with a flow of 5 days, and she had mild dysmenorrhoea. She had never used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

She had never been admitted before. She was not on any medication.

FAMILY AND SOCIAL HISTORY

She was single, staying with her brother in Dandora. She was working as a bus conductor with Metro-shuttle buses and did not drink alcohol or smoke cigarettes. There was no family history of chronic illness. She had attained secondary school education.

PHYSICAL EXAMINATION .

She was a young lady in good general condition, was not pale, was afebrile, was not jaundiced, and had no lymphadenopathy. Her blood pressure was 115/60 mmHg, her temperature was 36.4^{0}c her pulse was 80/minutes and respiratory rate was 20 per minute.

CARDIOVASCULAR RESPIRATORY AND THE CENTRAL NERVOUS SYSTEM

These were essentially normal.

ABDOMINAL EXAMINATION]

The abdomen was uniformly distended. The fundal height was 32 weeks (corresponding to dates), longitudinal lie, cephalic presentation and fetal heart was heard and regular at 146 beats per minute.

PELVIC EXAMINATION

This was not done, as there was no indication for it.

LOCAL LIMBS EXAMINATION

There was obvious swelling of the left thigh and leg, shiny but had no blisters. The local temperature was raised (warm to touch) and tender to touch. Circumferential measurements taken 10cm below the tibial tuberosities showed a difference of three centimeters(33 and 36 cm) between left and right whereas that of the thigh had five-centimeter difference(50 and 55cm).

DIAGNOSIS

An impression of deep venous thrombosis at 32 weeks of pregnancy was made.

MANAGEMENT

The patient was admitted for bed rest and anticoagulation therapy. She was started on an infusion of heparin at 10,000IU in 500mls of normal saline to run 6 hourly. She was also started on ibuprofen 400mg 8 hourly for analgesia.

Daily measurements at above mentioned reference points were done.

Regular kaolin cephalin clotting time profiles were taken. Blood was to be taken for full blood count and she was to have Doppler scan to confirm the thrombosis. Within seven days, swelling and pain had substantially reduced as evidenced by the measurements. She was subsequently changed to subcutaneous heparin 7500 IU 8 hourly.

INVESTIGATION

1. KCCT: 27/06/05 Test: 60.4sec control: 36.7sec
   12/07/05 Test: 64.2 sec control: 34.5 sec
   25/07/05 Test: 45.sec control: 33.0sec
   15/08/05 Test: 48.4sec control: 35.3 sec
   20.08.053 Test: 49.4s control: 30.7 sec
2. Haemogram

   27.06.05 Hb: 10.4 g/dl
   WBC: 6.44 x10 ^{9}/l
   Platelets: 272 x 10 ^{12}/l
   18/07/05 Hb 12.6gm/dl
   WBC 8.65 X 10^{9} /l
   Platelets 394 x 10^{12} /l
   08/08/05 Hb 13gm/dl
   WBC 9.1 x 10^{9}/l
   Platelets 200 x 10^{12}/l
3. **Venous Doppler of left lower limb.**

This was done on 04/07/05. Showed extensive thrombosis of left limb veins, from the common iliac vein of the left side, to the common femoral vein then superficial femoral vein, popliteal vein and down to calf muscle veins.

The diagnosis of deep venous thrombosis was confirmed

Repeat Doppler scan of 17/08/05

The report read: grey scale, colour and Doppler analysis done of the left lower limb. The deep venous system shows moderate dilatation. There is poor colour flow demonstrated, loss of phasivity. There is complete compression of the common femoral vein. The rest of the deep veins show good compressibility.

Conclusion: features of resolving deep venous thrombosis.

4. Obstetric scan (8/07/03) showed a single intra uterine pregnancy at 33 weeks and three days.

DAILY LOWER LIMB MEASUREMENTS

(Leg reference point was 10 cm below the upper edge of the tibial tuberosity along a line connecting to the medial malleoli. Thigh reference point-20cm above the upper edge of the tibial tuberosities)

	Right thigh	right calf	left thigh	left calf
▪ 23.06.05	50	33	55	36
▪ 24.06.053	50	33	55	36
▪ 25.06.05	49.5	33	54	35.5
▪ 26.06.05	50	34	53.5	35
▪ 27.06.05	50	33.5	54	34
▪ 28.06.05	49	33	52	33
▪ 29.06.05	50	33	51	33
▪ 30.06.05	50.5	33.5	51	33

FURTHER MANAGEMENT:

She remained in the ward upto term and she was maintained on 5000 units of subcutaneous heparin. A decision was made not to change her to warfarin as she was nearing term. By the time she reached 40 weeks of gestation, she had not gone into

labour. A pelvic examination was done (21/08/2005) to assess the state of the cervix and it was found to be of poor bishop score. The cervix was to be ripened using prostaglandin E_2 and this was inserted in the posterior fornix at 1.30 pm same day. Further review at 7.30 pm showed she had progressed well. Cervical dilatation was 6 cm with bulging membranes with an engaged head. At this point, controlled artificial rupture of membranes was done after ascertaining there was no cord presenting. The liquor was clear. The contractions were mild, lasting about 20 seconds. She was thus augmented with syntocinon 5IU, given analgesic, Tramandol 100 mg intramuscularly and hyoscine butyl-bromide 40 mg intravenously.

She progressed well in labour and at 10.25 pm, she delivered a live female infant who scored well. The score was 9:1 and 10:5 and the birth weight was 2700 grammes. She lost about 150 mls of blood.

Post Natal management: She was observed in labour ward and after four hours, she was taken to the postnatal ward for further recovery. On the first post natal day, subcutaneous heparin was restarted together with warfarin 5 mg once daily. Four days later heparin was stopped, and she continued warfarin. She was discharged on the fourth day. She was to be reviewed in one week in the postnatal clinic. She was also to be seen in the hematology clinic.

FOLLOW UP

After one week she was seen in the postnatal clinic. The coagulation profiles were acceptable. She was advised to continue warfarin till six weeks.

After six weeks she was seen and had no complaints. Warfarin was discontinued. She was counseled on family planning and on the need to start early antenatal care in the next pregnancy. She was advised that she was not going to use hormonal contraceptives especially those containing estrogens because of the history of DVT.

DISCUSSION

The patient presented with clinical manifestation of DVT in the third trimester. She was started on heparin till delivery (spontaneous vaginal delivery after induction). Post delivery she was given warfarin and heparin, which was discontinued on the fourth day. She continued with warfarin for six weeks postnatally.

DVT and its sequelae, pulmonary embolism is a major cause of maternal morbidity and mortality. [1]

The incidence of thromboembolism is 0.2% in the antepartum period and 0.6% in the postpartum period. Pulmonary embolism, with a mortality rate of 15% occurs in 50% of patients with documented deep vein thromboses; only 5-10% of these are symptomatic.[2]

Women with previous DVT have a 12-35% increase in incidence compared to women who have never had it. [3]

Vascular clotting develops mainly due to circulation stasis, vascular damage, or hypercoagulability of blood. All these elements of Virchow's triad are present during pregnancy. Venous return from the lower extremities is reduced by the pressure of the gravid uterus on both the iliac veins and the inferior vena cava. Other important predisposing factors include heavy cigarette smoking, obesity, previous thromboembolism, anemia, hemorrhage, heart disease, hypertensive disorders, prolonged labour, operative delivery, postpartum endomyometritis and thrombophilias. [2,4]

The venous thrombi may develop first in the relatively small veins of the calf muscle and extend proximally as far as the femoral or iliac veins, or rarely, even into the inferior vena cava.

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. [5]

The patient B.A had progressively ascending DVT, involving the left limb.

The signs and symptoms of the DVT involving the lower extremity vary greatly depending upon the degree of occlusion and the intensity of the inflammatory response. Classical puerperal thrombophlebitis involving the lower extremity, sometimes called *phelgmasia Alba dolens* or milk leg is abrupt in onset, with severe pain and edema of the leg and thigh. The thrombus typically involves much of the legs venous system from the

foot to the iliofemoral region. Occasionally reflex arterial spasms cause a pale cool extremity with diminished pulsations. [4]

Diagnostic studies for DVT include Doppler ultrasound, venography, impedance plethysmography, and magnetic resonance imagining. The patient presented here had her diagnosis confirmed by Doppler ultrasound.

Serial physical measurements were done and they showed progressive improvement of the swelling. It is well established that heparin is a safe drug during pregnancy because it does not cross the placenta. Heparin may be given by continuous intravenous infusion, intermittent intravenous or subcutaneous intermittently. Intravenous heparin is given initially. A loading dose of 80u/kg is given followed by a continuous infusion of 15-25 u/kg/hour.

After four hours the activated partial thromboplastin time (APTT) is determined and the dose adjusted accordingly. Treatment may also be by use of subcutaneous adjusted dose heparin to maintain (APTT) at 1.5 times the control as determined at 6 hours after the last injection. The major side effect of heparin is bleeding; other complications include thrombocytopaenia, osteoporosis and fat necrosis. Warfarin is known to cross the placenta and should ideally be avoided in pregnancy. The teratogenic effects of warfarin include nasal hypoplasia, skeletal abnormalities, and multiple central nervous system abnormalities. The usual dose of warfarin is 10-15mg daily until the therapeutic level of prothrombin time (PT) of 1.5-2.5mg times the control value is achieved. Warfarin should be continued for six weeks postpartum [2, 5, 6]

B.A was put on both warfarin and heparin after delivery, and heparin discontinued on the fourth day, to continue with warfarin. Warfarin was then discontinued after six weeks. The patient was induced because she did not go into spontaneous labour.

The antidote for heparin is protamine sulphate given at 1mg for 100units of heparin. The antidote for warfarin is vitamin K but this is a slow process. The patient B.A had no complication to require administration of the anti-dote.

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OBSTETRIC CASE 4

SICKLE CELL DISEASE: CAESAREAN SECTION PLUS BTL—LIVE BABY.

NAME:	**M.A**
AGE:	**26 YEARS**
IP NO:	**0784120**
PARITY:	**1 + O**
D.O.A:	**22/08/05**
D.O.D:	**02/09/05**
L.M.P	**01/12/04**
EDD	**08/09/05**

Presenting complaints:
Generalized body pains, Backache, Joint pains and dizziness.
Duration: 5 days.

HISTORY OF PRESENTING ILLNESS;

The patient was a known sickle cell patient since childhood and had been followed in various clinics. She was relatively well five days prior to admission. She started having body aches and pains and there was accompanying dizziness. She had neither fever nor vomiting. There was no diarrhea. She had no frequency of micturation, dysuria or urgency. The pains were episodic and were not being relieved by paracetamol which she had been taking. She had no history of cough or chest pain. There was a positive history of travel to a malaria endemic zone-Siaya 10 days prior to admission.

Past medical history.

She was a sickle cell patient since childhood and was maintained on Paludrine and folate. She had been admitted in Kenyatta National Hospital medical wards for three episodes. In 2004, she was admitted in antenatal ward with preterm rupture of membranes, developed chorioamnitis and cesarean section done then and a macerated still birth was delivered. She was transfused 1 unit of blood in that antenatal admission.
She had allergy to quinine.

Ante Natal Care:

She had attended ante natal clinic in Siaya (2 visits) and the profile done there was as follows: Blood group was O Rhesus positive; VDRL and HIV were both non-reactive. An ultrasound scan done at 13 weeks of gestation had confirmed a single fetus at 13 weeks.

Obstetric/Gynaecology history:

Para 1+ 0 with no living child. She was at 36^{+} weeks gestation

Her menarche was at 17 years. The cycle was 28 days and the flow lasted 4 days. There was no dysmennorhea. She had not used any contraceptives.

Family/social history.

She was married and the husband was a casual laborer. They stayed in Ngomongo in Nairobi. She was the 3rd born in a family of 4 siblings (2 boys and 2 girls). Her parents lived in Siaya in Nyanza province. None of her brothers or sister had sickle cell disease.

Physical examination.

She was sick looking, moderately pale, deep jaundice and moderately dehydrated. She was febrile (Temperature of 38.5^{0}) but she had no oedema.

Vital signs

Blood pressure was 120/80 mmHg. Pulse rate was 80bpm and respiration rate of 20/minute.

Cardiovascular system: the pulse was 80/min regular and of good volume. Praecordium was not hyperactive and heart sound 1and 2 were heard. There were no murmurs.

Respiration system: air entry was equal bilaterally and nothing of significance was detected.

Abdominal examination:

Abdomen was uniformly distended and a midline infraumbilical scar was noted. She had a splenomegally of 5 cm below the left costal margin but there was no hepatomegally. The fundal height was equivalent to term pregnancy. The fetus was in longitudinal lie and in cephalic presentation. The head was balottable. The foetal heart rate was 148bpm and was regular. There were no palpable contractions.

Pelvic examination:

It was not done as there was no apparent indication.

Diagnosis:

A patient in painful crisis-(vaso-occlusive) at 37+ weeks of gestation.

Investigations:

1. Haematocrit –24% (Hb about 8 gm/dl).
2. Blood for grouping and cross-matching was taken.
3. Blood slide for malaria—Negative
4. Urinalysis—no proteins, no blood or leucocytes.
5. Urea was 2.3mmol/l, Creatinine was 45micromoles/l. Sodium and potassium were within normal.

Management:

The patient was admitted in labour ward and started on bed rest, intravenous fluids, analgesic (Iboprufen) and oxygen.

The Haematologist was consulted and after reviewing the patient, recommended the following

1. Group and cross-match 3 units of packed cells.
2. Folic acid 5 mg once daily
3. Pencillin v. 500mg 12 hourly.
4. Subcutaneous heparin 5000 IU 8 hourly.
5. The aim was to achieve a Haemoglobin of 10 and above by delivery time.
6. Anti acid –10 mls 8 hourly.

After about 4 hours in labour ward, she was transferred to the ante natal ward. While in the ward, full haemogram was done and results were

Haemoglobin was 8.1g/dl, WBC were 14 x 10^9cells/l and platelets were 360 x 10^9/l.

The peripheral blood film showed: Poikilocytosis with macrocytes and target cells and reticulocytosis. The red blood cells were hypochromic while haemoglobin electrophoresis showed haemoglobin SS

The obstetric team in the ward reviewed the patient and counseling was recommended with a view to undertake bilateral tubal ligation at the end of the current pregnancy. Counseling was done and the patient accepted to have BTL. The prescribed management was administered. She was scheduled to for elective cesarean section and BTL at 38 weeks of gestation.

While in the ward, on 25th August (3 days post admission), she complained of having perceived reduction of foetal movements. She had felt 4 movements in 10 hours. In view of her previous history, she was prepared for emergency cesarean section. She was explained and she gave a written informed consent.

In theatre she was placed in supine position abdomen was cleaned and draped. General anesthesia was induced and patient was intubated. The old scar was excised and abdomen opened through a midline sub umbilical incision. Abdominal packing was done and bladder was deflected inferiorly. The lower uterine segment was identified and an elliptical lower uterine segment caeserian section was done. The outcome was a live female infant birth weight of 2550gm and with an Apgar score of 9/1, 10/5 and 10/10. The baby was reviewed by a paediatrician resident and was to join her mother. The placenta was delivered by controlled cord traction and grossly looked normal. The uterus was then stitched in layers and modified Pomeroys procedure was used in doing the bilateral tubal ligation. The abdomen was closed after count of swabs and instruments was reported correct. The general anesthesia was reversed uneventfully. Patient was taken to recovery room and when fully wakes to labor ward enroute post natal ward.

She was managed on antibiotics, intravenous fluids and analgesics. Patient M.A had uneventful postpartum period while in the ward and she was discharge on 8th post natal day. She was reviewed in the post-natal clinic after 6 weeks. She had no complaints. the baby was growing well, still breastfeeding and the mother had not suffered any crisis. She was then referred to the haematology clinic for follow-up.

DISCUSSION:

The patient was a para1+0; known sickle cell disease patient since childhood who was managed and outcome was a live female. She had bilateral tubal ligation for contraception.

Sickle cell haemoglobin (HbS) results from the substitution of a valine residue for glutamic acid at position 6 in the beta-subunit of hemoglobin[1]. Valine is hydrophobic while glutamic is hydrophilic and therefore HbS is less soluble in blood.

When oxygen concentration is low, HbS polymerizes and forming tactoids, which make red blood cells to sickle. Sickle cells usually get sequestrated by the spleen and this may account for the chronic anaemia in patients with sickle cell disease (SCD)

The sickle cell gene is inherited as an autosomal recessive. In homozygous state, one gets the sickle cell disease and if heterozygous state, results in sickle cell trait.

With a few minor exceptions, people with only one gene for hemoglobin S (Hb S) are phenotypically normal (sickle trait).

People who inherit two Hb S genes from their parents have sickle cell disease. M.A had sickle cell disease diagnosed in early childhood. It is therefore likely that the parents were carriers.

Sickle cell disease is widely distributed throughout the world. It is commonest in Africa with pockets in India, Middle East and Southern Europe. 10% of black Americans carry the sickle cell gene. In Africa the disease is found in East, Central and West Africa. In Kenya the disease is found in the coast and Western parts of the country. The distribution follows closely the distribution of falciparum malaria endemicity. This is due to the balanced polymorphism of the disease whereby the heterozygotes are less susceptible to malaria but homozygotes experience more mortality[2, 3, and 4].

De-oxygenation lowers the solubility of HbSS leading to aggregation into crystals and causes the erythrocyte to assume the classical 'sickle shape'.

Hb S with bound oxygen (e.g., in the arterial circulation) does not polymerize.

Repetitive cycles of sickling and polymerization lead to membrane rigidity, and irreversible sickle cells are eventually formed. These permanently damaged erythrocytes

are then cleared by the reticulo-endothelial system. Thus, the average lifespan of red blood cells of sickle cell patients is 17days compared with the 120day lifespan for normal erythrocytes. This results in chronic compensated anaemia (haemoglobin, 6.5-9.0g/dl) as the marrow's capacity to generate new red blood cells is out-matched by the rapid red cell destruction. The presented patient had a haemoglobin level of 8 g/dl and the peripheral film showed reticulocytes but bone marrow aspirate was not done.

The most widely accepted hypothesis is that erythrocytes deform as they release their oxygen in the capillaries and are trapped in the microcirculation (Eaton et al., 1976) (Kaul et al., 1989). The blockade of blood flow produces areas of tissue ischemia, leading to the myriad of clinical problems seen with sickle cell disease. Although a good deal of indirect evidence supports this theory, definitive proof that this is the pathophysiologic mechanism in sickle cell disease is lacking.

Often there is an associated splenomegaly and gallstone formation, both secondary to excessive red blood cell destruction. Spleen is more often not palpable in adults due to autosplenectomy in childhood[2, 3]. Our patient did not have an ultrasound done to report on the spleen.

The term 'sickle cell crisis' can be used to describe many of the acute events that occur in people with sickle cell disease. There are three major types of crisis; vaso-occlusive; sequestration and aplastic. Vaso-occlusive crises are usually painful and therefore some authors refer to them as painful crisis. Most crises during pregnancy are vaso-occlusive and occur mainly in the latter half of pregnancy or in the puerperium. One of the most serious sickling crises is the acute chest syndrome. It is a life-threatening complication due to sickling in the lungs[2, 5]. The patient presented at 36^{+} weeks was admitted in a vaso-occlusive crisis.

The pregnancies associated with major sickle haemoglobinopathies must be considered as high risk and should be managed as such[6, 7, and 8]. The past obstetric history is relevant. Any other medical conditions present should be identified and treated appropriately. Dating of the pregnancy is important, as women with sickle cell disease are at increased risk of intra-uterine growth restriction. A baseline full blood count and recticulocyte

count, serum iron, and liver and renal function tests should be obtained. Screening for hepatitis and HIV is also essential because these women are likely to have had previous blood transfusions[3, 5, and 9]. Patient M.A had been transfused one year earlier. Screening done showed she was HIV negative. She was not screened for hepatitis.

All women with sickle cell disease should be advised to take a supplement of 5 mg folic acid per day. Iron supplements should be given in the same way as to other pregnant women at risk of anaemia. However, those that have had frequent transfusions following crises may have iron overload and should avoid routine iron supplement. In addition, all patients should be taking penicillin V 250mg twice daily as hyposplenism is common in females with sickle cell disease, and encapsulated organisms pose a risk of overwhelming sepsis. Patients should be encouraged to remain well hydrated and report any signs of infection [3, 9]. Our patient had been transfused once previously. She received folate but not iron supplement. She was prescribed penicillin V while she was in the ward.

Women with sickle cell disease are at risk of abortions, premature birth, intra-uterine growth restriction, pre-eclampsia and infections. Liaison with a heamatologist is necessary in management for optimum care. At each clinic visit, besides the routine assessment of blood pressure and urinalysis, a full blood count, urinary microscopy and culture should also be performed[9]. Gestational age is confirmed by early ultrasound scan, and serial growth scans should be performed to monitor growth. The presented patient had an early ultrasound scan done at 13 weeks but no follow-up scans because she had only attended clinic twice. A haematologist was consulted in the management of this patient immediately she was admitted.

Our patient had history of premature rupture of membranes in her first pregnancy that ended up in foetal death.

The therapeutic goals for patients in sickle cell crisis include pain relief, treatment of infections, adequate oxygenation and hydration, correcting metabolic acidosis and maintaining an adequate haemoglobin level. Liberal use of parenteral analgesia, usually

an opiate derivative, is indicated during these crises. The pain may persist until the cycle of vaso-occlusion and tissue infarction is reversed. Efforts are made to identify any source or focus of infection in patients with sickle cell. Lungs and urinary tract are the most common sites to be involved. However, an infection can occur in any organ. Oxygen and hydration continue to be the cornerstone of treatment, and are vitally important in the reversal of metabolic acidosis and tissue hypoxia associated with sickle cell crisis. In those situations where the vaso-occlusive crises are unresponsive to conservative management, exchange transfusion may be indicated [9]. Patient M.A was put on intravenous fluids, analgesics, antibiotics and oxygen.

The role of prophylactic transfusion is controversial. The basis for exchange transfusion is to decrease the concentration of HbS, thus increasing the overall oxygen-carrying capacity of the blood and thereby reducing the chances of sickling. The benefits of this approach are yet to be confirmed. The disadvantages of exchange transfusions are transfusion reaction, allo-immunization and exposure to infections. The conservative approach only uses transfusions for patients with life-threatening illness or when the crisis does not respond to 48 hours of conservative therapy[10].

General and supportive measures involving stress reduction during labour appear to have a beneficial effect. It is important to avoid dehydration, hypoxia, sepsis and acidosis. In order to limit the increase in cardiac demand during painful contractions, the liberal use of epidural analgesia is encouraged. However, nitrous oxide and 50% oxygen via a facemask can be used for short-term pain relief without the risk of precipitating a sickling crisis (2, 8). Continuous fetal heart rate monitoring is recommended to detect fetal hypoxia, which is more common in fetuses of sickle cell patients, particularly those with intra-uterine growth restriction or oligohydramnios[9]. American college of obstetrics and gynaecology however contend that intermittent auscultation with a pinard foetoscope is good enough[1].

The mode of delivery should be vaginal unless there is an obstetric indication for operative intervention. In the event of caesarean section, the haematologist should be contacted for advice. Blood should be grouped and saved in case a cross-match is needed. Regional block is preferable to general anaesthetic because it largely avoids the

risk of iatrogenic hypoxia. Our patient was delivered by caesarian section with good outcome.

The immediate post-partum period is a time of critical importance for patients with sickle cell disease. During this time, there is an increased risk of infections, thrombo-embolism and vaso-occlusive crises. Early ambulation, thrombo-embolic-deterrent stockings and appropriate hydration and oxygenation are encouraged. Prophylactic subcutaneous heparin is advisable until the patient is fully ambulant. The patient was on prophylactic heparin. There is no contraindication to breastfeeding[1, 5]. The presented patient was ambulated from the 1st postpartum day and initiated breastfeeding well. She continued the heparin she had started before delivery. Liberal oral fluid intake was ensured throughout her stay and advice on it enhanced at discharge.

Controversies abound on contraception in sickle cell disease. However, family planning is an important issue in these women, as multiple pregnancies in a short time can increase the frequency of crises. The use of progestogen-only contraceptive pills is not contraindicated in these patients. Depot medroxyporgesterone acetate and progesterone implants provide effective contraceptives, and a controlled study demonstrated beneficial effects on the haematology as well as bone pain. Medical Eligibility Criteria, a WHO guidebook on contraceptive use in presence of medical problem, classifies all progesterone only methods as class 1 in sickle cell disease. This means that the products should be used without restriction[3, 9, and 11].

Combined oral contraceptive pill though very effective in contraception is not widely used due to fear of increasing thrombo-embolic events. Full counselling and instructions must be provided before the use of these methods. WHO through classifies combined oral contraceptive in sickle cell disease in class 2. This is group of the product, which theoretically carries risk of complications, but studies have not proven these risks. This class of products requires supervision but can be used if better and acceptable options are not available[1, 5, 9] The risk of uterine and tubal infections with the use of an intra-uterine contraceptive device (IUD), particularly in nulliparous women, makes their use relatively contraindicated in sickle cell disease, but may used in special circumstances for those in whom other methods are considered to be unsuitable. There is evidence to suggest that levonorgestrel intrauterine system is associated with a lower rate of pelvic infection than

copper IUD use. Medical eligibility criteria classify copper based IUCD as class 2 and progesterone based as 1. Barrier methods are widely used, but may carry a higher risk of unwanted pregnancies compared with other methods. Upon completion of childbearing, sterilization should be considered with respect to the woman's desire for family size and the risk of genetic transmission. Many authorities advice only one child[3, 9]. Our patient opted for permanent contraception (BTL) and was done during the caesarean operation.

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OBSTETRIC CASE 5

MALARIA, SEVERE ANAEMIA –LIVE BIRTH:

NAME:	P.A
I.P No.	1045800
Age:	28 Years.
DoAdmission	31.08.05
L.M.P	29.12.04
E.D.D	05.10.05
GBD	35+ Weeks.
DoDelivery	17.10.05.
DoDischarge.	26.10.05

Presenting complaints:

Easy fatiguability—1 month.

Swelling of the body-- 2 weeks

Palpitations and headache—1 week.

Cough –3 days.

History of presenting Illness.

She had been relatively well till 1 prior to admission when she started noting that she was getting easily fatigued. She had visited a private clinic then and a blood slide for malaria was positive. She was given Metakelfin and she felt slightly better. With time, she started feeling tired after doing her normal household chores and she had to rest in between. This was not normal to her. This was progressive and two weeks later she noticed her body was swelling. The swelling started with the legs and later her face. The tiredness was still progressive. One week prior to admission, she became aware of her heartbeat and was

having accompanying headache. Three days before admission, she developed a productive cough. By day of admission, she was having difficult in breathing and could not finish a sentence without a pause.

Ante Natal Care.

She had attended ANC once (27th August 2005) at Mwiki health center. There was no profile done. She had presented with above symptoms thus referred to Kenyatta National Hospital. She came three days later.

Obstetric and Gynaecology history.

Menarche was at 15 years, the cycle was 30 days and regular. The flow lasted 4 days and had no dysmenorrhea. She has not used any conventional family planning method.

She was para 4 +0 gravida 5.

Her previous deliveries were as follows.

1992, term delivery, SVD, home delivery, female infant. She had retained placenta that was removed in hospital. The child was alive and well.

1996, term delivery, SVD, home delivery, female infant. Baby died at 1 month due to respiratory infection.

1998, term delivery, SVD, home delivery, female infant. The child was alive and well.

2000, term delivery, SVD, home delivery, female infant. The child was alive and well.

Family-social History.

She was a housewife and her husband was a casual labourer. She did not take alcohol nor smoke cigarette. There was no family history of chronic illness.

Examination:

General condition: She was sick looking, afebrile, pale^{++}, was not jaundiced but had generalize body oedema. There was pitting pedal oedema bilaterally.

Respiration system:

She was dyspnoeic but the chest had no rhonchi nor crepitations.

CVS: Pulse rate was 86bpm, the precordium was not hyperactive. There was a haemic murmur.

Per abdomen:

Fundal height –term. Lie was longitudinal. Presentation was cephalic and not engaged. The foetal heart rate was 148bpm.

Pelvic exam was not done since there was no indication.

Impression: Severe anemia at 35^{+} weeks.

Management:

Patient was admitted and blood taken for various investigations: these included grouping and cross-matching, full blood count and peripheral film, blood slide for malaria parasites, and for HIV test. Urinalysis was done and stool test was ordered for checking for ova and cysts. She was put on haematinics, and an intravenous access was established. In labour ward, she got the first dose of anti-malarial (Artemether).She was then transferred to the ante-natal ward to continue with the managenment since she was not in labour.

Results: Blood slide was positive for malarial parasites and the haematocrit was 14%. Full blood count report: WBC=$11x10^{9}$/l Hb was 2.92 g/dl. MCV was 67.2 Fl. MCH was 16.1 pg and MCHC was 24.0g/l. platelets were adequate at $368x10^{9}$/l. The peripheral blood film reported mild polychromasia, platelets were adequate. No features of sickling. Haemoblobin electrophoresis showed haemoglobin AA.

Kidney function tests: Urea = 3.8mml/l, Creatinine = 69μmol/l --these are within normal range.

Stool test was negative for any ova or cysts.

Urinalysis: Proteinuria+, numerous epithelial cells and Leukocytes+. Culture of the urine gave no browth.

HIV test was done after pre and post test counseling and was negative.

Liver function tests:

Total proteins = 58 g/L, Albumin = 22g/L, total bilirubin = 15.7μmol/L, Direct bilirubin = 6.5 μmol/L and Aspartate transaminase = 28 u/L. All these parameters were within normal.

VDRL test was non-reactive.

In the ward, she continued being monitored and was transfused a total of 5 units of blood by 29-09-2005. In the course of treatment, she had developed a productive cough and was treated with antibiotics (Benzyl penicillin).

After the anti-malarial dose was over, a repeat blood slide for malaria parasites was negative.

A repeat estimation of the haemoglobin on 12/09/05 showed a level of 7.5g/dl.

After the five units of blood, haematinics and antibiotics, the Hb rose to 8.2g/dl. Getting blood took time and that is how she came to stay long in the ward. Foetal movements and foetal heart were normal all this time of treatment. The patient stayed in the ward and went into labour on 17-10-05 and was then taken to labour ward for monitoring and delivery.

She was reviewed at 11.50 Am same day and findings were as follows.

General condition-Good, mildly pale, no oedema and afebrile.

Abdominal examination: Fundal height was term. Lie was longitudinal and presentation cephalic and descent was 3/5. Foetal heart was 138/minute and regular. Contractions were palpated and each lasted 25 seconds.

Pelvic examination: Eternal genitalia were normal. Cervical dilatation was 4 centimeters, fully effaced and central. The membranes were bulging and no cord presenting. Pelvis felt adequate. Artificial rupture of membranes was done and a clear liqour drained and there was no cord prolapse. She was augmented with syntocinon 10 units and partogram started. She progressed well and at 10.30 Pm she delivered a live male infant with Apgar score of 8:1, 10:5 and weighing 3300grammes. Placenta was delivered by controlled cord traction and was complete. The estimated blood loss was 400mls. After delivery, she was taken to fourth stage room and initiated breastfeeding. After two hours of observation, she was taken back to the ward together with the baby. In the ward, she had no complaints. She was discharged on 20th October and was to book postnatal clinic after 6 weeks for review. She was discharged on haematinics and prophylaxis for malaria.

DISCUSSION:

The patient presented with symptoms of anaemia and a history of prior malaria infection. Blood slide for malaria was positive. She was treated for malaria, was transfused and delivered a healthy 3.3Kg male infant. It is estimated that 300-500 million persons (40% of the world population) are infected at any one given time. WHO[1] estimates that malaria accounts for 5-15 % of deaths among children in endemic areas. In Kenya, malaria accounts for 30% of outpatient hospitals attendance annually.

WHO in conjunction with UNICEF estimates that about 30 million women become pregnant in malarious areas in Africa with most living in areas of stable malarial transmission.[2] Malaria is caused by a haematozoan of the plasmodium transmitted to man by Anopheles mosquito. There are four types of plasmodia that cause malaria in humans. These are plasmodium *Vivax*, P *malaria*, P *ovale* and P *falciparum*. Plasmodium falciparum gives rise to acute severe malaria but the other types have prolonged indolent course but can still be severe at the end.

During pregnancy, frequency and severity of infection increases. There is rapid instillation of anaemia due to haemolysis and sequestration of infected red blood cells into the reticuloendothelial system. Malaria in pregnancy also predisposes the woman to risks of miscarriages, low birth weight babies and preterm deliveries that contribute to increased perinatal morbidity and mortality. It has been estimated that 75,000 to 200,000 infants deaths are associated with malaria infection in pregnancy each year[6].

The presented patient had anaemia that warranted her being transfused. The presented patient had anemia that warranted her to be transfused. Prior studies had dwelt much on the effects of malaria on primigravidae and secundigravidae but it has been shown that women of high gravidity are also at risk[3]. P. *falciparum* has been shown to be more common in pregnant than non-pregnant women and to have a substantial adverse effects on pregnancy outcome. Some studies in Kenya identified certain strains that were at a higher frequency in pregnant women. These strains were able to adhere to Chondroitin sulfate-A on the syncytiotrophoblasts[4]. The P *falciparum* presents the most severe form of malaria because of its ability to invade all stages of the red blood cells. P *vivax* and

ovale invade reticulocytes only and P *malariae* invades only the mature cells. Malaria presents with fever, general malaise, headache, myalgia and sometimes vomiting. The patient may have pallor of varying degrees. Anaemia often correlates to the degree of parasitaemia as found by Rukaria[5] and associates. Diagnosis is through the history coupled with blood slide. The patient had a positive slide at admission and also prior to admission. Treatment for the malaria is by artemether based drugs. This followed a WHO report that concluded that Artemesinin and its derivatives were to be the drugs of choice for severe malaria in second and third trimester[7]. The presented patient was in the third trimester. The artemesinin based drugs have a more convenient dosage since they are given once daily. In some instances, treatment with intravenous quinine is preferred. Patients with severe malaria are prone to hypoglycaemia and should receive dextrose infusion. Anaemia is associated with high morbidity and mortality if not corrected thus women with severe anemia should receive blood transfusion as did with the patient presented.

Globally, the Abuja declaration of April 2000on concept of "Roll-Back Malaria"(RBM) aims at reducing the malaria related deaths among pregnant women and children0-5 years by 60% by the year 2010. The tripod principles of RBM are 1) the use of insecticide treated nets (ITNs), 2) use of intermittent presumptive treatment (IPT) and 3) Early diagnosis and prompt treatment of cases. These components have been incorporated in the health messages that are given in the antenatal clinics. The government of Kenya also provides ITNs to pregnant women. In a study in western Kenya done among gravidae 1-4, ITN was associated with a significant reduction of 38% of incidences of malaria parasitaemia and 47% of severe malaria in pregnancy[8]. Patient P.A had attended clinic only once. The implementation of IPT assumes that every pregnant in a malarial endemic area is infected with malaria. The recommendation is to give at least two doses of an effective anti-malarial. Patient P.A did not receive the anti-malarial prophylaxis. Three Fansidar tablets every 12 weeks until delivery is what is recommended by the ministry of health here in Kenya. There is emphasis on the use of pre-treated mosquito nets and this has been shown to substantially prevent malaria.

Research continues in search of a vaccine for malaria.

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OBSTETRIC CASE 6

ECLAMPSIA – CAESERIAN SECTION – LIVE BIRTH

NAME: C.M

IP NO: 1094812

AGE: 26 YEARS

D.O.A: 19/05/06

D.O.D: 28/05/06

PRESENTING COMPLAINT

She was admitted with a history of having fitted three times over the past six hours prior to admission. The fits were described as generalized clonic tonic with each episode lasting about 3 minutes; she had her last fit while on the way to hospital. At admission, she was in semi comatose state with a BP of 167/100mmHg.

PAST MEDICAL HISTORY

She had no history of epilepsy or any convulsive disorder. She had no chronic illness and had never been hospitalized before.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was a para 2 + 0, gravida 3. Her last menstrual period was on 28/08/2005 and therefore her EDD was on 4/06/06. This gave gestation period of 37 weeks and 5 days. Her other deliveries were vaginal deliveries in hospital in years 2000 and 2003. The two children were alive and were both males. Menarche was at 14 years. She had regular menses with a cycle of 28 days. The flow was 4 days and there was no dysmennorhea. She had used combined oral contraceptive pills as a method of contraceptives. She had no history of high blood pressure during her other pregnancies nor prior to current pregnancy.

ANTE-NATAL CLINIC:

She had attended ANC at Kawangware and had made four visits and the blood pressure range had been 120-150/80-100mmHg. Urinalysis done once was normal. The booking haemoglobin level was 12.2g/dl, HIV and VDRL were negative.

FAMILY SOCIAL AND OCCUPATIONAL HISTORY

She was married and lived with her husband at Kawangware. She had her husband as her only sexual partner since she got married. She neither drunk alcohol nor smoked cigarettes. There was no history of chronic illness in her family. She had a primary education.

PHYSICAL EXAMINATION

Patient was drowsy in post-ictal state but arousable. Her pupils were equal and bilaterally reacted to light. There was no focal lateralising sign. BP: 167/100mmHg, Pulse: 100/minute, RR: 20/minute, Temperature: 36.5^{0}C

Cardiovascular and respiratory System

Both systems were normal.

ABDOMEN

The abdomen was distended with a fundal height corresponding to term. The fetus was in longitudinal lie and cephalic presentation. The descent was 4/5 up and fetal heart was heard and regular at 134 beats per minute. There were no palpable contractions.

VAGINAL EXAMINATION

The external genitalia were normal. The cervical os was closed. The cervix was 2cm long, firm and posterior. The pelvis was clinically adequate. Catheterization was done aseptically and clear urine (about 50 mls) drained.

INVESTIGATIONS

Urinalysis – proteins of 2+

Haemoglobin level: 12g%

Blood slide for malaria parasites was negative.

U/Es

Na^{+} - 142mmol/l
K^{+} - 3.5mmml/l
Urea - 6.0mmol/l
Creat 60 micromoles/litre.

LFTs.... Total proteins...55 mmoles/l
Albumin 26 mmoles/l
ALP 194/l
Bilirubin ....total 6.4
....Direct 1.1

DIAGNOSIS

A diagnosis of eclampsia with poor bishop score at term was made.

MANAGEMENT.

She was catheterized, intravenous access established; blood for grouping and cross-match was taken and started on Magnesium sulphate ($MgSO_4$) solution 4g bolus and then a drip of 5g in drip. The $MgSO_4$ intravenous infusion was regulated to run at one gramme per hour.

Due to the unfavourable cervix, arrangements were made for delivery by emergency caeserian section. A written informed consent was obtained from the husband.

In theatre she was placed in supine position, abdomen was cleaned and draped and put under general anaesthesia. The abdomen was opened through a Pfannentiel incision and a lower uterine segment caeserian section done. The outcome was a live female infant birth weight of 2750gm and with an APGAR score of 8/1, 9/5 and 10/10. The baby was reviewed by a paediatric resident and was stable and was to join the mother. The placenta wad delivered by controlled cord traction and grossly looked normal. The uterus was then sutured in layers and the abdomen was closed after correct instruments and swabs count. The general anesthesia was reversed uneventfully.

POSTOPERATIVELY

Postoperatively she was taken back to the acute room in labour ward where she stayed for 24 hours. She continued on MgSO4 infusion and antibiotics, Cefuroxime axetil (Zinacef®) 750mg every 8 hours. The Blood Pressure stabilized at the range of 120-140/80-90mmHg. She had no postpartum convulsions. After 24 hours, she was transferred to the lying-in ward. She continued on intravenous antibiotics and analgesics but was not given antihypertensives because the blood pressure normalized. The patient and her infant remained stable, urine output was adequate and renal functions were normal. She was discharged on the 7th post operation day on oral antibiotics and was to be reviewed in the postnatal clinic in four weeks.

POSTPERATIVE FOLLOWUP

She was reviewed after four weeks in the postnatal clinic. Her blood pressure was 120/70mmHg. The wound was well healed and the uterus was well involuted. She was referred to the high-risk clinic but she did not honour the appointments. Further follow up was therefore lost.

DISCUSSION

The presented patient had antepartum eclampsia at term. She was delivered by emergency caesarian section due to poor Bishop Score. The outcome was a live female infant who had good score and post operative period was uneventful.

Eclampsia is the occurrence of seizures that cannot be attributed to other causes in a woman with preeclampsian (PET). The seizures are of grand mal type and may appear before, during, or after labour. [1]

The patient C.M had no other cause of seizures as she had no history of epilepsy and blood slides for malaria was negative, but had elevated blood pressure.

About 75% of cases occur before delivery most commonly in the last trimester, and become increasingly common as term approaches. About 50% of the postpartum eclamptic seizures occur in the first 48 hours after delivery but they may occur as late as 6 weeks postpartum. [2]

The incidence of eclampsia varies with geographical location. This is attributed to differing ANC between varying centers. It is highest in the developing countries (0.17% in Nairobi, 0.39% in Ile-Ife in Nigeria) as compared to developed countries (.0036 in Oxford UK). [3,4,5,6]

Eclampsia is therefore a consequence of poorly managed PET with a higher incidence reported in unbooked mothers.[3] Antenatal care provides the opportunity for proper screening, early recognition and provision of appropriate care for those patients with classical signs of preeclampsia.[7]

The patient presented had attended antenatal care in Kawangware where blood pressure was normal.

The actual etiology of PET is unknown, but has a complex pathogenesis. It is known to be associated with failure of trophoblastic invasion of spiral arteries and placental ischaemia, but the mechanisms of this impairment is unknown.[1, 8] It is proposed that the diffuse systemic endothelial dysfunction is triggered by factors released from ischaemic placenta. Other possible causes include genetic predisposition, increased pressor response, endothelins, nitric acid, endothelial cell activation, coagulation abnormalities and cardiovascular system maladaptation.[1, 8,9,10]

Vascular constriction causes resistance to blood flow and subsequent arterial hypertension. Endothelial cell damage and leakage causes local hypoxia, haemorrhage and end organ damage as in severe PET and eclampsia.

The predisposing factors to preeclampsia and hence eclampsia include nulliparity, black race, maternal age below 20 and above 35 years, low socio- economic status, multiple gestation, hydatidiform moles, polyhydroamnios, non-immune fetal hydrops, diabetes, chronic hypertension, and underlying disease. [2]

The presented patient was of black race and low socio economic status, which are some of the predisposing factors to pre eclampsia.

The management of eclampsia consists of:

- Control of seizures
- Blood pressure control
- Expedited delivery
- Management of subsequent complications

Magnesium sulfate has been proved to be effective and safe and is the drug of choice for the control of seizures and it was given to the patient. and safe. [1, 2]

Other drugs used for control of seizures include diazepam, phenytoin and chlormethiazole.

Blood pressure is controlled by boluses or drips of hydralazine. Other drugs, which may be used, include labetolol, nifedipine, diazoxide and trimethapan. Timing of delivery depends on the patient's condition, state of the cervix and progress of labour at admission. A 4 to 8 hours trial of labour may be indicated for most patients with preeclampsia – eclampsia. If neither effacement nor dilatation of the cervix has occurred and does not occur significantly over this period, caeserian section is performed.

In severe preeclampsia fetal gestational age less than 32 weeks, and an unfavorable cervix, caeserian section is performed without a trial of labour.

Patients who remain comatose one hour after the last fit within four hours. In these patients a caeserian section is required unless the patient is in established labour, and would deliver within 2-4 hours.

Patients a good bishop score or already in labour are preferably delivered by vaginal route within 12 hours.

The patient C.M presented had repeated convulsions, was in poor neurological state and poor Bishop score, hence she was delivered by caeserian section.

Complications of eclampsia include renal failure, consumptive coagulopathy, pulmonary edema, abruptio placenta, pulmonary embolism, cerebral vascular accidents, blindness, hypertensive crisis, high maternal and fetal morbidity and mortality.[2] The index patient did not develop any of these complications.

After delivery the patient should be monitored in the acute room for 24-48 hours. The $MgSO_4$ is continued together with hydralazine if BP is still elevated for that length of time. The antihypertensive and anticonvulsants are then weaned off stepwise as the patient stabilizes.

The blood pressure usually settles within 48 hours of delivery or may be delayed for up to 2 weeks and occasionally up to six weeks. C.M had a normal BP within 12 hours of delivery and there was no evidence of end organ damage.

A variety of strategies have been used in attempts to prevent pre-eclampsia. Usually these strategies involve manipulation of diet and pharmacological attempts to modify the pathophsiological mechanisms thought to play a role in the development of pre eclampsia. The latter includes use of low dose aspirin and antioxidants. The antioxidants commonly used include Vitamin C, Vitamin E and folic acid.[1]

The presented patient had a normal booking and subsequent blood pressures in her antenatal follow-up.

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CASE 7: VULVAL HAEMATOMA.

NAME: **J.M**

AGE: 25 YEARS
IP NO: 1061582
PARITY: O + O
D.O.A: 28/11/05
D.O.D: 30/11/05
L.M.P 01/03/05
EDD 08/12/05

PRESENTING COMPLAINT .

Lower abdominal pains that were radiating to the back and increasing in frequency and intensity. Duration of the pains was five hours. The foetal movements were adequate, she had not ruptured membranes and she had no per vaginal bleeding.

Antenatal care:

She had attended Umoja hospital for her ante-natal care. The antenatal parameters were as follows;

Haemoglobin was 12.0g/dl; Blood group was Group B Rhesus positive. VDRL was negative. Urinalysis was reported as normal.

She had received two doses of tetanus toxoid during her antenatal visits.

She had suffered from malaria (Blood slide positive) at about 28 weeks and was treated with Artemether.

The blood pressure had remained within normal.

Past Medical history:

She had no history of easy bruisability, or prolonged bleeding. She had no chronic illness nor was she on any medication.

Obstetric and Gynaecology History:

Para 0+0 and LMP was 01/03/2005 giving a gestation of 38+ weeks.

Menarche was 14 years. The cycle was 28 days and the flow lasted for four days and the flow was normal. She had not used any family planning method.

Family Social History:

She was married and worked in a restaurant (Hooters). She did not smoke cigarettes nor take alcohol. Husband worked in a private company as a sales man.

EXAMIANTION:

General condition was good. She was not pale and was afebrile.

Vital signs

Pulse rate was 86 Beats per minute. Blood pressure was 110/80 mmHg.

Respiration rate 16/minute

Abdominal examination.

Fundal height—Term.

Lie—longitudinal.

Presentation—cephalic and 4/5.

Foetal heart was heard and regular and was 148bpm.

A contraction was palpated that lasted 20 seconds.

There were no areas of tenderness.

Pelvic examination.

She had normal external genitalia. The cervix was 4 centimeters dilated, fully effaced and well applied to the presenting part. The membranes were intact and there was no cord presentation.The pelvis felt adequate clinically.

Other systems were essentially normal.

Impression.

Primigravida in active labour with intact membranes.

Plan:

1) Artificial rupture of membranes was done. The liquor was clear and there was no cord prolapse. She was augmented with syntocinon 10 iu in 500ml of 5% dextrose.
2) Analgesic was given—tramadol 300mg intramusculary as a stat dose.

3) Partogram was instituted.

She progressed in labour and at 7 pm, she delivered a live female infant weighing 3000grames and with an Apgar score of 9:1 and 10:5.

The placenta was delivered 10 minutes later and was complete. She was not given an episiotomy but got a perineal tear that was sutured.. Estimated blood loss was 150 mls. After the delivery, she was allowed to initiate breastfeeding and transferred to 4th stage room. At about an hour after delivery, she started complaining of pain in the vulva area. Examination then revealed a small swelling on the site of the sutured tear and she was reassured. The swelling continued increasing and after thirty minutes, she was reviewed and examination revealed a tense, shiny but fluctuant swelling measuring about 10 centimeters by 10 centimeters. The swelling was very tender and the patient was in much pain. The conjunctival pallor had increased, pulse rate had risen to 96/minute while blood pressure was 100/60mmHg. The sutures were released with huge clots escaping but this did not fully relieve the patient.

Due to the extent of the haematoma, a decision to drain it under general anesthesia was made. The patient was counseled on the findings and implications and the intended management. She gave an informed consent, theater was informed, intravenous access was established and a sample of blood was taken for grouping and cross-matching.

In theater, the patient was put under general anaesthesia, put in lithotomy position, cleaned and draped. Aseptic catheterization was done and clear urine drained. An incision was made at the point of maximum distention. Free blood and clots were evacuated. The amount was about 200 mls. The cavity was explored and active bleeding vessels were ligated. The cavity was obliterated with mattress sutures and haemostasis was achieved. Patient was transfused 1 unit of blood during the operation. Vaginal packing was done and was to be removed after 12 hours. Examination The general anesthesia was reversed and patient taken back to labour ward. In the labour ward, she remained stable and when fully awake, she was taken to the ward. Post operatively, she did well on antibiotics, analgesics and no bleeding was reported. She was discharged two days later to continue with antibiotics, analgesics and sitz baths. She was to book postnatal clinic to be seen in six weeks but she did not turn up.

DISCUSSION:

The presented patient was a 25 year old primigravida who delivered vaginally and developed a vulvar haematoma that was successfully drained in theater. She was transfused *1* unit of blood. Vulvar trauma is one of the causes of post partum haemmorhage (PPH) and this occurs particulary after vaginal deliveries[1]. The other causes of PPH are uterine atony, retention of products of conception and thrombopathy. During vaginal delivery, there is always a risk of having genital tract injury. The injury may involve the perineum, vulvar, vagina or the cevix. The presented patient had vulvar injury[2].

All perineal lacerations except the most superficial are accompanied by varying degrees of injury to the lower portion of the vagina. The perineal and vaginal fascia has to be sutured to avoid future cystocoele and rectocoele. When the lacerations are superficial, clean and less than 6 hours, primary closure is the norm.

Deep lacerations need exploration under general anaesthesia. The deep layers of subcutaneous vulvar fascia are not attached to the pubic rami hence the haematoma can spread to the anterior abdominal wall freely. The haematoma in the presented patient was localized.

The presentation is that the patient complains of severe perineal pain accompanied by sudden onset of a tense fluctuant and sensitive tumour of varying size and covered by discolored skin. There may be complaints of inability to pass urine[3]. If left unchecked, the patient may complain of dizziness, headache and will have anaemia whose degree is much higher than can be explained by observed blood loss. Patient J.M had an increasing pallor that could not be explained by the lochia loss. The haematoma can spread to the anterior abdominal wall, the tissues overlying the haematoma may give way due to pressure necrosis and this is usually followed by profuse bleeding.

The management depends on the clinical symptoms and size of the haematoma. Small haematomas may be absorbed spontaneously. External compression and ice packs could

be applied until haemostasis is ensured by serial examination of the vulvar. Vulvar hematoma continuing to expand despite external pressure, or presenting acutely with a size greater than 10 cm, should be incised and evacuated, with ligation of bleeding vessels and packing placed to secure hemostasis[4]. Patient J.M had a haematoma that continued to expand and was about 10 cm.

When signs of shock develop or the swelling continues to increase, the management involves evacuation. Evacuation is done under anaesthesia and this ensures good exploration. The bleeding vessels are ligated and the space obliterated with mattress sutures. When no obvious points of bleeding are noted, the vagina is packed for 12-24 hours. Blood loss is nearly always greater than the clinical estimate. To prevent hypovolaemia, adequate fluid and blood replacement is done. The presented patient was transfused 1 unit of blood. This goes with what Zahn and Yeoman concluded in 1990: in about half of women with haematoma requiring surgical repair, transfusions are necessary. Patient J.M was transfused after evacuation in theater.

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OBSTETRIC CASE 8.

BREECH IN A PRIMIGRAVIDA, ELECTIVE CESAREAN SECTION, LIVE BABY.

NAME: A.W.N IpNo—1084477. Age: 25

Primigravida L.M.P: 30/06/2005. E.D.D: 7/04/2006 GBD 39^{+} weeks.

Date of admission....03/04/2006.

Date of operation.....04/04/2006.

Date of discharge.....07/04/2006.

She was admitted on 3rd April 2006 for elective cesarean section with the indication being breech at term.

A.N.C.

She had started her ANC at Buruburu clinic then booked Kenyatta National Hospital and then made three visits.

Ante-natal profile

Blood group------ B Rhesus negative.

Booking haemoglobin level------ 13.0 g/dl

H.I.V and VDRL------Negative.

Urinalysis-------nothing significant.

Booking blood pressure-------110/60 mmHg and it remained within normal throughout the pregnancy.

She received two doses of tetanus toxoid.

An obstetrics ultrasound scan done on 28/02/2006 showed a single viable fetus in breech presentation at 33 weeks, the placenta was fundal posterior and the amniotic fluid was adequate. Examination during the antenatal visits revealed that presentation was breech and this persisted to term. Decision to have her under-go elective cesarean section was arrived at after discussing with her.

Obstetrics and Gynaecology History.

Para 0+0. LMP of 30/06/2005. Her menarche was at 15 years, cycle of 28 days and regular menses. She had not used any contraception.

Past medical history:

There was nothing significant. She had no drug allergy.

Family Social History:

She was single and staying with her sister at Wangige

She was working in Kenya commercial bank. She had attained University level education. She did not smoke cigarette or take alcohol.

PHYSICAL EXAMINATION.

She was in good general condition, was afebrile, not pale and had no pedal oedema.

Vital signs.

Blood pressure 110/70 mmHg. Pulse rate was 78 beats per minute and a respiration rate of 18/minute. Temparature was 36.4^{0}C.

ABDOMINAL EXAMINATION.

The abdomen was uniformly distended and moving with respiration. She had no areas of tenderness.

Fundal height was term and this corresponded with dates.

The lie was longitudinal and presentation was breech. The foetal heart was heard and regular at 152/minute. Liquor felt adequate. There were no palpable contractions.

The estimated weight was 3.5 Kg.

VAGINAL EXAMINATION:

She had normal external genitalia, cervix was closed, long (2Centimeters), soft and posterior. The pelvis felt adequate.

DIAGNOSIS.

Breech at term (39^{+}weeks) with an EFW of 3500g in a primigravida.

Analgesics were pethidine that was to be given 100mg intramuscularly 6 hourly and Diclofenac whose dosage was 75 mg intramuscularly 8hourly. Antibiotics were Gentamycin-80mg every 8 hours and Crystalline penicillin 2megaunits every 6 hours. She continued on intravenous fluids and she was started on oral sips when reviewed the following morning. She was to graduate to light diet by afternoon on the 1st post-operation day. On the first post-op day, the blood results for the baby were availed. The blood group for the baby was AB Rhesus^{+} and thus the mother was given 300 microgrammes of anti-D intramuscularly. The mother was reunited with her baby and breastfeeding initiated. The post operation period was uneventful and patient was discharged on the 3rd day after the operation. She was to be seen in the post natal clinic in 4 weeks. She was reviewed and she had no complaints. The would had healed well and the baby was doing well. She had made a decision to exclusively breast feed for 6 months and was to abstain from sex since she was not married.

DISCUSSION:

The patient presented was a primigravida who was delivered by elective cesarean section due to breech presentation and the out come was a live female infant weighing 3600grammes.

Breech presentation occurs when the buttocks of the foetus enter the pelvis first and the incidence has been found to be 3-4% at term[1]. In preterm, the rate of breech presentation is higher and is said to be about 20 % at 28 weeks gestation. In Kenyatta National Hospital, Njuki found a rate of 3.5%[2] term breech deliveries. Before 28 weeks, the foetus is small enough to rotate from cephalic to breech and back to cephalic. As the gestation increases, the uterine room decreases and movements become less. In most cases, the foetus assumes the cephalic presentation to better accommodate the more bulkier breech pole in the roomier fundal portion of the uterus[3].

The version to cephalic may fail to occur and thus breech presentation occurs.

In the presented patient, breech persisted to term.

Factors associated with breech are as follows:

- Prematurity
- Uterine anomalies
- Multiple gestations
- Placenta praevia
- Pelvic tumors
- Foetal anomalies
- Contracted pelvis.
- Previous term breech. The patient A.W. N had none of those factors.

There are 3 types of breech presentation.

1. Frank breech (extended) where the hips are flexed and the knees are extended. This forms about 65% of the breech presentation.
2. Complete breech where the hips and knees flexed. This constitutes 10%.
3. Incomplete (footling) where one foot is at a lower level than the buttocks.

MANAGEMENT.

She was informed on the findings and that presentation had persisted as breech. She was counseled again on the mode of delivery was to be by cesarean section and she agreed. Her haemoglobin level was 13.8g/dl and urea and electrolytes were within normal. She signed an informed consent form and blood was taken for grouping and cross-matching and theater informed. She was scheduled for theater the following day and was advised to starve as from midnight that admission day.

The following day, she had an intravenous line fixed, gowned and then given an Atropine injection of 0.6 Mg intramuscularly. She was then wheeled to theater.

THEATER:

She was prepared and given spinal anaesthesia then placed in semi-lithotomy position and vulval toilet was done and then catheterised aseptically and 30 mls of clear urine drained.

The patient had her abdomen scrubbed, draped and a Pfanniestiel incision made to open the abdomen. The paracolic gutters were packed with sterile towels. The urinary bladder was deflected inferiorly and the well formed lower uterine segment was exposed and a lower uterine cesarean section done. A live female infant with birth weight of 3600 gm was delivered in breech. The Apgar score was 9 at 1 minute and 10 at 5 minutes. The mother was shown the baby and then the infant was reviewed by a paediatrician who was on standby and recommended to be taken to NBU for investigation given that the mother was blood group O rhesus Negative. The placenta was delivered by controlled cord traction and was grossly normal. Cord blood was taken for testing for bilirubin levels, haemoblobin levels, direct coombs test and blood group. Uterus was cleaned and sutured in layers with achievement of haemostasis. Abdominal toilet was done and after packs and instruments were counted and reported correct, abdomen was closed in layers. The skin was sutured with an absorbable suture-vicryl 2/0. The abdomen was dressed and patient taken to the recovery unit. The estimated blood loss was 400 mls. Post operation observations were within normal and patient then taken to the ward. Post operation treatment consisted of analgesics, antibiotics, intravenous fluids and physiotherapy.

EXAMINATION OF A BREECH PRESENTATION:

Breech is diagnosed when performing the Leopolds maneuvers. During the first maneuver, the hard foetal head is palpated in the fundus. The lie is usually longitudinal and on auscultation, the foetal tones are heard just above the umbilicus. The patient was examined and on all occasions the presentation was breech. Vaginal examination in the last clinic visit confirmed the breech presentation. Delivery of breech presentation could be either through cesarean section or vaginal delivery.

The risks of vaginal breech delivery:

- Cord prolapse.
- Entrapment of the after coming head because the breech may not fully dilate the cervix and the head will not have time for moulding to occur.
- Birth anoxia may occur due to cord compression and prolapse more so in complete or footling breech.
- Birth injury: the incidence of birth trauma during vaginal breech delivery is 6.7% and this is 13 times that of cephalic (0.51%)[3]. Intra cranial foetal haemorrhage is also a complication in vagina breech delivery.

External cephalic version (ECV) has been advocated for breech before term. Studies have shown that success rate for ECV done before term was 70%; however there was a high reversion rate so that this does not reduce the c/s rate. An international multicenter randomized control trial concluded that elective cesarean section reduced perinatal death by 75%.[4] thus from this study, elective c/s was recommended for breech presentations. This has been supported by WHO as stated in reproductive health library No.8.

The risks of ECV include placental abruption, amniotic fluid embolism, issoimmunisation, preterm labour, foetal distress and even fetal demise[5]. ECV was not tried in this patient who was blood group B rhesus negative. In KNH, ECV is not routinely advocated and no studies to evaluate ECV have been done.

Cesarean section is the method of delivery for term breech unless they come in 2nd stage. There are factors [6] that would favour breech delivery and these are,

- Adequate pelvis with a true conjugate of >11.5cm.
- Estimated Foetal weight less than 3200gm

- Flexed head
- Prior breech delivery
- Presenting part is sacral anterior.

The estimated foetal weight was 3500gm and the birth weight was 3600gm for this presented patient.

There are three types of breech deliveries.

1-Sponataneous breech delivery. In this type, there is no traction or manipulation but only support of the foetus.

2- Assisted breech delivery; in this breech delivery, the foetus is allowed to be delivered upto when one sees the shoulder blades then assists in the delivery of the arms and head.

3- Total breech extraction-the entire body is extracted from inside and delivery allowed upto shoulder blades then assisted as above.

There has been developed a scoring system by Zatuchni-Andros and is as under.

	0	**1**	**2**
Parity	0	1	2
Gestation weeks	39	38	37
EFW	3600gm	3200-3559gm	<3200gm
Previous breech	0	1	2
Dilatation	2	3	4
Station	-3	-2	-1

Cesarean section is recommended for scores 0-4. The patient presented had a score of 1(EFW of 3500g)

The out come was a live female infant thus management ensured a good outcome both for the mother and baby.

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OBSTETRIC CASE 9

VAGINAL BIRTH AFTER CESAREAN (VBAC) SECTION-LIVE BABY.

NAME :	C.M	**AGE:**	30
IpNo.	1073017	**DOA**	4/02/06
DODelivery	4/02/06	**DODischarge**	06/02/06
Parity :	1+1 with one previous scar.		
LMP:	24/04/05	**EDD:**	31/01/06
GBD:	40weeks, 4days.		

PRESENTING COMPLAINTS

Lower abdominal pains that were increasing in frequency and in intensity and radiating to the back. The pains were lasting about 10 seconds and coming after 10 minutes. She had seen a bloody mucoid discharge per vagina. The pains had started about 2 hours prior to presentation in labour ward.

ANC:

She had attended Kenyatta University clinic as from about 20 weeks of gestation.

Antenatal profile:

She had six visits and antenatal profile done was as under;

Booking Haemoglobin was 11.5g/dl, Blood group O Rhesus positive, VDRL – Negative, HIV was negative and the booking blood pressure 120/80 mmHg.

She received a booster tetanus toxoid during her clinic.

OBSTETRICS AND GYNAECOLOGY HISTORY:

Para 1+1 gravida 3.

1st pregnancy was in 2000 that ended with an abortion at $3^{1/2}$ months and a manual vacuum aspiration was done.

2^{nd} delivery was in 2002 by cesarean section due to foetal distress. Outcome was a live male infant with weight of 3000gm. Pueperium was uneventful and the child was alive and well.

Menarche was at 15 years, had a flow of 4 days and the cycle was 28 days.

She had used Depo-Provera erratically prior to conception.

PAST MEDICAL HISTORY:

There was nothing contributory. She had no prior admissions or any chronic illnesses.

FAMILY SOCIAL HISTORY:

She was married and was a student at Kenyatta University. She neither drank alcohol nor smoked cigarettes.

The husband was store officer in Kenyatta University.

EXAMINATION (at 5.15pm):

She was in good general condition, afebrile, not pale and no oedema.

Vital signs:

Blood Pressure was 120/75 mmHg, pulse rate 80/min, Resp.Rate of 18/min and Temperature was 36.3^{0}centigrade.

ABDOMINAL EXAMINATION:

The abdomen was uniformly distended and a pfanniestiel scar was appreciated.

The fundal height was term, the lie was longitudinal and presentation was cephalic.

Head had descent of 3/5.

Foetal heart rate was regular at 148/min.

3 contractions every 10 minutes and each lasting 20 seconds were palpated.

There were no areas of tenderness.

The estimated foetal weight was 2900gm.

PELVIC EXAMINATION:

She had normal external genitalia, the cervix was about 3 cm dilated, short-0.5cm and anterior. It was about 75% effaced and well applied to presenting part. The membranes were flat and an attempt at amniotomy was not successful.

The pelvis felt clinically adequate.

IMPRESSION:

Active labour in a 1 previous scar at term.

Management:

Decision to try the scar was made.

The patient was explained about the mode of management and she accepted.

An intravenous line was established, blood for grouping and cross match was taken (2units) and partogram was started. She was given analgesic-Tramadol 100mg intramuscularly as a stat dose.

The contractions picked up and two and a half hours after admission, they were moderate and a review done then found the cervix was 6 cm dilated and the membranes were bulging and there was no cord presenting.

ARM was done and the liquor was clear, there was no cord prolapse. The foetal heart rate after the ARM was within normal. She was given an injection of Hyoscine-butylbromide 40mg intravenously and partograph was continued.

She progressed well and five hours after admission, she delivered a live female infant, birth weight 3100gm and Apgar score was 8 at 1 minute and 10 at 5 minutes. The placenta was delivered by controlled contraction and was complete. The mother was given syntocinon intramusculary at the birth of the anterior shoulder to effect contraction of the uterus. The infant had no abnormalities and she was given to the mother to initiate breast feeding. The estimated blood loss was 400 mls. The mother was made comfortable in the 4th stage room for observations. After two hours, she was transferred to the post natal ward with her baby. She had no bleeding and her immediate postpartum observations were normal.

She was reviewed the following morning. She had no major complaints except the after pains for which she was put on analgesics. The baby was breastfeeding well and the uterus was well contracted with a height equivalent to 18 weeks gravid uterus.

The lochia loss was normal and rubra. She had changed 3 pads since delivery and she said only the first had been soaked. She was fit to be allowed home but she requested to be allowed home the following day. She was discharged on the second post natal day on Ampiclox capsules 500mg eight hourly and Diclofenac 50 mg 8 hourly. She was given an appointment to be reviewed in post natal clinic in 6 weeks.

Follow-up.

She had no complaints when she came for the postnatal clinic. The baby was doing well and she was referred to the family welfare clinic for discussion of family planning options.

DISCUSSION:

The presented patient had one prior cesarean section and had a successful vaginal delivery to a live female infant.

Cesarean section (c/s) as a mode of delivery has been used to reduce maternal morbidity and mortality in the world. The c/s rate was seen to increase in U.S.A from 4.5% in 1965 to 25 % in 1981. The rate went down in the nineties but picked again as from 2000 and the rate in 2002 was 26.1 %. In 2003, the cesarean delivery rate in U.S.A was 27.6 %. One third of the c/s were due to a history of a prior c/s.[1]

In Kenyatta National Hospital, c/s rate was found to be 17.8 % in 1980 and a 59% rate of repeat section.[2]

Reasons[1,3] for the rise in c/s rate may be related to

- Reduced parity-c/s is more common in primiparas.
- Elderly primigravidas-this will also increase the likely hood of cesarean section intervention.
- Continuous foetal monitoring has increased the cesarean delivery for non-reassuring foetal heart.
- A diagnosis of dystocia is made more often and managed by cesarean delivery.
- Fear of malpractice litigation.
- Discouragement of use of vacuum and mid-pelvic forceps.
- Acceptance of the concept of patient's choice.

For a long time doctors had followed the pronouncement by Cragin-*once a cesarean, always a cesarean* made in 1916. This was before lower transverse c/s was practiced. In 1978, Merrill and Gibbs (1978) reported an 83 % success rate in VBAC in a University of Texas. Since then, various studies have been done and recommendations done on trial of scar.

This stems from the advantages that accrue from VBAC. These include, shorter hospital stay hence saving on expenses, decreased wound sepsis and fewer neonatal respiratory problems[4]. The patient discussed was discharged on the second post natal day. At Kenyatta National Hospital, there is room for trial of one previous scar but 2 previous scars, c/s is routine.

There is a selection criteria for those that will have trial of scar. The selection criteria are as follows.

- No contraindication to labour or vaginal birth.
- The previous scar must be low transverse.
- A clinically adequate pelvis and true conjugate of 10.5 cm or more.
- Estimated foetal weight less than 3500gm.
- Doctor available through out-to make decision for and perform emergency cesarean section. In our unit, there is always a doctor in theater ready to perform c/s as may be decided by the doctor in the labour ward unit.
- Delivery by cesarean section within 30 minutes if that need arises.
- Continuous monitoring and with available blood ready in case of deciding to deliver by c/s.
- Gestation before 40 weeks. Beyond 40 weeks, the likelihood of successful VBAC appears to be lower than if done before 40 weeks.[4]

From the foregoing criteria, it is only the continuous electronic monitoring and gestation factor that were working against trial of scar. Close monitoring was done and blood was available, she had an intravenous access, estimated foetal weight was less than 3500gm and the doctors were available incase she was to be operated.

- In the U.S.A, a group promoting VBAC set a target of reducing repeat c/s births from 72% in 1998 to 63% in 2010 while ensuring the mothers and infants are not exposed to an increase in morbidity and mortality[6]. In 2002, the VBAC rate in USA was 12% having fallen from 31% in 1998. This may be explained by a recommendation by the ACOG that staff had to be available during the trial of labour[1].

The use of oxytocin has been implicated in uterine rupture in women with prior cesarean delivery. Turner (1997) found that 13 of the 15 women who had uterine rupture in Dublin between 1982 and 1991 had received oxytocin for induction of labour.[1, 7]

The patient C.M did not receive syntocinon because she had spontaneous labour and the progress was good.

Examination of the scar after delivery is no longer practiced and C.M did not have the scar examined. Surgical correction of a scar dehiscence is necessary only if significant bleeding occurs.[1]

From studies, it has been shown that patient with 2 prior c/s scars are 5 times more likely to rupture than one previous cesarean delivery (0.8 % versus 3.7 %)[1].

An American Agency for Healthcare Research and Quality did a study (2003) and pooled vaginal delivery rates from prospective studies and found the success rate to be 76% of VBAC. The group found that the largest population based study reported 60% success rate.

There has been no universally accepted predictor of successful VBAC. A study involving 2502 patients[9] who attempted VBAC identified some variables that could be used.

- Age under 40 years
- History of previous vaginal birth.
- Other indications apart from failure to progress.
- High degree of cervical effacement an admission to labour unit.

There has been no randomized controlled trial. Bujold[10] and others found age less than 35 years to be a better predictor of success in trial of labour in a previous scar.

However, it is now felt that a previous successful VBAC is probably the best predictor of future success; 93 % of such women deliver vaginally with trial of labour.[11]

The patient discussed had good cervical effacement, less than 35 years and prior c/s was due to foetal distress. She had successful VBAC, short hospital stay, early mobilization and early bonding.

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OBSTETRIC CASE 10:

POST TERM PREGNANCY – NON-REASSURING FOETAL HEART-

CESAREAN SECTION –LIVE BIRTH:

NAME	V.W	**Para**	0 + 0
AGE	29 YRS	**IPNO.**	1097475
LMP	18/08/05	**EDD**	25/05/06
GBD	42 weeks, 1day		
DOAd	09.06.2006	**DOD**	13/06/06

Presenting complaints:
She complained that she had passed 42 weeks without going in to labour. She reported reduction in foetal movements for two days.

Obstetric and Gynaecoloy history.

She was a primigravida at a gestation of 42 weeks and 1 day. Her last normal menstrual period was on 18th August 2005 and the EDD was on 25th May 2006.

Her menses were regular and the cycle was 28 days with a flow of 4 days. She had not used any contraceptives.

ANTENATAL CARE:

She attended ante natal care at a city council clinic and only came to KNH clinic while term and had two visits. She had done a pregnancy test late September 2005 that was positive. She had not done an obstetrics ultrasound scan. She reported quickening in early January of 2006. She was first seen in the city council clinic on February 18th and fundal height then corresponded to 26 weeks. All these findings correlated well with her gestation dates.

Antenatal profile:

Blood group was O rhesus positive, Hb was 13.8g/dl and HIV was Negative.

She had received 2 doses of tetanus toxoid.

Past medicall history:

She had no chronic illness and had not been admitted before.

Family and social history:

She was married and lived with her husband in Umoja. She was an office messenger. She did not smoke cigarette or drink alcohol. There were no chronic illnesses in the family.

Physical examination:

She was in good general condition, not pale, had no pallor and no pedal oedema.

Vital signs : Blood pressure was120/80mmHg, Pulse rate was 76/min, Respiration rate was 18/min and the temperature was 37^{0}C.

Cardiovascular and Respiration system:

These were essentially normal.

ABDOMINAL EXAM:

The abdomen was uniformly distended and fundal height was term. Foetal lie was longitudinal, presentation was cephalic and the descent was 4/5. The foetal heart rate was irregular even after allowing the patient to lie on left lateral for some 2-3 minutes. There were no palpable contractions.

PELVIC EXAMINATION:

She had normal external genitalia; cervix was central but closed and firm. There was normal vaginal discharge on the examining finger. The pelvis felt clinically adequate.

DIAGNOSIS:

Post term pregnancy with a non-reassuring foetal heart and a poor bishop score.

PLAN OF MANAGEMENT:

Delivery by emergency caesarean section. This was explained to the patient and she agreed and gave a signed informed consent. An intravenous access was established using cannula size 18. Blood was taken for grouping and cross-matching of two units. She was placed in left lateral position and was on oxygen as the other preparations went on. She was premedicated with Atropine 0.6 mg intramuscularly 30 minutes before theater.

Cesarean section:

The patient was taken to theater and a lower uterine segment cesarean section was done under general anaesthesia as described in the introduction part.

The outcome was a live female infant who weighed 3300gm. The infant had a nuchal cord. The liqour had meconium grade II staining. The Apgar score of the baby was: 8:1, 9:5 and 10:10 minutes. The baby was reviewed by the pediatric team and was fit to join the mother to initiate breastfeeding. Notable findings were long meconium stained nails and wrinkled skin and the alertness the baby exhibited.

The uterus was sutured in layers and good homeostasis was achieved. The abdomen was also closed in layers and haemostasis achieved.

Post operatively:

On the first post-operation day, she was started on graduated light diet that started with oral sips and by evening, she had started light solid diet. She was also ambulated early as she continued on antibiotics and analgesics. She and the baby did well and were discharged on the 4th post-op day. She was to book post natal clinic in 6 weeks. The skin sutures were absorbable hence were not for removal.

DISCUSSION:

Post term pregnancy is a pregnancy that lasts longer than 42 weeks (294 days) from the first day of the last menstrual period. Post term pregnancies last longer than the estimated date of delivery that is 40 weeks[1]. The reported frequency of post term pregnancy is approximately 3-12 % [2]. The post mature infant has a wrinkled patchy peeling skin, a long thin body and an *old man worried look.* The patient delivered a baby with long meconium-stained nails and wrinkled skin and appeared alert and these features suggested post maturity[3]. There are three theories explaining the passage of meconium in-utero. The first one proposes that fetuses pass meconium in response to hypoxia and this signals foetal compromise. Second , passage of meconium may represent normal gastrointestinal tract maturation under neural control. Third, could also follow vagfal stimulation from common but transient umbilical cord entrapment and resultant increased peristalsis. The most common cause of post term pregnancy is inaccurate dating and more common in primigravidas or those with irregular menses. The patient C.M was a primigravida and had irregular menses. In the history, there are some questions that can assist in dating the pregnancy. The time of the first pregnancy test if any, the quickening, ultrasound scan report in early pregnancy all aim at established the correctiness of the gestation.

There are various conditions Associated with post term pregnancy[4].

These include

Anencephaly , foetal adrenal hypoplasia, absence of foetal pituitary gland, placental sulfatase deficiency and extra uterine pregnancy.

The post term baby is at risk of

Unexplained foetal demise, Oligohydramnios, Cord compression, Intr-uterine growth restriction, Foetal macrosomia and, Low APGAR score.

The presented patient had non reassuring foetal heart and a nuchal cord and may be could have succumbed if intervention was not instituted.

The diagnosis of post-term gestation was arrived at basing on the pregnancy test that was done in about 6 weeks and the quickening.

The uterine size on her first ANC visit correlated well with admission findings and supported post term.

When post term gestation has been diagnosed, a decision has to be made whether to induce or manage expectantly[3, 4, and 5].

The delivery versus expectant management in pregnancies between 41-42 weeks still is debatable though some studies have shown that routine induction at 41 weeks gestation does not increase the cesarean section rate and may even decrease it without affecting perinatal morbidity or mortality [6, 7]. The patient underwent cesarean section that was not due to failure of induction. Studies have shown that as high as 80% of those that reach 42 weeks, have unfavourable cervix[8]. If decision to induce is made, there are various agents that could be used and these include prostaglandin E_2 gel and pessaries for vaginal application. There are prostaglandin E_1 tablets for oral or vaginal use. Sometimes low dose syntocinon could also be used.

There are also mechanical methods of ripening the cervix and include membrane stripping; folleys catheters placed in the cervix, extra-amniotic saline infusions and laminaria tente. The presented patient was not induced due to the foetal heart state.

Intra-partum management of post term pregnancy include use of electronic foetal monitoring, uterine contraction monitoring, foetal scalp blood pH and mothers state monitoring.

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OBSTETRIC CASE 11

MULTIFETAL GESTATION – CAESEREAN SECTION-LIVE DELIVERY.

NAME:	**J.N**	**Para 1+ 0**
IP.NO:	*1097217*	**LMP 20/09/05**
AGE:	*33 YEARS*	**EDD 27/06/06**
D.O.A:	**3rd June 06**	**DOD 8/06/06**

PRESENTING COMPLAINT

She was admitted after being referred from AMREF Kibera Community Health Centre where she had presented having drained liqour one hour prior. She also had mild low abdominal pains.

HISTORY OF PRESENTING COMPLAINT

She was well till about 2 hours prior to admission when she noticed a gush of fluid per vagina. The fluid drained down her legs up to the floor. At the time of admission she was having intermittent low abdominal pains radiating to the back. She had no bleeding. She was still having normal foetal movements.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

The patient was para 1 plus O gravida 2. Her last menstrual period was on 20-09-06 and the expected date of delivery was on 27-06-06. The gestation by dates was 36 weeks and 6 days. Her menarche was at 16 years. Her cycles were regular occurring every 28 days and lasting 3 to 4 days. Her last delivery was 1994 and was a hospital delivery. The outcome was a male (3.8Kg) who was alive and well.

She had used Depoprovera for family planning as from 1995 to mid 2000. From mid-2000 to early 2005, she used oral contraceptives and stopped to allow return of fertility.

ANTENATAL CLINIC

She had attended a city council clinic since 28 weeks. Her antenatal profile was as follows:

Blood group = O Positive, Hb was 12.2g/dl, VDRL was Negative and HIV was negative. She had received a two tetanus toxoid doses during her ANC. She had an obstetric scan done in early may 2006 that revealed twin gestation. She had been sent for an obstetric scan from the clinic when the fundal height was found to be bigger than suggested by menstrual dates.

PAST MEDICAL AND SURGICAL HISTORY

She had never been admitted before outside pregnancy. She was not on any chronic medication and there was no family history of chronic illness.

FAMILY AND SOCIAL HISTORY

She was a housewife, did not drink alcohol or smoke cigarettes. There was no family history of twins.

The husband was a Jua kali artisan and they lived together in Kibera.

PHYSICAL EXAMINATION

The patient was a young lady in good general condition, afebrile, not pale and not jaundiced. There was no pedal oedema. Her pulse rate was 88 minutes, blood pressure was 130/75 mmHg, and respiratory rate was 18/minutes.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. Fundal height was term, lie was longitudinal, there were multiple palpable parts and presenting part was breech (1st twin). Foetal hearts were heard and regular. There were no contractions palpated.

VAGINAL EXAMINATION

She had normal external genitalia, cervix was soft, moderately effaced, anterior and 3 cm dilated. There was no drainage of liquor observed. Presentation of breech was confirmed through pelvic examination.

DIAGNOSIS

A diagnosis of a para 1+0 with twin gestation in labour was made with the 1st breech.

INVESTIGATIONS DONE

- U/E results: Na^+ 140mmol/l, K^+ 3.6mmol/l and $Urea^+$ 70 um/l

MANAGEMENT

She was informed of the diagnosis and mode of management by emergency caesarian section. She gave a written informed consent, blood was taken for grouping and cross matching and premedication with atropine 0.6mg was given ½ hour before theatre.
In theatre she was placed in semi-lithotomy position and aseptically catheterized. The abdomen was then cleaned and draped. General anesthesia was given, abdomen was opened through a pfanniestiel incision in layers and lower uterine segment caeserian section was performed. Twin gestation was found intraoperatively. The first twin was breech, live female infant weighing 2300grams and scored 7 in 1 and 8 in 5. The second twin was cephalic, live female weighing 2500grams and scored 8 in 1 and 10 in 5.Both twins were reviewed and the first had respiratory distress and was admitted to the new-born unit. The infant was discharged from new-born unit the following day.
There was a single placenta with one chorion and two amniotic sacs. The uterus was cleaned and stitched in layers. Persistent relaxation of the uterus was noted and was controlled by a drip of syntocinon and massaging. The swabs and instruments count was reported correct and the abdomen was closed in layers with.

POST OPERATIVE MANAGEMENT

The mother and babies did well postoperatively. On the fourth postoperative day, they were discharged to be reviewed in 6 weeks in the postnatal clinic.
She did not turn up for the clinic after six weeks.

DISCUSSION

J.N presented above had twin gestation which was diagnosed ante-natally and a caeserian section was done because the first twin presented in breech. The outcomes were favourable as both babies and mother were discharged on the 4th postoperative day.

Twin fetuses commonly result from fertilization of two separate ova, also called dizygotic or fraternal twins. Twins could also occur as a result of a single fertilized ovum that divides into two with each half with potential of developing into a separate individual. These are called monozygotic or identical twins.

Monozygotic twinning occurs in about 2.3 - 4 of 1000 pregnancies in all races. The rate is constant and is not influenced by heredity, age of the mother, race, parity and use of fertility drugs. Slightly more than 30% of twins are monozygotic; nearly 70% are dizygotic. [1]

Dizygotic twins occurs about 1 in 83 conceptions in North America. In Japan twinning is 1.3 births per 1000, while in Nigeria it is 12 per 1000. [1] The incidence of twinning at Kenyatta National Hospital was found to be 1:58.8 by Oyieke [2] and 1:46 by Mutungi [3]. Twinning is associated with increased pregnancy related complication, which includes fetal abnormalities, spontaneous abortions, hyper-emesis, anemia, polyhydroamnios, pregnancy induced hypertension, prematurity, premature rupture of membranes, twin-to-twin transfusion and postpartum haemorrhage.[1]

Early diagnosis of twin pregnancy may alter the perinatal mortality. Twins account disproportionately large share of adverse pregnancy outcomes attributed to preterm delivery. [2, 4]

In the majority of twins, the diagnosis of twins is rarely made and only 25% of the twins are diagnosed before 32 weeks of gestation. [2] Diagnostic ultrasound in early pregnancy will show two gestational sacs as early as the sixth week. It should however be noted that between one-third to two-third of multiple pregnancies end in a single birth. [5, 6] The

incidence of loss of one fetus ranges from 0.5-6.8% after demonstration of multiple pregnancy. [7] Patient J.N had successful twin delivery.
A high index of suspicion may lead to the diagnosis of twin gestation. A maternal family history of twins, older maternal age, high parity and a previous history of twins provide weak clues but knowledge of recent administration of either clomiphene or pituitary gonadotrophin (fertility enhancing drugs) provide strong clues.

Clinical examination with accurate measurement of fundal height is essential. 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 fetuses becomes large than one with a single fetus, with a small head in proportion to uterine size. [5] The presented patient had a discrepancy between uterine size findings and menstrual data calculations.
There may be increased fetal activity and multiple fetal parts may be palpated. Maternal weight gain may be greater than normal. [1] In Oyieke's study [2] only 54% of the patients with multiple pregnancy were diagnosed before labour, 38% were diagnosed after delivery of the first twin.

Sometimes it is possible to identify two fetal hearts if their rates are clearly distinct from each other as well as from the mother. Other diagnostic aids in the diagnosis of twins include x-rays, chorionic gonadotrophins in plasma and urine, and alpha-fetoprotein.
The patient here was diagnosed antenatally and confirmed by an ultrasound scan.
Once diagnosis of twins is made, management is geared towards reducing complications associated with twin pregnancy. The reason for cesarean section when the 1st twin is breech is because the breech may not dilate fully soft tissues. There is a risk of the after-coming head or even the 2nd twin. In this patient the primary reason for caeserian section was breech presentation of the first twin.

Enhancing antenatal care assists in improving outcome in multifetal pregnany. The most commonly used techniques are iron supplementation, vitamin and folic acid administration, a high protein diet, more weight gain than usual, less physical exercise

and more bed rest. Early and prompt therapy for any complications (e.g. vaginal infections and preeclampsia) is instituted. Premature labour may be suppressed by use of tocolytics.

During labour, the mother is monitored using a partogram. Blood for grouping and cross matching is taken and intravenous line secured. This is in anticipation for postpartum haemorrhage due to the big surface area covered by the placenta.
The mode of delivery depends on presentation of the twins and other obstetric factors. In 42% , both twins are cephalic, in 27% the first is cephalic and the second is breech. In 18% , the first is cephalic and the second is transverse, and in 5% both twins are breech. The other presentations account for 8%.
Caeserian section delivery is commonly undertaken if the presentation of the first twin is other than cephalic. In situation where the first twin is cephalic and second is breech it is usual to opt for vaginal delivery in most centers. [5]
In vaginal delivery, the second twin should be delivered as soon as the first twin has come out. If there are no contractions within 10 minutes, syntocinon should be started. The second twin is associated with a higher mortality, as there is an added risk of asphyxia and operative deliveries due to malpresentation or cord prolapse. Internal podalic version with breech extraction is occasionally used to deliver the second twin. [1]

Complications in the mother include pregnancy-induced hypertension, caeserian delivery and antepartum hemorrhage. Preterm labour, uterine dysfunction, abnormal presentation, prolapse of the umbilical cord, premature separation of placenta and immediate postpartum haemorrhage are common during labour and delivery.
The patient JN presented here had twins and first was breech.
Complications such as various grades of conjoined twins, acardiac twins and twin-twin transfusion syndrome may occur in monozygotic twins with increasing morbidity and mortality. Occasionally one fetus may die in advanced pregnancy leading to increased likelihood of death of the second twin. [5]

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OBSTETRIC CASE 12

HUMAN IMMUNODEFFICIENCY VIRUS INFECTION IN PREGNANCY-CAESERIAN SECTION DELIVERY

NAME	:	C.W
IP NO.	:	0992478
AGE	:	34 YEARS
D.O.A	:	06/06/06
D.O.D	:	14/06/06

PRESENTING ILLNESS

She was para 1 plus O admitted through the antenatal clinic for elective caeserian section.

HISTORY OF PRESENTING ILLNESS

She had attended antennal clinic from the 26th week of her pregnancy at KNH clinic. During routine antenatal profile tests, she was found to be HIV Positive. She was counseled on diet, personal hygiene, and methods of prevention of mother to child transmission (PMCT). She was counseled further on delivery practices known to reduce mother to child transmission of HIV. She was started on AZT at 34 weeks and was counseled on elective caesarian section at 37 competed weeks.

OBSTETRIC AND GYNAECOLOGIC HISTORY

She was a para 1+0. Her last menstrual period was 12/9/05 and her expected date of delivery was 19/06/05. Gestation by dates was 38 weeks. Her menarche was at 14 years. Her cycles were regular occurring every 30 days and menses lasted for 4 days. She had never used any contraceptives. She had attended ANC at KNH from 26 weeks. Her 1st delivery was in 1994 and outcome was a fresh still birth. She had abruptio placenta and was transfused.

ANC INVESTIGATION AND RESULTS

Hb : 12.5g% Blood group: O Rhesus Positive. VDRL was Negative. U/E: K^+ 3.77 mmol/l Na^+ 136 mmol/l Urea- 2.6 umol/l ELISA for HIV: POSITIVE.

The husband was HIV negative. She had obstetrics scan done at 30 weeks and there were no abnormal findings.

PAST MEDICAL HISTORY

She had never been admitted before outside pregnancy. She had been transfused during her last delivery twelve years earlier.

FAMILY AND SOCIAL HISTORY

She was married and lived with her husband at Huruma. She did not drink alcohol nor smoke cigarettes. She had no family history of chronic illness.

EXAMINATION

She was in good general condition, not pale, not jaundiced, was afebrile, had no edema and had no lymphadenopathy. Her temperature was $36.5^{0}C$ and her blood pressure was 110/80mmHg. Her pulse was 80/minute.

CARDIOVASCULAR, CENTRAL NERVOUS AND PRESPIRATORY SYSTEMS

These were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. The fundal height was term, lie was longitudinal, presentation was cephalic and head was 3/5 up. The fetal heart was heard and was regular at 144 beats per minute.

PLAN OF MANAGEMENT

She was informed and counseled on the need of operation. She gave a written consent. Blood was taken for grouping and cross matching. In the morning of the operation she was premedicated with atropine 0.6mg ½ hour before theatre and she took her morning dose of 300mg of AZT.

She was wheeled to theatre and a lower segment caesarian section done after a Pfanniestiel skin incision. The outcome was a live female infant who weighed 2400grams and had an Apgar score of 8 in 1, 9 in 5 and 10 in 10.The uterus was stitched in three layers with good haemostasis. The skin was stitched with subcutaneous vicryl 3/0. The

baby was reviewed by a paediatric resident and nevirapine drops was prescribed and given to the baby. The baby was started on AZT syrup and was to continue with it for six weeks.

POST OPERATIVELY

She did well and was started on oral sips on the first postoperative day. On the second day she was started on light diet and oral medications. She was counseled on baby feeding techniques as she lay on her bed due to the incision wound. She had opted to breast feed exclusively for 4 months. She did well post operatively. The wound was exposed on the third day and it was found to be clean and dry. She was discharged on the 4^{th} postoperative day on amoxicillin 500 mg every eight hours and ibuprofen 400mg every eight hours. She booked the high risk clinic and was reviewed in 6 weeks.

Follow-up.

She was reviewed in the clinic and the baby was still on exclusive breastfeeding. The mother was also well and had questions on whether she would start the ARVs. She was told of the investigations theat were needed before such a decision was arrived at. She was reffered to the comprehensive care clinic where those investigations would be done before start of the HAART.

DISCUSSION

C.W was a 34-year-old para 1+0 with human immunodeficiency virus (HIV) in pregnancy diagnosed during the usual antenatal testing. She was started on AZT from 34 weeks gestation and underwent an elective caesarian section at 38 weeks to minimize mother to child transmission (MTCT) of HIV.

Human immunodeficiency virus (HIV) is an RNA retro virus. It enters the body as a free virus or as virus-infected cells.[1] There are two types of HIV virus identified and the most common is HIV-1 and infects millions of people worldwide and is also more virulent. HIV 2 is confined to some parts of West Africa and runs an indolent course. Both HIV 1 and HIV 2 progress to Acquired immunodeficiency Deficiency Syndrome (AIDS). The HIV predominantly infects cells with CD4 antigen particularly T- helper lymphocytes, macrophages, cells of the central nervous system and the placenta.[1]

The global HIV epidemic in women has been seen to expand fast and in some countries, HIV is one of the most common complications. Longer survival after infection contributes to more women becoming pregnant[2],

In Kenya the overall prevalence of HIV is about 7%.[3] In Kenya and the rest of sub-Saharan Africa, an obstetrician is very likely to care for an HIV positive pregnant woman[4].

More than 80% of infection in women occur in their reproductive age and most acquire it heterosexually[5]. The presented patient was married and had history of blood transfusion. Prevalence in Africa among the pregnant women has been hard to compute because many mothers deliver outside health facilities. Some people have estimated the prevalence to vary from 20-40%[5]. In Kenya, prevalence ranged from 4-10% in low seroprevalence sites to 20-25 in high sero prevalence sites. The Kenya Demographic Health Survey (KDHS) of 2003 reported seroprevalence in pregnancy of 9.4%

Perinatal transmission of HIV accounts for more than 90% of all paediatric acquired immunodeficiency syndrome cases[6]. The periods of perinatal transmission are, in utero (10-20%), during labour and delivery (35-50%) and through breastfeeding(40-50%). Overall, the risk of transmission in breast feeding population is 25-40%[6]. Infants infected with HIV at birth are more susceptible to opportunistic infections and rapid progression to AIDS and a 90% chance of dying by age 10 years[7].

In Kenya, it is estimated that a hundred thousand infants get infected with HIV annually due to mother to child transmission (MTCT). The factors that affect the transmission to child include;

Maternal health and HIV status, obstetric factors and infant factors. In aiming to reduce the MTCT, HIV positive women have to be identified. This is achieved through counseling and testing even before pregnancy. The goals of screening are multiple and include: assessing status, counseling to re-inforce HIV risk reduction behaviour, making an early diagnosis and thus starting treatment early. The patient also makes informed reproductive health decisions, obtaining psychological and social support and reducing perinatal transmission.

Various tests are available for the diagnosis of HIV. These can be divided into;

Antibody detection,

Antigen detection,

Viral nucleic acid testing. The antibody testing is the most commonly used. Enzyme linked immunosorbent assay (ELISA) test that uses recombinant antigens are highly specific and sensitive.

Two tests are usually done in confirmation of the HIV status. One for screening and if positive, another is done for confirmation.

The effects of pregnancy on HIV progression is not clear cut but some researchers have argued that clinical illness is more likely to develop presumably because of suppressed cell mediated immunity[4, 8].

The effects of HIV on pregnancy is also not very clear but many studies in Africa have reported increased incidences of preterm labour, urinary tract infections, herpes zoster, low birth weight infants, chorioamnitis and puerperal infections in HIV positive pregnant women[9, 10].

MTCT of HIV infection is dependent on a number of maternal risk factors and intrapartum events.

Maternal factors that favour MTCT include low $CD4^+$ counts, high viral loads, advanced AIDS, preterm delivery, placental membrane inflammation, and HIV acquired during pregnancy.

Intra-partum events that favour MTCT include, mode of delivery, vaginal delivery has a higher risk of transmission than elective cesarean section, rupture of membranes for more than 4 hours, routine episiotomies, intrapartum hemorrhage, instrumental deliveries and twin deliveries with first twin having a higher risk.
Combination of intervention factors have been employed to reduce MTCT.
The efficacy of anti-retroviral (ARV) drug use to prevent MTCT has been demonstrated in various randomized control trials as well as in observational studies.

In 1994, the paediatric AIDS clinical trials group protocol (PACTG) 076 demonstrated the efficacy of a three part regimen of zidovudine prophylaxis in reducing perinatal transmission of HIV From 25.5% to 8.3%. [11]
In the PACTG 076 study the use of zidovudine for both mother and baby and use of replacement feeds and avoidance of breastfeeding showed an efficacy of 68%. [6]
In the Thailand study where zidovudine was administered at 300mg orally bd from 36 weeks gestation and the 300mg 3 hourly intrapartum and no treatment for the infant and no breastfeeding showed a 50% efficacy. [12]
A study at Mulago hospital where nevirapine 200mg orally was given at the onset of labour and 2mg/kg to babies within 72 hours of birth or zidovudine 600mg orally to mother at onset of labour and 300mg every 3 hours until delivery, and 4mg /kg orally bd to babies for 7 days showed estimated risk of HIV-1 transmission at birth in zidovudine was 10.4%, in nevirapine was 8.2%. In this study the babies were breastfed.
Studies have shown that treatment of HIV infected women and their infants with zidovudine (AZT) reduce the chances of transmission. A study using AZT from 34 weeks in Thailand showed a reduction by 50% and this is what is used in Kenyatta National Hospital. The patient presented used AZT, opted for cesarean section and exclusive breastfeeding. Onge`ch and group found that PCR was positive in 11% of those children whose mothers had used AZT/NVP. This sharply differs from those that had used Nevirapine alone whose PCR was positive in 29%. They also compared breast fed and never breast fed. In those that were never breast fed, the PCR was positive in 20% while in those ever breast fed, it was 46%. Where an elective cesarean section had been done, the PCR was positive in 18% while vaginal delivery gave23 %.

Upto early 2005, single dose Nevirapine has effectively been the method of choice for PMCT mainly for reasons of deliverability. Nevirapine has the drawback of failure to prevent transmission and drug resistance development in a significant proportion of women. Nevirapine will still remain a choice method because most of the mothers present late and some actually during labour. However, the safety and effectiveness of various agents in pregnancy is an on-going research field and updates are continuously being given[11].

There has been the introduction of PMTCT plus—this entails taking care of the mother in the postpartum period.

The best time to screen a potential mother is and should be preconception period. Alternatively if this was not possible or was over looked, then testing should be done in early pregnancy.

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OBSTETRIC CASE 13

CARDIAC DISEASE: CAESEREAN SECTION DONE: LIVE BABY.

NAME:	E.M	AGE:	24 YEARS.
IPNO.	1092333.	PARITY	PRIMIGRAVIDA
DOA	14/05/06	DOD	2/6/06
LMP	6/8/05	EDD	13/05/06
GBD	40^{+1}Weeks.		

Presenting complaints.

Cough and difficult in breathing for one month.

Swelling of the legs for two weeks

Easy fatiguability for two weeks.

Lower abdominal pains for one day.

History of presenting complaints.

The patient was referred form Kitui district hospital as a case of suspected cardiac disease in pregnancy. She was relatively well till one month prior to admission when she started coughing. Initially the cough was mild and dry but became productive of whitish frothy sputum. She had no haemoptysis or night sweats. Two weeks prior to admission, her legs started swelling progressively. For same duration of two weeks, she started becoming easily tired. She started by getting tired on walking short distances but progressed fast to getting tired on household chores. She found she had to rest in between the activities which was not usual for her. She developed palpitations one week prior to admission. By the time she sought medical attention in Kitui; she was comfortable at rest but could easily become dyspnoeic on mild exertion. Kitui hospital referred her to KNH for delivery and further management. She had been started on digoxin, a dose of 0.25mg evry day for which she had taken only once.

She reported no history of facial puffiness or changes in micturation habits.

The foetal movements had been normal all through.

She had developed some lower abdominal pains on her way to hospital and the pains were intermittent and radiating to the back.

Obstetric/Gynaecological history:

She was a pirimigravida who had attained menarche at 14 years. She had regular menses with a 30 day cycle and a flow of 5 days. She had no dysmenorrheal or menorrhagia. She had no history of contraceptive use.

Antenatal care:

She was a primigravida at 40 weeks of gestation by dates.

She attended her antenatal clinic in a clinic in Kitui district as from about 28 weeks and she had made five visits. The antenatal profile recorded on her card were HIV and VDRL which were both negative.

She had received two tetanus toxoid injections. Nothing remarkable had been noted prior to onset of above symptoms.

Past medical history:

She had not been hospitalised before and she had no chronic illness and no history of contact with a person with tuberculosis. She used to be treated for recurrent coughs and throat infections in childhood but which cleared by the adulthood. She gave no history of allergy to food or drugs.

Family and Social history.

She was married and lived with her husband in Kitui. They were peasant farmers, did not drink alcohol or smoke cigarettes. There was no known chronic disease in the family.

PHYSICAL EXAMINATION.

General condition; she was sick looking with distended neck veins and dyspnoeic, afebrile, not pale, no jaundice but had pitting pedal oedema.

Vital Signs.

Blood pressure was 120/80 mmHg, pulse rate of 110/min, respiratory rate of 22/min and Temparature of 36.7^{0}C.

Cardiovascular System.

The pulse was regular and of normal volume and non-collapsing. There was no radio-femoral delay. The jugular venous pressure was elevated as exemplified by the distended neck veins. The praecordium was not obviously hyperactive. The apex beat was in the 6th intercostal space in the anterior axillary line. There was a loud pansystolic murmur best heard in the apex and radiating to the back.

Respiratory System.

The respiration rate was 22/min. there were crepitations heard more in the lower zones bilaterally.

Abdominal examination:

The fundal height was term and this corresponded to the dates. The foetal lie was longitudinal and presentation was cephalic. The descent was four fifths. There were palpable contractions, each lasting about 15-20 seconds. Two were palpated in a period of ten minutes. There was hepatomegally of six centimeters below the right costal margin but the spleen was not palpable. The foetal heart rate was 130/minute and regular.

Pelvic examination:

She had normal external genitalia, the cervix was 3-4 cm dilated, fully effaced and well applied to the presenting part. The membranes were slightly bulging but cord presentation detected. The pelvis felt adequate clinically. Artificial rupture of membranes was done and liquor had grade two meconium staining.

Impression

An impression of patient with cardiac disease grade IV in Labour with foetal distress in early labor was made.

Plan:

The management was delivery by emergency cesarean section.

The patient was informed of the finding s and the decision to deliver her through cesarean section. She gave a written informed consent and the anaesthetist was informed and reviewed her and also agreed to the management. Blood samples were taken for grouping and cross matching. Two units were cross matched and accompanied the patient to theater.

Other investigations:

The haematocrit was 35% and the

Urea and Electrolytes were within normal.

Na^+ was 140mmoles /l

K^+ was 3.8mmol/l

BUN was 3.3mmol/l

Creatinine was 6.2 micromoles/l.

Before theater, she was kept in a propped up position and was on oxygen and given analgesic drug and prophylaxis antibiotics intravenously. The patient was then taken to theater. The abdominal cleaning and draping was done then general anaesthesia induced. The skin incision was midline infra-umbilical and a lower uterine segment cesarean section was done. The outcome was live male infant weighing 2600 grammes and Apgar score of 5:1, 8:5 and 9:10 minutes. The placenta was delivered by controlled cord traction and it was grossly normal. The blood loss was about 800mls. The recovery immediate post operation was uneventful. Post operatively, she was put on intravenous Cefuroxime 750mg every 12 hours, digoxin, frusemide and mefenamic acid. She was ambulated early and she was reviewed by the cardiologist who orderd an ECHOcardiogram. The ECHO revealed valvular lesions namely Mitral regurgitation and Tricuspid regurgitation. There was a small pericardial effusion reported. Post operatively, she did well and was discharged on after 23 days through cardiac clinic. She was discharged on digoxin and mefenamic acid.

Before discharge, her and the husband were counseled on the implication of the cardiac disease and future pregnancies. They were also counseled on family planning methods where by oestrogen based contraceptives were discouraged. She was to get further counseling in her post natal clinic.

DISCUSSION

E.M was admitted with cardiac disease grave IV in labour as a referral from Kitui. She had meconium stained liquor grade two and cesarean section done and delivered a live male infant. She had uneventful post operation period.

Cardiac disease in pregnancy represents a condition in which pregnancy is complicated by impaired heart function. Cardiac disease may be preexisting or induced by the pregnancy condition and is associated with increased maternal and foetal morbidity. In the USA, cardiac disease is the third leading cause of death in 22-44 year old women and complicates about 1% of pregnancies[1]. The incidence of cardiac disease occurs in 0.4-4% of pregnancies worldwide[2]. Cardiovascular disease is the most important non-obstetric cause of disability and death in pregnant women, occurring in 0.4 – 4% of pregnancies. The reported maternal mortality rate ranges from 0.4% in class II and I to 6.8% or higher among patients with class III and IV severity.[2]

At Kenyatta National Hospital, cardiac disease in pregnancy was reported to be 0.5% in 1969[3] and 0.6% in 1982[4], while in developed countries, the overall incidence is less than 1%. Although rheumatic heart disease has declined over the years[5], it is still present in many parts of the world particularly in developing countries. [6]In developed countries, rheumatic heart disease is now less common and congenital heart disease is seen more commonly.[7] In Denmark, congenital heart lesions constitute at least half of all cases of heart disease encountered during pregnancy while rheumatic heart disease has almost disappeared[8].

The patient presented had not been diagnosed with rheumatic valvular heart disease though gave a history of recurrent upper airway infections in childhood.

In his study, Ngotho found rheumatic heart disease in pregnancy responsible for 86.4% of cardiac disease in pregnancy. Other causes of heart disease in pregnancy include hypertension, thyroid, coronary, syphilitic, cardiomyopathy, pericarditis and other congenital heart diseases.[5, 7] The majority of patients with cardiac disease in pregnancy were found to be young with the majority age group of 20-24 years.[9] The patient presented, E.M, was 24 years, which is in the age bracket of patients presenting with rheumatic heart disease.

By far the most common lesion in rheumatic heart disease is mitral stenosis either in isolation or as the predominant lesion.[9]

Cardiovascular changes in normal pregnancy tend to worsen or unmask cardiac disease. During pregnancy the cardiac output is increased by as much as 30 to 50 percent. It has been shown that almost half of the total increase has occurred by 8 weeks and it is maximized in mid pregnancy.[7] Total blood volume also increases by 50% above non-pregnant levels by 32 weeks[10].

During labour, cardiac output increases by 34% in 1st stage, with further increase in 2nd stage due to increase in stroke volume and heart rate.[11] There is also a steady rise in blood pressure.

Signs and symptoms associated with heart disease are often present in normal pregnancy. These include fatigue, dyspnea, orthopnoea, oedema, and palpitations.

Clinical indicators of heart disease include symptoms of progressive dyspnea, or aorthopnoea, nocturnal cough, haemoptysis, syncope and chest pain.

Clinical findings may include: cyanosis, finger clubbing, persistent neck vein distension, systolic murmur or arrhythmia, persistent split 2nd heart sound and criteria for pulmonary hypertension.[10]

The patient presented had developed progressively worsening symptoms towards the end of her pregnancy. This is because of the increasing blood volume and the extra workload as pregnancy progresses.

Cardiac disease can be graded according to the New York Heart association classification (NYHA) first published in 1928 but has been revised on many occasions. This is based on past and present disability and is not influenced by physical signs [2, 10].

Grade I	:	Uncompromised patients have signs of heart disease but no symptoms limiting ordinary activity.
Grade II	:	Slightly compromised patient with cardiac disease and slight limitation to ordinary physical activity but no symptoms at rest. They have dyspnoea on strenuous activity.

Grade III : Markedly compromised patient with cardiac disease and marked limitation of physical activity. They have dyspnoea on mild physical activity.

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

The patient E.M was graded as grade IV cardiac disease as she was unable to do ordinary activity and was dyspnoeic at rest.

Patients can also be classified according to the risk of mortality associated with pregnancy into 3 classes [12].

(1) Low risk - Mortality less than 1%
This includes atrial septal defects, ventricular septal defects, patent ductus arteriosus, corrected tetralogy of Fallot, prosthetic valve, mild mitral valve stenosis and pulmonary/tricuspid disease. (NYHA)

(2) Moderate risk Mortality 5-15%

This has further been divided into 2A and 2B.

2A Includes those patients with symptomatic mitral stenosis(NYHA classes III and IV), aortic stenosis, coarctation of the Aorta without valvular involvement, previous myocardial infarction and uncorrected tetrallogy of Fallot.

2B These include mitral stenosis with arterial fibrillation and artificial valve.

(3) High risk Mortality 25 – 50%
Includes severe aortic stenosis, pulmonary hypertension with reversed central shunt and Marfan syndrome with aortic involvement.

For patient E.M, ECHO had shown multivalvular involvement and had mitral valve regurgitation and tricuspid valve regurgitation. She also had a diastolic murmur, a sign of mitral regurgitation.

Successful management of cardiac disease in pregnancy requires a close cooperation between the cardiologist and obstetrician. The prognosis is usually dependent on functional cardiac capacity, other complications that further increase cardiac load, and quality of medical care provided.

Every woman with a cardiac disease will benefit from pre- conception counseling. Women who conceive and are known to have a high risk rating should be advised on 1st trimester termination if possible, but not infrequently high desire for children may lead to dismissal of the advice. In that situation surgical correction can be offered.

During antenatal follow up the full antenatal profile plus electrocardiogram, Echocardiogram and Ultrasound should be done. Careful monitoring to avoid heart failure should be done with special emphasis on risk factors, which include infections especially of urinary tract, hypertension, anaemia and multiple pregnancies. The presented patient had been attended in a peripheral clinic that lacked the capacity to diagnose and deal with heart disease.

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 pregnancy. E. M was admitted while in labour after being referred in grade 1V.

In the management of labour, spontaneous labour and vaginal delivery is preferred. Most patients have rapid uncomplicated labour especially if taking digoxin [7]. Caeserian section is limited to obstetric indications. The patient is propped up and vital signs monitored half hourly. Foetal distress developed when patient was in laour.
An analgesic is important as it reduces anxiety and subsequent heightened cardiac activity. Epidural analgesia acts as a good analgesic and also helps to reduce cardiac output by reducing preload and causing peripheral vasodilatation. Narcotic analgesics (morphine, pethidine) are also used. Oxygen is also given to ensure optimal saturation of the blood and also to prevent decompensation.

Intravenous fluids should be carefully monitored to avoid fluid overload and pulmonary oedema associated with injudicious fluid loading.
The patient E.M was given tramadol for analgesia. She was also given oxygen by mask. Second stage should also be shortened by elective vacuum assisted delivery to avoid increase in preload. The patient had cesarean section.
Close monitoring of 3rd stage will prevent haemodynamic changes associated with post partum haemorrhage. Oxytocin is preferable to ergometrine as the later causes hypertension and peripheral vasospasms associated with sudden intravascular overload [10].

Use of antibiotics, as prophylaxis to prevent endocarditis is necessary as this complication often occurs without warning. Bacteraemia following normal delivery is rare but many obstetricians prefer to give antibiotics. E.M was put on antibiotics before and after delivery.

Cardiac disease patients are observed for 24 to 48 hours in acute room. E.M was transferred to the postnatal wards after 48 hours. Postpartum period is also critical and patient is monitored for infective endocarditis, congestive cardiac failure, and thrombo-embolic disease. Patient E.M was given antibiotics and early mobilization was emphasized.
Of the 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, very low birth weight and higher incidence of congenital disease[10].
Contraception postpartum is important and surgical sterilization is the preferred method.[13] Other methods that can be used are oral contraceptives and barrier methods. Use of oral combined pills is avoided in those with mitral valve disease and those with mechanical valves where risk of thromboembolism is high. Most of these patients require anti coagulation with warfarin.[13]
Patient E.M needed to choose between barrier methods and permanent contraception. Intrauterine devices are not frequently used because of the associated high frequency of infection.

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OBSTETRIC CASE 14

RHESUS NEGATIVE: PRIMIGRAVIDA: LIVE BABY.

PATIENTS NAME: A.W.N	IpNo	1084477.	Age:	25 years
Para 0+0	L.M.P	30/06/2005.	E.D.D	7/04/2006
DOA....03/04/2006.	GBD	39 weeks	DOD.	07/04/2006.

PRESENTING COMPLAINTS:

Patient was admitted from home for elective cesarean section.

She had been followed up in our antenatal clinic and was rhesus negative and presentation had remained breech. There was no drainage of liqour, per vaginal bleeding or any discharge. She had no contractions.

ANTENATAL CARE:

She attended Kenyatta National Hospital ante natal clinic and made four visists.

She had started ANC in a peripheral clinic but transferred following advise from the clinicians in the peripheral clinic.

Ante-natal profile

Blood group	B Rhesus Negative.
Haemoglobin level	13.0 g/dl
H.I.V and VDRL	Negative.
Urinalysis	Nothing significant.

Booking blood pressure-------110/60 mmHg and it remained within normal throughout the pregnancy.

She received two doses of tetanus toxoid.

The blood group was repeated in KNH and confirmed the rhesus negative aspect. She did not know the blood group of her partner. She was counseled on the implication of the Rhesus factor in view of future pregnancies.

She had done a scan at 33 weeks which showed a single viable foetus. The placenta was fundal posterior and the amniotic fluid was adequate.

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

Obstetrics and Gynaecology History.

Para 0+0. LMP of 30/06/2005. Menarche at 15 years, cycle of 28 days and regular menses. She had not used any contraceptives.

Past medical history:

Nothing contributory.

Family Social History:

She was single but in a stable relationship.

She had freshly graduated from the University of Nairobi.

She did not smoke cigarette or drink alcohol.

There was no family history of chronic illnesses.

PHYSICAL EXAMINATION.

General condition was good.

She was afebrile, not pale, not jaundice and had no oedema.

Vital signs.

Blood pressure --	110/70 mmHg.
Pulse rate	78 b/m.
Res/Rate--	18/minute.
Temparature --	36.4^0 C.

ABDOMINAL EXAMINATION.

The abdomen was uniformly distended and moving with respiration. She had no areas of tenderness.

Fundal height was term, lie was longitudinal and presentation was breech. The foetal heart was heard and regular at 152/minute. Liquor felt adequate. There were no palpable contractions.

The estimated weight was 3.5 Kg.

VAGINAL EXAMINATION:

The external genitalia was normal the cervix was closed, long (2Centimeters), soft and posterior. The pelvis felt adequate.

DIAGNOSIS.

Breech at term in a Rhesus negative primigravida.

MANAGEMENT.

She was prepared for theater as had been discussed with her in the clinic.

She gave a written informed consent.

Pre-op investigations (Hb and U/E) were within normal. She had one unit of blood group B Rhesus negative cross-matched and kept for her.

She was not to take anything orally after midnight preceding the theater day.

The following day, she had an intravenous line fixed and she had shaving of the pubis done in the morning. Half an hour before theater, she was given Atropine injection of 0.6 Mg intramuscularly. She was then wheeled to theater.

THEATER:

She was prepared and given spinal anaesthesia then placed in semi-lithotomy position and vulval toilet was done and then catheterised aseptically and 30 mls of clear urine drained.

A Pfanniestiel was incision made to open the abdomen. A lower uterine segment cesarean section was done. A live female infant with birth weight of 3600 gm was delivered in breech. The Apgar score was 9 at 1 minute and 10 at 5 minutes. The mother was shown the baby and then the infant was reviewed by a paediatrician who was on standby and recommended to be taken to NBU for investigation given that the mother was blood group O rhesus Negative. The placenta was delivered by controlled cord traction and was grossly normal. Cord blood was taken for testing for bilirubin levels, haemoblobin levels, direct coombs test and blood group. Uterus was sutured in layers and haemostasis achieved. Abdomen was closed in layers after count of swabs and instruments was reported correct.

The skin was sutured with an absorbable suture-vicryl 2/0. The abdomen was dressed and patient taken to the recovery unit. The estimated blood loss was 400 mls.

Post operation observations were within normal and patient then taken to the ward. Post operation treatment consisted of analgesics, antibiotics, intravenous fluids and physiotherapy. Analgesics were pethidine that was to be given 100mg intramuscularly 6 hourly and Diclofenac whose dosage was 75 mg intramuscularly 8hourly. Antibiotics were Gentamycin-80mg 8hourly and Crystalline penicillin 2megaunits 6 hourly. She

continued on intravenous fluids and she was started on oral sips when reviewed the following morning. She was to graduate to light diet by afternoon on the 1st post-operation day. On the first post-op day, the blood results for the baby were availed. The blood group for the baby was AB Rhesus+ and thus the mother was given 300 microgrammes of anti-D intramuscularly. The haemoglobin level was 18.5g/dl. Serum blirubin-total 2.0mmol/l and direct—0 mmol/l. direct coombs test was negative.The mother was reunited with her baby and breastfeeding initiated. The post op period was uneventful and patient was discharged on the 3rd day after the operation. She was to be seen in the post natal clinic in 4 weeks. She was reviewed and she had no complaints. The wound had healed well and the baby was doing well. She had made a decision to exclusively breast feed for 6 months and had not made the decision on which method she was to use for contraception. She was referred to the family welfare clinic for further discussion on contraception.

DISCUSSION:

The patient presented was a Para 0+0, Rhesus negative woman who delivered a Rhesus positive baby. She was given anti-D immunoglobulin within first 48 hours of delivery.

The discovery of the rhesus (Rh) factor was done by Landsteiner and Weiner in 1940[1]. The discovery was able to explain most of the haemolytic diseases of the fetus and the newborn.

Effective maternal prophylaxis was made in 1961 and 1963[1].

The Rh antigens are located on human erythrocytec cell surface and can be demonstrated as early as six weeks of gestation[2]. The Rh antigens are grouped in 3 pairs, Dd, Cc and Ee. The major antigen in this group is Rho (D) or Rh factor.

There is considerable variation of rhesus antigenicity in various populations. Basque populations have the highest incidence of Rh-negativity (30-50%). Caucasian populations in general have a higher incidence (15-16%, Finland 10-12%). Blacks in the USA have a rate of 8%; African blacks 4%; indoeurasians 2%, and North American Indians 1%. The incidence among mongoloid races is nil. [2]

The incidence in Nairobi of Rh-negativity was reported to be 5% of all antenatal clinic-attending mothers in 1983.[4] In 1999, an incidence of 3% of antenatal clients at KNH among the black population was found. [5]

The patient presented here was found to be Rhesus negative during antenatal visit and was of the black race.

Isoimmunization may occur following transfusion with incompatible blood or when there is feto-maternal haemorrhage between a mother and an incompatible fetus. Fetomaternal haemorrhage may occur during pregnancy or at delivery.

Predisposing factors to fetomaternal harmorrhage include: spontaneous or induced abortion, amniocentesis, abdominal trauma, placenta praevia, abruptio placenta, fetal death, multiple pregnancy, manual removal of placental and caeserian section.[2]

It is also known that 30% of Rh-negative persons are none responders and ABO incompatibility also confers a protective effect.[2]

The patient A.W.N. was a primigravida and had indirect Coombs test being negative

Initial response of a Rh-negative individual to Rh-positive fetus is the formation of IgM antibodies. A Rhesus negative mother carrying a rhesus positive foetuas may have foetal cells crossing into maternal circulation in different amounts to cause maternal antibodies against Rhesus factor. The initial antibodies produced are of the IgM antibodies. These antibodies do not cross the placenta because of their size. Further provocation produces IgG antibodies. Within 6 weeks to 6 months, IgG antibodies become detectable. In contrast to IgM, IgG is capable of crossing the placenta and destroying fetal Rh-positive cells. [2, 4]

The initial isommunizaiton reaction is minimal but becomes more severe in subsequent pregnancies.[6] Haemolytic disease of the newborn occurs when the maternal antibodies destroy the Rh-positive fetal red blood cells. Fetal anaemia results, stimulating extra-medullary erythropoietic sites to produce high levels of nucleated red cell elements. Immature erythrocytes are present in the fetal blood owing to poor maturation control. Haemolysis produces heme, which is converted to bilirubin; both of these substances are neurotoxic. If haemolysis is severe and exceeds production, erythroblastosis fetalis occurs due to anemia, extramedullary erythropoiesis, ascites, heart failure, oedema and pericardial effusion. [2,6]

The damage that could have been caused in uterus by heme and bilirubin is minimized by metabolism by the placenta.

Following delivery severe anemia and hyperbilirubinaemia occurs leading to more red cell damage and kernicterus.[2]

Routine antenatal screening of mothers for their ABO and Rhesus blood group should be done on the first antenatal visit. If she is Rh- negative, her blood should be screened for antibodies. If antibodies are not detected, the test should be repeated at 34 weeks. The most common way for detection of anti-D is indirect Coombs test, which is performed in order to determine which patients are candidates for either amniocentesis and measurements of amniotic bilirubin levels or percutaneous umbilical cord sampling.[1]

The most important part of the management of pregnancies at risk of rhesus immunization is serial monitoring of maternal serum antibody level throughout pregnancy. Assessment of a fetus identified to be at risk includes amniotic bilirubin concentration, abnormal fetal heart patterns, real time ultrasonography and pulsed Doppler ultrasound. Measurements of fetal haemotocrit through fetoscope techniques or ultrasound guidance is the only direct method of determining fetal anemia.

Prophylaxis against Rhesus immunization was introduced in 1967 and has reduced perinatal mortality associated with Rhesus disease. It is now common practice to give anti D immunoglobulin at times of recognized risk of feto maternal transfusion. In our unit we routinely give 300mcg of anti D within 72 hours of delivery. It is also recommended that patients who are ICT negative should get anti D at 28 and at 34 weeks. There is 1-6 % failure of prophylactic ant-D when given after delivery as compared with 0.1% when given antenatally[7].

For the sensitized mothers, the indirect coombs test is done and reported in titres and if they remain at level of 1:16, pregnancy is allowed to proceed to term. For titres above 1:16, a further assessment with amniocentesis or foetal blood sampling. Foetal blood sampling is not routinely done in our hospital. Amniotic fluid is analysed by spectrophotometry at 450nm and plotted on semilogarithmic scale versus gestation(Lileys Chart)

The Liley`s chart has 3 zones. Zone 1 implies unaffected or mildly affected foetus. The amniocentesis is repeated every 2-3 weeks and delivery is near term after lung maturity has been confirmed. Moderately affected fetuses fall into zone 2 and amniocentesis is done every 1-2 weeks. Delivery is on attainment of lung maturity. Zone 3 implies severely affected foetus and delivery should be immediate or if the foetus is preterm, blood transfusion should be done. Intra- uterine foetal transfusion is performed using blood `o` Negative, glycerolized and irrigated packed cells [2,3,8]. These tests were not indicated in the case of the presented patient.

The presented patient got anti D after delivery. More and more mothers should however be sensitized to attend antenatal clinics from first trimester so as to institute and plan for early management.

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CASE 15

URINARY TRACT INFECTION IN PREGNANCY: CHEMOTHERAPY.

NAME: M.W AGE: 18 YEARS.

PARITY 0+0 LMP 8/12/05.

IPNO. 1097911 EDD 15/9/06.

DOA 06/06/06 12/06/06

GESTATION 30 WEEKS.

PRESENTING COMPLAINTS:

Painful micturation for 3 days.

Abdominal pains for 3 days

Fever for 2 days

Vomiting for 2 days.

HISTRORY OF PRESENTING COMPLAINTS

She was well till three days prior to the onset of the lower abdominal pains, and was associated with painful micturation. The abdominal pain was on the lower abdomen initially but a day before admission, the pain spread to the lumbar region. There was no per vaginal bleeding or per vaginal discharge. She experienced fever for two days and she had vomited twice before admission. She had no haematuria. The bowel habits remained normal. She had not traveled to malarial zones.

OBSGYNE HISTORY:

Her LMP was on 8/12/05 and an EDD of 15/9/06. The gestation was 30 weeks.

She had attended ante natal clinic only once in a city council clinic.

The antenatal profile done

VDRL	Nnegative.
HIV	Negative.
Blood group	O Rhesus Positive
Hb	11.5g/dl

Her menarche was at 14 years. The periods were regular and cycle of 28 days. She had no dysmenorrheal. She had not use any contraceptives.

PAST MEDICAL HISTORY:

There was nothing remarkable.

FAMILY SOCIAL HISTORY:

She was a housewife and the husband worked in the Jua Kali sector. She did not smoke cigarette or drink alcohol. There was no history of chronic illness in the family.

PHYSICAL EXAMINATION:

The patient was a young lady in good general condition, was febrile, not pale and not jaundiced. There was no pedal oedema.

Pulse rate	88 B/M,
Blood pressure was	130/75 mmHg,
Respiratory rate	18/minutes.
Temparature	38.2^0C

ABDOMINAL EXAMINATION

The abdomen was uniformly distended. Fundal height corresponded to 30 weeks gestation. The foetal lie was longitudinal, presentation was cephalic the head was ballotable. Foetal heart was heard and regular at 148/min. There were no contractions palpated.

There was tenderness on the right lumbar region.

OTHER SYSTEMS:

The respiratory, cardiovascular and central nervous system was essentially normal.

Vaginal Examination.

She had normal external genitalia, the cervix was closed and in posterior position. There was normal vaginal discharge on the examining finger.

DIAGNOSIS

Acute pyelonephritis in pregnancy at 30 weeks of gestation was made.

MANAGEMENT

She was admitted and a midstream specimen of urine taken for microscopy, culture and sensitivity. She was started on intravenous antibiotics and analgesics.

She was given ZINACEF® 750mg 8 hourly, Buscopan® 20mg, and paracetamol 1gm every 8 hours. She was aslos tarted on intravenous fluids. Blood slide for malaria was also taken. The result was negative. Blood for haemogram taken and results got the following day.

Laboratory Results:

Blood slide	No malaria parasites seen.		
Urinalysis	Appearance	-	cloudy
	Ph	-	5
	Proteins	-	trace
	Sugar	-	Nil
	Nitrites	-	Nil
	Pus cells	-	60/hpf
	Yeast	-	Nil
	Ova	-	Nil

Haemogram results:

Hb		12.4g/dl
WBC		9.5 x 10^9/l
	Neutrophils	71%
	Lymphocytes	27%
ESR		40mm/hr

Urine Culture:

There was heavy growth of Klebsiella spp that was sensitive to

Amikacin , Augmentin, Cefuroxime and Gentamycin.

When the patient was reviewed the following day, she reported maked improvement. Fever had substantially come down (Temp was 36.6^{0}C). The flank pain had also reduced and she had not vomited. Examination did not elicit the lumbar tenderness that was there