size of the tumor. In carcinoma in situ and micro invasive carcinoma, the surgical procedures are cone biopsy, cryosurgery, laser beam therapy, electro-surgical cauterizaton, simple or extended hysterectomy depending on desire to preserve reproductive function. Invasive carcinoma the surgical options are extended hysterectomy, radical hysterectomy and node dissection (Wertheim's hysterectomy), and pelvic exenteration. Radical surgery is definitive only in stage 1 to stage II a lesions. Radiotherapy is applied in all stages of invasive carcinoma (1,2,3).

Management of carcinoma of the cervix during pregnancy is also either by radiation or surgery. In the late pregnancy delivery is awaited before therapy while in the first and second trimesters pregnancy is terminated (2). The use of chemotherapeutic agents in the treatment of cervical carcinoma has been discouraging.

Complications of radical surgery include mortality (<1%), fistula formation, would sepsis, dehiscence, intestinal obstruction. Follow up recommendations include vaginal vault smears for those who have had radical surgery.

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GYNAECOLOGY CASE 3

CARCINOMA OF THE OVARY STAGE I C: TOTAL ABDOMINAL HYSTERECTOMY, BILATERAL SALPINGOOPHORECTOMY AND CHEMOTHERAPY

Name	: S.N
Age	: 57 yrs
IP No	: 0857667
Parity	: 6 + 0
Diagnosis	: Ca Ovary Stage I C
DoA	: 15/01/03
DoD	: 24/02/03

Presenting Complaints

The patient complained of abdominal swelling for 2 months and vaginal bleeding for 1 month.

History of Presenting Illness

The abdominal swelling was of insidious onset, progressive and was mainly in the left flank. The vaginal bleeding was light and irregular. The symptoms were associated with mild lower back pains.

Obstetric and Gynaecologic History

She was para 6+0, last delivery in 1978. All deliveries were normal and all children alive. She was 6 years post-menopausal.

Past medical / Surgical History

She had right mastectomy at Moi Referral Hospital with subsequent single dose of radiotherapy. Further radiotherapy hampered by financial constraints.

Family and Social History

She was a retired nurse, divorced since 1979. There was no family history of cancer or any other chronic illness. She neither smoked cigarettes nor took alcohol.

Systemic Enquiry

This was essentially normal.

General Examination

She was in fair general condition, afebrile, not pale, no oedema, no jaundice or lymphadenopathy. Pulse rate was 80/min, blood pressure 110/70 mmHg, temperature 36.9^0 c and respiratory rate 21/minute.

Systemic Examination

She had right pectoral scar of mastectomy. Respiratory, cardiovascular and central nervous system were essentially normal.

Abdominal Examination

There was a left iliac fossa mass corresponding to 20 weeks gestation. The mass was firm, smooth, mobile and non-tender. No ascites was elicited. Liver and spleen were not enlarged.

Vaginal Examination

External genitalia was normal, cervix was firm, short and posterior. Uterus was bulky and irregular. Right adnexa and pouch were free. Left adnexa was full. No blood or discharge on examining fingers.

Provisional Diagnosis – Ovarian Malignancy

Investigations done

1. Full Haemogram
   Hb 13.2 g/dlL
   WBC 7.8 x 10^9/L
   Platelets 329 x 10^9/L
2. Urea and Electrolytes
   Na^+ - 143 mmol/L
   K^+ - 4.6 / mmol/L
   BUN – 2.3
   Creatinine 85 mmol/L
1. LFTs – Within Normal Limits
2. Chest X- ray – Normal Findings
3. Pap Smear – Normal Cytology
4. Abdomino – pelvic ultra sound scan.

Liver, spleen, pancreas, kidneys, gall bladder, and para – aortic region were normal.

There was a left adnexal cystic mass with septation measuring 14 cm in diameter. Uterus was enlarged with multiple mixed echogenic masses some with calcification. Endometrium was 1.5 cm thick. There was minimal ascites.

The patient was prepared for laparatomy and she gave an informed written consent. At laparatomy, liver, spleen and the intestines were found free of tumor seedlings. There was minal ascites which was drained and taken for cytology. The right tube and ovary were grossly normal. Total abdominal hysterectomy and bilateral salpingo ophorectomy was done and specimen taken for histology.

Past operatively she recuperated well.

Histology report

Left ovary – Well differentiated mucinous cystadenocarcinoma.

Cervix/myometrium – Normal

Endometrium – Simple cystic heyperplasia

Right ovary / tube – Normal

Ascitic tap cytology – clumps of pleomorphic round cell with degenerating nuclei suspicious of malignancy.

She was counseled on the findings and need for chemotherapy. She was put on intravenous adriamycin 50 mg stat, intravenous cisplatin 100 mg stat, and intravenous cyclophosphamide 500 mg daily for five days. She was discharged home stable to be re-admitted after 3 weeks with baseline investigations. She was re-admitted between 18/03 – 27/03/03 for 2nd course of chemotherapy which was uneventful. She was scheduled for repeat courses with 3 – weeks intervals.

DISCUSSION

S.N was a 57 yr old para 6 + 0 being managed for ovarian cancer by surgery and chemotherapy.

Ovarian cancer is the most lethal of all gynaecologic malignancies and is the 5th leading cause of death due to cancer in American women.

In Kenya, ovarian cancer ranks third in incidence after cervical cancer and choriocarcinoma. At Kenyatta National Hospital it has been found to account for 8.1% of all female genital malignancies (2). In Uganda, it ranks 2nd after cervical cancer (3).

The incidence of ovarian cancer increases with age with the average patient being 50 –59 year. The other peak is seen in the prepubescent girl (4) due to malignant germ cell tumours.

The aetiology of ovarian cancer is largely unknown although a number of risk factors have been identified. These include repeated ovulation with subsequent disruption of germinal epithelium. This is supported by the fact that chronic anovulation, multiparity, breast-feeding and oral contraceptive use are protective. Pregnancy decreases the risk of ovarian cancer by 30 – 60% (4). Other factors implicated are high fat consumption, exposure to talc and positive family history. There are three syndromes associated with familial risks:-

a) Site-specific familial ovarian cancer, epithelial ovarian cancer involving first degree or first and second degree relatives.
b) Breast – Ovarian cancer syndrome – consists of those families with two or more cases of early onset breast cancer and two or more cases of ovarian cancer.
c) Family cancer syndrome – Lynch sydrome II characterized by cancers of the proximal colon in addition to the frequent occurrence of other primary adenocarcinomas of the breast, ovary and endometrium.

The patient presented had earlier been diagnosed to have breast cancer although family history was negative.

Classification of ovarian cancer is histologic thus:-

- Epithelial – serous, mucinous, endometroid, clear cell, transitional cell, undifferentiated.
- Germ Cell – Dysgerminoma, endodermal, teratoma, embryonal carcinoma choriocarcinoma, gonadoblastoma, mixed cell tumor.
- Sex chord and stromal – Granulosa cell tumour, fibroma, thecoma, sertoli, Leydig.
- Metastatic – breast, colon, stomach, endometrium, lymphoma.

Staging by the International Federation of Gynaecology and Obstetrics (FIGO) describes the gross extent of the neoplasm at the time of first therapy and the histopathology of the tumor.

Stage I – Growth limited to the ovaries

1A – One ovary; no ascites

1B – Both ovaries, no ascites

1C – One or both ovaries with ascites or positive peritoneal washings.

Stage 11 – One or both ovaries; pelvic extension.

11A – Metastases to the uterus / tubes

11 B – Metastases to other pelvic tissues

11C – Pelvic metastases, ascites or positive peritoneal washings.

Stage 111 – One or both ovaries with widespread intraperitoneal metastases.

Stage IV – Distant metastases including parenchymal liver metastases.

Our patient had mucinous cystadenocarcinoma of the ovary stage I C.

Epithelial tumors account for over 60% of all ovarian neoplasms and more than 90% of malignant ovarian tumors. Pseudomyxoma peritonei is a condition characterized by mucin in the abdominal cavity following leakage from mucinous neoplasms (1,4). Diagnosis is based on clinical history, physical examination and laboratory and radiological findings. Symptoms are as a result of pressure exerted by the tumor on the adjacent organs while pain is a late symptom. (4,5,6).

Physical exam includes other primary sites like the breast, lymph nodes, GIT and a thorough pelvic examination . A solid or cystic adnexal on abdominopelvic mass with ascites is most suggestive of ovarian malignancy. Total blood count, renal and liver function tests are essential. Cervical and vaginal cytology, chest X-ray, abdomino-pelvic imaging are all useful investigations. Laparascopy may be carried out for small suspicious tumors. Some tumor markers useful include B –HCG, & - Alfa-fetoprotein, placental alkaline phosphatase, carcino – embryonic antigen (CEA) and Ca – 125.

The mainstay of treatment is surgery followed by chemotherapy. Stage 1A and 1B may be cured by surgery alone with follow-up at the oncology clinic. Stages IC – IV require both surgery and chemotherapy. A standard chemotherapy consists of 6 cycles of cisplatinum, doxorubicin (adriamycin) and cyclophosphamide, however, some may require upto 12 courses. Dys-germinoma may respond to bleomysin, vinblastine and cisplatin (5,6,7). Sensitive and metastatic nodal disease in the pelvis and para-aortic region respond well, very often resulting in cure. Intraperitoneal gold and 32 – phosphorus (32P) have also been used with good results as have been hormonal trials. The long term survival of the patients depend on age, stage and histologic type of tumour, biological activity of the tumor and host resistance. The well differentiated tumour has an overall better prognosis (4).

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GYNAECOLOGY CASE 4

CHORIOCARCINOMA – CHEMOTHERAPY

NAME	:	H.I
AGE	:	20 YRS
IP NO	:	0922331
PARITY	:	0 + 1
DIAGNOSIS	:	CHORIOCARCINOMA
DOA	:	24/10/03
DOD	:	12/01/04

Presenting Complaints

The patient was admitted with complaints of vaginal bleeding and abdominal pains for four months.

History of Presenting Illness

She was referred from Garissa District Hospital with irregular vaginal bleeding and anaemia associated with abdominal pains. The bleeding started a month after she had been evacuated for a molar pregnancy. She had other symptoms of nausea and breast tenderness.

Obstetric and Gynaecologic History

She was now para 0 + 1. Had not had normal menses since the evacuation of the molar pregnancy. Menarche was at 15 years, cycles were normal lasting 4 days after every 28 days. She used no contraception.

Past Medical / Surgical History

Not significant

Family and Social History

She was a married muslim, peasant with no history of chronic illness in the family.

Physical examination

She was found to be sickly, afebrile, moderately pale, no jaundice and no lymphadenopathy, no oedema. Blood pressure was 110/60mmHg, pulse rate 85/min and respiratory rate 22/minute. Cardiovascular, respiratory and central nervous systems were essentially normal.

Abdominal examination.

No abdominal distension, no organomegally but there was marked suprapubic tenderness.

Vaginal Examination

She had female genital mutilation II. Cervix was central, firm, closed. Uterus was bulky and adnexae and cul-de-sac empty. There was blood on examining fingers.

Accompanying Investigations

1. Haemogram - WBC 4.8 X 10^9/L
   - Hb 7.1 g/dl
   - PIT 332 x 10^9/L
2. Abdominopelvic Scan

   Liver, spleen, kidneys normal, uterus bulky with a fundal mass 5.5 x 6.0 cm, mixed echogenicity. Adnexae and ovaries were normal.
3. B-hcg – 244172 m/u/ml.

Diagnosis – Choriocarcinoma with? Uterine perforation.

Management

She was admitted and other investigations done.

1. LFTs - Normal
2. Urea Creatinine – Normal
3. Chest X-ray – Clear lung fields
4. Blood grouping and Cross-matching.

She was transfused 4 Units of blood and taken to theatre for laparatomy. At laparatomy she was found to have a fundo posterior perforation which was repaired. Other organs were normal.

She was started on a course of intravenous methotrexate 50mg, adriamycin 0.5mg and cyclophosphamide 250mg all once daily for 5 days.

After a rest of ten the 2nd course was commercial on 19/12/03.

Repeat investigations were as follows:-

1. BHCG – 33,890m/U/ml
2. Haemogram Hb 11.1g/dl

   WBC 3.6 x 10^9/L

   Platelets 159 X 10^9/L
3. LFTs – Total Protein 74.6 g/dl

Albumin 27.3 g/dl

Bilirubin – Total 16.4 Umol/L

Direct 11.3 Umol/L

During the 2nd course of cytotoxics, she developed jaundice and methotrexate was reduced to 25mg daily. She was also put on folinic acid during the rest period.

On 05/01/04. She was started on her 3rd course of cytotoxics after the following investigations:-

1. BHCG - 806.33 mIU/Ml
2. Haemogram - Hb 11.6g/dl
   WBC 2.2 x 10^9/L
   Platelet 272 x 10^9/L
3. LFTs - Total Protein 74.6 gldl
   Albumin 27.3 g/dl
   Bilirubin – Total 16.4 Umol/L
   Direct 11.3 Umol/L
4. Urea, electrolytes – BUN 3.6 mmol/L
   Creatinine 8

Leucopeima was noted and she developed mouth ulcers. She was put on folinic acid during rest period and scheduled for the fourth course only after all parameters normalized.

DISCUSSION

Gestational trophoblastic disease (GTD) is clinically classified into hydatidiform mole and gestational trophoblastic tumors. Hydatidiform mole is further divided into complete or partial mole while the gestational trophoblastic tumours comprise of invasive mole, choriocarcinoma and placental site tumours. The disease arises from fetal tissue within the maternal host and is composed of syncytiotrophoblast and cytotrophoblastic cells. In addition to being the first and only disseminated solid tumour, GTD is highly curable by chemotherapy. The disease elaborates a unique and characteristic tumour marker, human chorionic gonadtrophin (1,3,4,7).

Hydatidiform mole is the most common of the trophoblastic diseases. It develops in approximately 1 in 100 pregnancies in USA and Europe. Based on population studies the incidence in most of the world is probably similar to that in the United States. Choriocarcinoma is less frequent and is reported in 2-4% of all GTD with an incidence of 1 in 4,000 pregnancies in the USA. (3,7). At Kenyatta National Hospital, Fongoh reported an incidence of 1 in 1118 deliveries in 1984 while Makokha et al had reported only 65 cases between 1975 – 79 (2,6).

Gestational trophoblastic tumours almost always develop with or follow some form of pregnancy. Very rarely, choriocarcinoma may arise from a teratoma. Approximately 50% arise from a hydatidiform mole, 25% follow an abortion and 25% develop after an apparently normal pregnancy. It is important to note that although most cases of choriocarcinoma are preceded by molar pregnancies, only 3-5% of all molar pregnancies are complicated by choriocarcinoma (1,3,4,7).

Factors associated with the disease include age, previous mole and genetic make up. There is a relatively high incidence in women under 20 and over 40 yrs of age. Recurrence of hydatidiform mole is seen in about 1-2% of cases blood group. A woman impregnated by blood group O men have almost 10 times increase of risk of developing choriocarcinoma than those with blood group A spouses, while blood group AB women have a relatively poor prognosis. The role of gravidity, parity, other reproductive factors, estrogen status, oral contraceptives, and dietary factors in the risk of GTD is unclear (17). In hydatidiform mole the symptoms include first trimester bleeding. Uterine size bigger than dates in 50% of cases, lack of fetal activity, hyperemesis and pregnancy – induced hypertension before 24 weeks gestation.

In choriocarcinoma the most common, though not constant sign, is irregular bleeding after immediate abortion or pueperium in association with uterine subinvolution. Other symptoms and signs are those of metastases e.g vagina tumours, cough with hemoptysis, or neurological signs (3,7,8).

Diagnosis of GTD is based on high sense of suspicion together with investigations notably urine or serum BHCG, Chest X-ray, CT-Scan or MRI. The amount of BHCG correlates closely with the number of variable tumour cells. Treatment of GTD is based on clinical classification. Only gestational trophoblastic tumours require treatment. These are specifically choriocarcinoma, invasive mole and placental site tumours.

The tumours are divided into non-metastatic and metastatic tumours.

Metastatic tumours are further divided into low risk and high risk. The high risk or poor prognostic factors are:-

1. Pretherapy BHCG level > 40,000mIu/ml
2. Duration > 4 months before treatment
3. Brain or liver metastases.
4. Prior chemotherapy failure.
5. Antecedent term pregnancy (3,5,7).

In 1983, the World Health Organization Scientific Group on Gestational Trophoblastic Disease published specific recommendations regarding staging into low, medium and high risk. A total score less than 4 is low risk, 5 – 7 is medium risk and a score 8 is high risk. (9).

Prognostic Factor	Score			
	0	1	2	3
1. Age	<39yr	>39yr	-	-
2. Pregnancy	H. Mole	Abortion	Term	-
3. Duration (Months)	<4	4 – 6	7 – 12	>12
4. BHCG(mIu/ml	$<10^3$	10^{3-4}	10^{4-5}	>10
5. ABO (+ x 0)	0xA/Ax0	B or AB	-	-
6. Largest tumour	-	3 – 5	>5	
7. Metastases	-	Kidney/Spleen	Liver/GIT	Brain
8. No of Metastases	-	1-4	4 – 8	>8
9. Prior chemotherapy	-	-	Single drug	>2

For non-metastatic tumour or low risk disease single drug chemotherapy with either methotrexate or dactinomycin is recommended. However, methotrexate is contra-indicated in hepatocellular disease or impaired renal function.

Combined or multiple drug therapy is indicated in high risk disease.

Multiple drug therapy include use of methotrexate, actinomycin D and chlorambucil or cyclophosphamide (MAC regimen). Additional drugs include etoposide and vincristine in EMACO regimen. During treatment weekly BHCG and total blood count are done. Minimum rest periods are 7-10 days for single drug and 10 – 14 days for multiple drug therapy. Therapy is continued until remission which is documented only after 3 consecutive weekly normal HCG litres have been achieved.

Prognosis of malignant non-metastatic disease with appropriate treatment is extremely good. However, remission rates have been reported to vary between 45% and 65% for high risk metastatic disease (1).

Follow-up includes monthly BHCG litres for 6 months then 2 monthly for 6 months while on combined pill for contraception. Follow-up may be discontinued and pregnancy allowed after I year. There is no difficulty with fertility or normal pregnancy outcome following GTD but women who had GTD are at increased risk for developing GTD in a subsequent pregnancy (1).

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GYNAECOLOGY CASE 5

LONG TERM REVERSIBLE CONTRACEPTION – NORPLANT INSERTION

Name:	J.W
Age:	24 yrs
No:	286/02
Parity:	2+0
Date:	23/07/2002

Case History

The client was 24 years old Para 22+0 who had settled on Norplant as a contraceptive method. Her last delivery was 10 months earlier and was breastfeeding. She had attained menarche at 15 years and had regular cycles lasting 3 days after every 30 days. She had used oral contraceptive pills between deliveries without any complication. Currently she was on Nordette.

Post-Medical History

Nil – significant

Family and Social History

She was a housewife and husband was a security officer. She neither smoked cigarettes nor took alcohol. No chronic illness in the family.

Physical Examination

She was in good general condition, afebrils, not pale, no oedema or jaundice. No varicose veins. Breasts were lactating. Vital signs were within normal range. BP-110/7-: PR- 76/min: RR 18/min. Respiratory, cardiovascular, and central nervous systems were essentially normal.

Abdominal Examination

Abdomen was scaphoid, no tenderness, and no organomegally.

Pelvic examination

She had normal external genitalia; cervix was firmly long, closed. Uterus was anteverted, normal size, freely mobile. Adnexa and pouch of Douglas were free.

Investigations

Pregnancy test – negative

Procedure

After counseling on insertion procedure, the client was settled on the couch. The medical left upper arm was cleaned and draped. The insertion site was infiltrated with 8ml 1% lignocaine in a fern like pattern. A skin incision 2mm was made with a surgical blade. A trocar with plunger was introduced through the incision subdermally up to the second mark on the drocar. While stabilizing the tracer, the plunger was removed and a Norplant capsule introduced into the trocar. The plunger was then reinserted back into the trocar until the capsule is fully inserted subdermally. The procedure is repeated in a fern-like pattern until all the six capsules are inserted. The trocar is the withdrawn and the incision side dressed first with adhesive tape then gauze and bandage. The client was then allowed home with instructions to remove the bandage after 3 days.

She was then reviewed after 1 week without any complications. She was for review when necessary.

DISCUSSION

The Norplant system provides levonorgestrel in six siliastic containers that are implanted subdermally. Each is 34 mm long and 2.4mm wide, and contains 36mg of levonorgestrel. The combined 216mg dose results in intermediate contraceptive effectiveness. By 9 months after insertion, the release rate is about 50ug/day, gradually decreasing to 25-30 ug/day by 60 months, when it should be removed. (1)

Norplant is one of the most effective contraception available with normal fertility promptly restored after termination. The failure rate is 0.04% in the first year and 0.2%, 0.9%, 0.5% and 1.1% in second, third, fourth and fifth years (2).

Continuation rates of Norplant users after 1 year are 85-95% and 33-78% completed 5years (3). The main reasons for discontinuation include menstrual disturbances, headache, weight gain and loss, hair loss and mastalgia (7).

The mode of action is similar to other progestin only contraceptives i.e. Inhibiting ovulation by preventing the normal mid cycle LH surge, progestin-induced atrophic endometrium, thickening cervical mucous thus making it difficult for the sperms to penetrate and by causing premature luteolysis (1). Side effects range from amenorrhoea to heavy prolonged bleeding others include headache, weight gain or loss, mastalgia, enlarged ovarian follicles, acne and dermatitis (2). Contradictions of Norplant include pregnancy, abnormal vaginal bleeding, patients predisposed to thromboembolism, and when on drugs like rifampician, phenobarbitone and anticoagulatants. (4). Disadvantages include high initial cost of insertion and difficulty in removal if inserted deep (6).

Complications of Norplant insertion are infection at insertion site, pain, bleeding and expulsion of capsule (5).

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GYNAECOLOGY CASE 6

VOLUNTARY SURGICAL CONTRACEPTION – BILATERAL TUBAL LIGATION

Name	:	R.W.
Age	:	36 years
I.P. No	:	0627795
Parity	:	4+0
DOA	:	04/10/00
DOD	:	04/10/00

Presenting Case

The client was a 36yr old Para4+0 who had achieved desired family size. She had settled for bilateral tubal ligation after family planning counselling with the husband. All her deliveries were SVD with the last delivery 2 months previously. She was currently on oral contraceptives and had not resumed her menses. She was breastfeeding.

Past Medical History

Not contributory.

Family Social History

She was a married teacher living with her family in Thika. She did not smoke cigarettes or take alcohol.

General Examination

She was in good general condition, afebrile, not pale, no jaundice or oedema. Breasts were lactating. BP 120/7-mmttg: PR 74/min: Re 18/min: respiratory, cardiovascular and central nervous systems were normal.

Abdominal Examination

Abdomen was seaphoid, no tenderness, and no organomegally.

Pelvic Examination

She had normal external genitalia, cervix was porous, uterus was normal size and freely mobile. Adnexa and pouch of Renglas were free. Cervical excitation test was negative. No abnormal discharge on examining fingers.

Diagnosis

Desired family size

Investigations

1. Pregnancy test – negative
2. PCV – 30%

Management

Interral bilateral tubal ligation was scheduled for 04/10/00 under local anaesthesia. She completed the VSC booklet; counselled on procedure.

Procedure

On the 04/10/00 she was re-examined and found fit for the procedure. In theatre, the patient was put in lithotomy position, vulvovaginal toilet done and bladder catheterized. Speculum was inserted and a uterine elevator introduced after uterine sounding. In lithotomy position, the operation site was cleared, draped and area of incision anaesthetised with 1% lignocaine. A minilap incision was made about 3cm wide and abdomen opened in layers. With the help of the uterine elevator, the fundus was identified and the table put in head-down position. With the patient drawing in the abdomen as earlier instructed the tubes were identified systematically and in turn picked with Babcock. Modified pomeroy's technique was used to ligate both tubes. The bed was repositioned and abdomen closed. Uterine elevator was removed. The procedure took about 30 minutes.

The patient recovered well and after 3hrs was allowed home on antibiotics and analgesics. She was for review after 10 days.

DISCUSSION

Voluntary surgical contraception (VSC) of the female has over the past three decades become common. In Africa countries, however, the acceptance has remained low. In Kenya 6% of married women have been sterilized (2,3)

Tubal ligation is ideal for those clients who are certain they wish no further children, need a reliable contraceptive method, and whose subsequent pregnancy may have an adverse effect on the woman's health. Older women with a median age of 32 years more commonly go for female sterilization whereas other methods like pills, injections and implants are used by younger women in the peak child bearing age (2,5).

In general, the countries with the highest fertility rates also have the highest rate of maternal, infant and child mortality (1) cultural conditions influence the use of voluntary surgical contraception.

The current contraceptive prevalence rate for Kenya is about 39% (2). The knowledge of family planning methods is nearly universal with 96% of all women 15-49 years and 98% of all men 15-59 years knowing at least one method of family planning.

Family planning decisions should be made on a completely voluntary basis but on a thoroughly informed choice on the part of individuals and couples (1,2,3,4). Preoperative assessment should include previous history of pelvic disease, pelvic and abdominal surgery, lung disease, allergies and recent infections, a pelvic examination checks for uterine mobility, rules out pelvic infections and masses, and pregnancy.

Timing of sterilization procedure is important in choosing the surgical approach. Post partum VSC offers greater convenience to the client and offers lower costs, greater waste of surgery and more efficient use of health resource (4). However, interval sterilization clients are more certain with their wish and present with less regret after the procedure. For post partum sterilization a sub umbilical minilaparatomy incision is made while for interval sterilization a suprapubic minilaporatomy is done. Both are done under local anaesthesia and light sedation.

Laparatomy with incisions more than 5 cm may be performed under general anaesthesia when minilaparatomy is not visible. Laparascopy is also used, and is less painful, has lower complications, shorter operation and recovery time and leaves a small scar, but is not recommended for the immediate post partum periods (3,4). Other approaches are culdoscopy/culdotomy but associated with high infection rate.

Transcervical route for hysteroscopic infection of sclerosants is expensive, difficult with lower success rates and it is still on experimentation (3). Pomeroy's method is the most widely used in Africa including Kenya. Other methods in use include tubal clips and rings, and electro coagulation.

Complications include wound sepsis, hematoma formation, injury to the uterus, bladder, gut and sterilization failure. Failure rate of <1% has been reported following sterilization by Pomerony's method (3). This may occur as a result of the woman being pregnant at time for sterilization, poor surgical technique, recanolization. Sterilization is effective within the first days of use. It has a lower risk of pregnancy than most temporary contraceptive methods.

Only 1% of women who undergo tubal sterilization request reversal (3,4). The success of reversal is dependant on the length of normal tube preserved. Pomeroy's method has reversal rates approaching 50% and it is even higher after use of clips and bands (4) reversal is also associated with high ectopic pregnancy rates (4). Tubal sterilization does not protect against sexually transmitted infections including HIV/AIDS.

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GYNAECOLOGY CASE 7

DISLOCATED INTRA-UTERINE CONTRACEPTIVE DEVICE – LAPARATOMY

Name:	J.W.
Age:	35 years
I.P. No.	09345521
Parity :	3+0
D.O.A:	16/01/04
DOD:	20/01/04

Presenting Complaints

The patient complained of failure to feel IUCD threads for a duration of five months.

History Of Present Illness

The patient was referred from a District Hospital where she had presented with lost UCD for five months. She had been having the device for one year. She also complained of suprapubic pain and intermenstrual bleeding. An attempt to remove the IUCD at the district hospital had failed.

Obstetric And Gynaecologic History

She was Para 3+0, all spontaneous vertex deliveries (SVD). Menarche was at 14 years and had normal cycle 3 days after every 28 days. Last menstrual period was 24/12/03.

Past Medical/Surgical History

Nil significant

Family and Social History

She was a housewife with no chronic illness even in the family. She neither smoked cigarettes nor took alcohol.

General Examination

She was in good general condition, no febrile, no pallor, jaundice or oedema. T-36.2^{0}c: BP-110/70mmt:PE80/min and RR 22/min. Respiratory, cardiovascular and central nervous systems were essentially normal.

Abdominal Examination

Abdomen was not distended, moved with respiration. There was no tenderness or organomegally.

Pelvic Examination

Normal external genitalia, normal vaginal mucosa, and posterior healthy cervix n speculum. No threads were seen through the cervical os. Uterus was of normal size; both adnexae and cul-de-sac were free.

Pelvic Ultrasound Scan

The uterus was of normal size, endometrial cavity was empty. Ovaries and fallopian tubes were normal. There was a CUT380a in the left adnexa near the utero-cervial junction. No fluid in cul-de-sac.

Diagnosis – Dislocated IUCD

Management

The diagnosis was conveyed to the patient together with the decision to retrieve the IUCD by laparatomy. She gave in informed written consent. The following investigations were done

PCV – 29%

U/E/C –

- Na^+ - 140
- K^+ - 4.37 } mmol/l
- Urea – 4.2
- Creatinine – 80 Umo/l

She was premeditated with atropine sulphate intramuscularly 0.6mg stat other taken to theatre for laparatomy.

In theatre she was put under general anaesthesia and laparatomy done through a pfannestel incision found were normal uterus, tubes, ovaries and intestines. In the left

adnexa were visible threads of CU T380a that was in a small pocket of pans. The IUCD was easily retrieved after incising the pocket of pus that was drained. The IUCD was kept for the patient to see and peritoneal toilet done with rifocin. Abdomen was closed after correct instrument and snab count, anaesthesia reversed successfully and the patient put on antibiotic cover and analgesics. Post-operatively the patient did well and was discharged on the 4th post-operative day for follow-up in the district hospital.

DISCUSSION

Intrauterine devices (IUDs) are in general one of two varieties. Those that are chemically inert area composed of a non-absorbable material, most often polyethylene and impregnated with barium sulphate for radiopacity. E.g. lippies loop. In those that are chemically active, there is continuous elution of copper or a progestational agent e.g. copper T 380A, progestasert and levenorgestrel device (LNg-IUD) (6). Mechanisms of action have not been defined precisely but the major actions are not as abortifacients but as contraceptives. The intense local inflammatory response that is induced, in turn leads to lysosomal activation and other inflammatory actions that are spermicidal. Another possible mechanism includes accelerated tubal motility likely induced, by the intrauterine inflammatory response. Also, the endometrium is an extremely hostile site for implantation for the blastocyst. The long time use of progestasert leads to atrophic endometrium. The progestin – containing devices may interfere with sperm penetration through thickened cervical mucosa.

Benefits of IUDs, Particularly the progesterone and LNg-IUD, include contraception, reduced incidence of ectopic pregnancies, and reduced menstrual blood loss, reduction in dysmenorrhoea and even pelvic infections. (1,2,3). Adverse effects depend on IUD in use and include uterine perforations, abortions, uterine cramps and pelvic inflammatory disease, memorrhagia and iron deficiency anaemia are associated with CUT 380A. Lost IUD is not an uncommon complaint among IUD users (1,2,4).

A lost IUD is one whose tail cannot be visualised through the external cervical os. Such a device is either expelled, the tail may simply be in the uterine cavity along

with a normally positioned device or dislocated (5). Intrauterine pregnancy may also lead to a lost IUD. In about 10% of the IUDs inserted, the threads will be missing after a few months. Expulsion of the device is most common during the first month after insertion. Locating a lost device can be done by two-dimensional radiography with marker IUD, hysteroscopy or ultrasonography. Sonograph has the added advantage of detecting a co-existing pregnancy (4,6)

Gentle probing of the uterine cavity with a Randall stone clamp or a rod with a terminal hook will retrieve the string and/or device. Cervical dilatation and probing using an artery forceps, a current or hysteroscopic biopsy hooks is also done to retrieve a lost IUD. A device may penetrate the uterine wall in varying degrees in which case it can be retrieved by laparascopy or by performing a laparatomy.

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GYNAECOLOGY CASE 8

RUPTURED ECTOPIC PREGNANCY-LAPARATOMY

Name:	C.W	DOA	28\07\03
IP.NO:	0898063	DOD	02\08\03
AGE:	23YRS	PARITY 1+1	

Presenting complaint

The patient was admitted through casualty with complaints of lower abdominal pains and light bleeding per vaginum for two weeks.

History of presenting illness

The patient initially presented to hospital on 07\07\03 with complaints of generalized lower abdominal pains, no vaginal bleeding and no urinary symptoms. She was empirically put on treatment for pelvic inflammatory disease. The symptoms persisted and on 09\07\03 pelvic ultra sounds scan was done that showed non-gravid uterus with fluid in the pouch of Douglas (pod) suggestive of pelvic inflammatory disease. She was then put on augmentin and bus Copan and allowed home. On 18/07\03 she was presented with persistent lower abdominal pains with amenorrhoea of seven weeks and pregnancy detection test was positive. In the absence p.r bleeding she was reassured and allowed home on analgesias. On 23\07\03 she presented again with lower pains but this time accompanied by light bleeding per vaginum. She was treated for threatened abortion and put on ventolin and phemobarbitone. On 28\07\03 she was admitted through casualty with complaints severe abdominal pains worsened by movement accompanied by vaginal bleeding of dark non-clotting blood.

Obstetric and gynaecologic history.

She attained menarche at the age of 13years. She had regular, painless menstrual cycles with a duration of 3 days and cycle length of 21 days. Last menstrual period was on 30\05\03 giving her an amenorrhoea of 7 weeks. She was para1+1 having had a spontaneous vertex delivery in 1999 and an abortion in April 2003 at 11 weeks. The

abortion started spontaneously with vaginal bleeding and manual vacuum aspiration done in Kenyatta National Hospital. She had not used any contraceptive method.

Post-medical history

This was not contributory.

Family social history

She was a housewife married to a casual labourer. She did not smoke or drink alcohol. There was no family history.

Physical examination

She was sick looking, moderate pallor, not jaundiced and no lymphadenopathy. Vital signs Bp-120\60mmttg

Temperature-36^{0}c

Pulse rate-80\min, regular, strong

Respiratory rate-20\min

Extremities were warm.

Respiratory system, cardiovascular and central nervous system were essentially normal.

Abdominal examination

The abdomen was not distended, moved with respiration and there were no surgical or therapeutic marks. There was suprapubic tenderness more marked in the right illiac fossa. No palpable masses. The abdomen was tympanic on percussion but this examination was limited in the suprapubic region due to tenderness. Bowed sounds were present.

Vaginal examination

Speculum exam showed normal external genitalia, normal vaginal mucosa. The cervix was posterior, bluish, long, closed with dark blood oozing through the os. Digital exam revealed a firm cervix with os closed, anteverted normal sized uterus, boggy adnexae

And pouch of Douglas. Cervical excitation was positive.

Abdominal Paracentesis

Using a 20 ml syringe and 20 gauge syringe 5ml of non-clotting blood was aspirated from the right side.

Investigations Done

1. **Pelvic ultra sounds scan.**
   Non-gravid uterus with normal echo pattern. There was a complex lystic mass in the right adnexa measuring about 3x4 cm. There was fluid around the mase and in the pouch of Douglas. Its adnexa was normal.
   Conclusion-leaking right ectopic pregnancy.

2. **P C V – 27%.**

Diagnosis

Ruptured ectopic pregnancy.

Management

Blood was taken for grouping and cross – matching. An intravenous lime was established with a gauge 18 branula and a drip normal saline started. An informed consent for laparatomy was obtained from the patient. Intramuscular atropine sulphate 0.6 mg stat was given half an hour before laparatomy as a premedication.

LAPARATOMY AND RT PARTIAL SALPINGECTOMY

Under general anesthesia in main theatre, vulva vaginal toilet was done, asceptically catheterized and clear urine drained. Examination under anaesthesia confirmed the diagnosis. Abdomen was cleansed and draped and abdomen opened through Pfannestial incision.

Haemoperitoneum of about 400ml was encountered and sucked out. Right ampullary ectopic gestation was revealed that had ruptured and oozing dark blood. It was double clamped using long artery forceps. The gut was packed array using wet sterile packs. The right ovary showed corpus Luteum and the fimbrial end buried in adhesions. Left

ovary and tube were grossly normal. The uterus was non – gravid and looked grossly normal. The ectopic gestation was excised and the stump ligated with chromic cat gut No.1. Hemostasis was achieved. Peritoneal toilet was done with warm normal saline. Swabs and instruments were counted, found to be correct and then abdomen closed in anatomical layers. Total blood loss was about 700ml. Anaesthesia was reversed successfully and patient taken back to the ward through recovery ward.

Postoperative care

The vital signs were observed 1\2hourly till she was fully awake then 4hrly . She was put on nil by month until bowel sounds normalized after about 6 hours after which she was put on oral sips then normal diet gradually. Three litres of normal saline alternating with 5% dextrose were administered intravenously over a period of 24 hours. She was also put on parenteral antibiotics and analgesics for 24 hours viz 1.v x-pen 2mu 6hrly; 1.v gentamycin 80mg 8hrly and 1.m pethidine 100mg 8hrly. After 24hrs the medication was changed into oral amoxil 500mg 8hrly and brufen 400mg TID and Ranferon 12 10 ml BID. On the third postoperative day the wound was opened, found to be dry and healing well and on the fourth postoperative day she was discharged home on treatment. The patient was later seen after 3 weeks in gynaecology out patient clinic where she presented no complaints. General examination and gynaecologic examination were satisfactory and was discharged from the clinic to be reviewed whenever necessary.

DISCUSSION

The patient presented with a ruptured ectopic tubal pregnancy and on emergency laparatomy right partial salpingectomy was done.

An extra uterine pregnancy is one in which a fertilized ovum implants in an area other than the uterine cavity. 99% of ectopic pregnancies occur in the fallopian tube. Of the tubal pregnancies ampullary site is the commonest (55%) followed by isthmus (25%) fimbrial (17%), interstitial (2%) (1,2). The patient had an ampullary ectopic pregnancy. Other ectopic sites include uterine corny, uterine diverticulum or rudimentary horn; cervix; broad ligament, ovary and abdominal. Very rare cases combine extra-uterine and intra-uterine pregnancy also known as compound or heterotopic pregnancy.

The incidence varies from one place to the other even in the same country. The incidence is higher in the developing countries than in the developed countries. In Kenyatta National Hospital Wabala (3) reported an incidence of 1 in every 15 full term deliveries while Mwathe (4) reported 4-5 admissions per week in the same hospital. In Nigeria Makinde (5) reported an incidence of 0.4%. 75% are diagnosed before the 12th week of gestation (2). Ectopic pregnancy may occur at any time from menarche to menopause but 40% occur in women between ages 20 and 29. There are more ectopic pregnancies in "infertile" women, in those in low socio-economic groups and in women who have had a previous ectopic pregnancy. 10-20 % will have a second ectopic pregnancy and 4-5% of these occur in the opposite tube (2).

Aetiological factors include conditions that either prevent or impede passage of a fertilized ovum through the uterine tubes. Tubal factors include salpingitis (50%), tubal developmental abnormalities like diverticula, atresia, abnormal tubal anatomy due to DES exposure in utero, previous tubal surgery, pelvic tumours, endometriosis, excessive length or tortuosity, physiologic failure such as tubal spasm or inadequate peristalsis and problems associated with intra-uterine devices (2,3,6).

Zygote abnormality factors include chromosomal abnormalities gross malformations neural tube defects. Ovarian factors are fertilization of an extruded ovum, transmigration of the ovum, post-mid-cycle ovulation and fertilization and ovarian enlargement after use of fertility drugs such as Clomiphene (Clomid) or Menotropins (Pergonal) (1,2). Exogenous hormones have also been implicated in the causation of ectopic pregnancy.

Administration of "Morning – after – pill" that contains large amount of oestrogen but fails to terminate a pregnancy increases the incidence of ectopic pregnancy 10 – fold. Pregnancies occurring in women taking progestin- only pills, 4-6% have been ectopic pregnancies. Upto 16% of pregnancies occurring in women who have progesterone-bearing IUD are ectopic pregnancies. Other causes of ectopic pregnancy include in vitro fertilization, embryo transfers, abnormal early implantation.

The patient presented had tubal adhesions, a possible aetiological factor. The pathology of an ectopic pregnancy is underlined by the lack of resistance or response of the endosalpinoc in the connective tissue next to the serosa into which implantation occurs. The trophoblast invades the blood vessels to cause local haemorrhage. In tubal pregnancy, distention and thinness of the tube predispose to rupture with eventual tubal abortion (1,2). The corpus luteum of pregnancy continues only as long as there

is viable trophoblastic tissue. The uterus enlarges slightly and softened because of the added circulation and the decidual reaction in the endometruim. There may be endometrial separation and uterine bleeding when the ectopic pregnancy terminates and separates. There is no symptoms or sign that is pathognomonic for ectopic pregnancy. Sinei et al (6) found the commonest symptoms to be lower abdominal pains amenorrhoea and vaginal bleeding. The commonest signs are pallor, abdominal tenderness with guarding and a positive cervical excitation test. Low blood pressure systolic< 100mmHg or diastolic < 50 mmHg was recorded in 21% and paracentesis was positive in 53% of the cases. Pregnancy test may be negative in up to 50% of the cases. Ultra sound and laparascopy are useful diagnostic aids, (1,2). The patient presented had sub acute onset of symptoms and although the initial pelvic ultrasound scan suggested features of pelvic inflammatory disease, a subsequent ultrasound clearly defined products of conception as a cystic mass.

The mainstay of treatment for ectopic pregnancy is surgery. Laparatomy and partial salpingectomy were performed on our patient. Conservative tubal surgery include salpingostomy, milking of the conceptus through the abdominal ostium of the tube and segmental resection and anastomis of the affected tube. Experienced surgeons can perform laparascopic surgery for unruptured as well as ruptured ectopic tubal pregnancies. Very early unruptured ectopic pregnancies can be followed up with 48 hourly BHCG measurements in which case 50% resolve spontaneously without rupturing. Methotrexate can be given to eliminate trophoblastic tissue (1,4). Complications include maternal death from haemorrhage, chronic salpingitis leading to infertility and a second ectopic pregnancy in 50% and 10-20% of patients respectively. Intestinal obstruction and fistulas may develop after hemoperitoneum and peritonitis.

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GYNAECOLOGY CASE 9

INCOMPLETE – ABORTION – MANUAL VACUUM ASPIRATION

Name	:	G.N	LMP: 12/03/03
Age	:	30 yr	DOA: 28/07/03
IP No	:	0898064	DOD: 29/07/03
Parity	:	2 + 1	

Presenting Complaints

Patient was admitted through casualty to the acute gynaecology ward complaining of lower abdominal pains and vaginal bleeding for one day. The pain was colicky and preceded the bleeding. The blood was dark and in clots. There was no history of trauma. There were no urinary symptoms.

Obstetric and Gynaecologic History

She was a para 2 + 1. Her Menarche was at 14 years and her periods lasted 3 – 4 days after 21 day cycle. First delivery was in 1992 at home to a live female infant. Second delivery was also at home in 1997 to a live female infant. She had an abortion in 2000 at five months gestation no uterine curettage was done. Her last menstrual period was on 12/02/03 and had no hard quickening. She had not used any contraceptive method.

Past Medical History

This was not significant.

Family and Social History

She was a standard six school drop out, single, working as a bar maid. She smoked cigarettes and took alcohol occasionally. No family history of chronic illness.

Physical Examination

She was in good general condition, afebrile, not pale and had no oedema. Blood pressure was 120/70 mmttg., pulse rate 78/min regular and good volume, respiratory rate 18/min. Temperature was 36.9^{0}c. Respiratory system, cardiovascular and central nervous systems were essentially normal.

Abdominal Examination

The uterus fundus was 14 weeks with mild suprapubic tenderness. There were no organomegalies.

Vaginal Examination

The external genitalia was normal. There were products of conception in the introitus and the cervix was about 4 cm dilated. Uterus was bulky and about 14 weeks, adnexae and cul-de-sac were empty. There was blood on examination fingers.

Impression

An impression of incomplete abortion was made.

Management

The patient was made aware of the findings and she gave a verbal consent for manual vacuum aspiration. In the procedure room, the patient was put in lithotomy position and vulvo-vaginal toilet done. A cuscos speculum was inserted into the vagina. The vaginal mucosa was normal and the cervix had no lesions. The anterior cervical lip was held with a tenaculum and bulky products of conception removed using sponge holding forceps. With a Karman's syringe and canula size 12, the uterus was evacuated with backward and forth rotational manouvres until a gritty sensation was felt. About 100ml of products of conception was aspirated. Intramuscular ergometrine 0.5 mg was given to minimize bleeding. Vulvovaginal toilet was repeated. The patient was admitted overnight and discharged home the following day on doxycycline and metronidazole. She was counseled and discharged through the family planning clinic.

Discussion

The patient presented had an incomplete abortion and was managed by manual vacuum aspiration. Abortion is defined as the termination of pregnancy by any means before the fetus is viable. The World Health Organization defines this as a delivery of a fetus weighing less than 500g or gestation less than 20 weeks (6). The incidence of abortion in a population cannot be determined accurately due to under reporting.
In kenyatta National Hospital, abortions account for about 60% of acute gynaecological emergencies (1,5). In a study by Aggarnal (1) about 62.5% of all incomplete abortions at Kenyatta National Hospital were induced. Majority of the patients with induced abortions were young, single and of poor socio-economic status. The patient presented had low level of education and questionable socio-economic status. However, she denied any interference with the pregnancy.

An estimated 50% of fertilized ova fail to implant and are lost in menstrual blood and 15 – 30 % of those that implant abort (2). About 50% of the abortions occurs in first trimester and the other half in the second trimester. Early abortions i.e. before 8 weeks gestation tend to be complete while those between 8 – 16 weeks are usually incomplete – partially or retained placenta.

Unsafe abortions is one of the leading causes of maternal mortality world wide. Each year between 30 and 40 Million induced abortions are performed throughout the world and as many as 200,000 women die following the procedure. In Kenya abortion complications are estimated to contribute 30% of the 600 maternal deaths per a 100,000 live births annually. Kenyatta National Hospital treats 7,000 – 10,000 cases of incomplete abortions annually (8). Spontaneous abortions are claused by a numbwer of aetiological factors including:

1. Fetal factors
2. Maternal factors
3. Drugs and environmental factors
4. Immunological factors
5. Uterine factors

Fetal factors are mainly due to chromosomal abornomalities. Maternal factors include infections e.g brucellosis, toxoplasmosis, mycoplasmosis, etc and endocrine diseases like hypothyroidism, poorly controlled diabetes mellitus etc. Drugs implicated include tubacco, alcohol and radiations. Uterine defects include cervical incompetence and synechiae. Spontaneous abortions are classified into:

1. Threatened abortion
2. Inevitable abortion
3. Complete abortion
4. Incomplete abortion
5. Missed abortion

In the first trimester abortions the foetus is almost always expelled dead while in the second trimester abortions a foetus is frequently born alive. Foetal death and abortion in the first trimester may be due to chromosomal abnormalities, congenital malformations or maternal systemic illness. Late abortions may be due to infectious diseases, venereal diseases, maternal medical illnesses, uterine abnormalities and drug ingestion (3,6,7).

Management of incomplete abortion include general supportive measures and evacuation of the uterus of products of conception. The use of Karmans syringe and canula for evacuation of the uterus is widely preferred to the old method of sharp curettage under anaethesia. Prophylactic antibiotics are given to all patients after evacuation and more so for induced abortions. Complications of abortion include haemorrhage, genital infections, peritonitis, uterine perforations, infertility and even death (3,9).

Makoha (4) found 22.2% maternal deaths as a result of post abortal sepsis. Health education and a wider contraceptive use may reduce the incidence of induced abortion. Meanwhile, back street abortions continue since abortion is not legalized in Kenya.

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GYNAECOLOGY CASE 10

SECONDARY INFERTILITY – TUBOPLASTY

NAME	:	M.W
AGE	:	29YR
IP NO	:	0897488
PARITY		1 + O
DOA	:	05/11/03
DOD	:	10/11/03

Presenting Complaint

She presented with complaint of failure to conceive for three years.

History of Presenting Illness

She was admitted through gynaecology out-patient clinic. She presented with failure to conceive for 3 years despite having regular and frequent unprotected sex with her husband. She had no associated symptoms.

Obstetric and Gynaecologic History

She had her menarche at 14 years. Her periods were regular occurring for 4 days after every 28 days. She experienced mild dysmenorrhoea. She was para 1 + 0 and had not used any contraceptives. Her L.M.P was two weeks prior to admission.

Past Medical History

This was not contributory

Family/Social History

She was a housewife engaging in peasant farming with the husband. She was married to her husband for 5 years. No history of chronic illness.

General Examination.

She was in good general condition, with no pallor, oedema, or jaudice. Vital signs were normal. Respiratory, cardiovascular and central nervous systems were essentially normal. She had no goiter.

Abdominal Examination

Abdomen was scaphoid, no surgical or therapeutic scars. There was no tenderness or organomegally. No ascites.

Pelvic Examination

She had normal external genitalia, cervix was central, long, firm and closed. Uterus was normal size, free adnexae and cul-de- sac.

Investigations Done

1. Pap Smear – Normal cytology
2. Hysterosalpingogram

   Normal Uterine cavity. Both dubes outlined with terminal loculation on both sides
3. ELISA for HIV – Negative
4. Haemogram – Hb 13.0g/dl
   - WBC 7.6 x 10^9/l
   - Platelets adequate
5. Urea/Electrolyte – Na+ 136 – mmol/L
   - K^+ 4.1 mmol/L
   - BUN 4.5 mmol/L
6. Semenalysis – Normal findings

Diagnosis – Secondary Infertility due to tubal factor.

MANAGEMENT

Patient was admitted for open tuboplasty on 06/11/03. The patient was taken to theatre. Under general anaesthesia, vulvovaginal toilet was done, bladder catheterized and the posterior vaginal vault packed with gauze roll to elevate the uterus.
Abdomen was opened through Pfannestul incision. Found were normal uterus and ovaries. Both tubes were kinked by flimsy adhesions with healthy fimbria. The tubes were irrigated with Hartman's solution and the adhesions released with diathermy. Patency of the tubes was confirmed by a probe and further by free peritoneal spill of methylene blue bilaterally introduced through the uterine cavity. The tubes were then thoroughly irrigated with Hartman solution and abdomen closed.
Vaginal pack was removed and anaesthesia reversed successfully. Post – operatively the patient did well on treatment and was discharged through gynaecology out-patient clinic.

DISCUSSION

The patient presented had secondary infertility due to distal tubal blockage. Infertility is usually defined as the failure to conceive after one year of intercourse without contraception. Primary infertility applies to those who have never conceived, while secondary infertility designates those who have conceived at some time in the past. Eighty percent of couples experiencing unprotected intercourse will achieve pregnancy within I year; an additional 10% will achieve pregnancy in the second year (8)

In Kenya, the exact statistics on infertility is not clear, but about 60% of all new gynaecology clinic attendance at the Kenyatta National Hospital by infertility clients (3).It is further estimated that two thirds of the gynaecologic consultation is taken by patients complaining of infertility (4),

The causes of infertility are varied. Globally, the causes are attributable to male factors in 30%, combined male and female factors in 30%, and unknown factors in 10%. In Africa, the female factor's are contributory in about 72% of cases (4,5).

Male factors can broadly be categorized into:-

1. Endocrine disorders
    - Hypothalamic dysfunction (Kallman's Sydrome)
    - Pituitary failure (tumor, surgery)
    - Adrenal hyperplasia
    - Hyperprolactinaemia (drug, tumor) etc
2. Anatomic disorders
    - Obstruction of vas deferens
    - Congenital absence of vas deferens
    - Abnormal ejaculatory system.
4. Abnormal spermatogenesis
5. Abnormal mortility
    - Abscent cilia (Kartageners syndrome)
    - Antibody formation
6. Sexual dysfunction
    - Retrograde ejaculation
    - Impotence
    - Decreased libido

Ovulatory factors include

1. Central defects
   - Chronic hyperandrogenic anovulation
   - Hyperprolactinemia (tumor)
   - Hypothalamic insufficiency.
   - Pituitary insufficienty
2. Peripheral defects
   - Gonadal dysgenesis
   - Premature ovarian failure
   - Ovarian tumour
   - Ovarian resistance
3. Metabolic factors
   - Thyroid disease
   - Liver disease
   - Obesity etc

Pelvic factors are:-

1. Infections
   - Pelvic inflammatory disease (PiD)
   - Uterine adhesions (Asherman's syndrome)
   - Endometriosis
   - Structural abnormalities
   - Myomas
   - Mullerian duct abnormalities

Others are immunologic incompatibility like sperm immobilizing and agglutinating antibodies.

In Kenya, studies have shown that 73% of female patients with infertility have tubal occlusion secondary to pelvic inflammatory disease (PiD). The micro-organisms concerned could be chlamydia trachomatis, N.gonorrhoea, E.coli etc.

Although infertility involves the loss of the denial of expectations, it defies categorization as an illness. There are few symptoms and definitive tests. A thorough clinical history and physical examination of the couple is important in arriving at a diagnosis.

Male factors are evaluated by semen analysis and post-coital examination. Female factors are evaluated by doing hormonal profile for LH, FSH, prolactin, serum progesterone, thyroid function tests; basal body temperature determination, endometrial biopsy, hysterosalpingogram (HSG), diagnostic laparascopy, hysteroscopy, hysterogram. Post-coital mucus test done 1 –2 days before ovulation evaluates cervical factors. Antibody testing is done for immunologic factors (2,6,7).
Treatment of infertility is cause specific where applicable. The ultimate therapy for male factor infertility as shown by unfavourable sperm parameters, a negative sperm penetration assay, or both, is in vitro fertilization or gamete intra-fallopian transfer GIFT (8).
In offering treatment to induce ovulation, the premise that normal fertility should result from the correction of the an ovulation implies pregnancy should occur with the first 6 cycles for the majority of patients and within one year for upto 80%.
Ovulation can be induced by using clomiphene citrate, hum chorionic gonadotrophin (HCG), human menopausal gonadotrophin (HMG), pulsatile gonadotrophin release hormone (GNRH) or when appropriate by reducing serum prolactin levels by using bromocriptine (1,2,6)
Tubal blockage may be corrected by surgery although the results may be disappointing if the tubal ciliary action is irretrievably damaged. The most successful tubal surgery is salpingolysis in case of adhesions. Other forms of tubal surgery are salpingostomy, tubal anastomosis and reimplanation fimbrioplasty. Tubal surgery can be performed by either laparascopy or open laparatomy (6,7).
If reconstructive surgery fails or is not feasible in vitro fertilization and embryo transfer can be undertaken. If all else fails adoption or surrogate motherhood offer alternative options.
Since majority of our patients have tubal occlusion as sequale of infection prevention by health education and prompt treatment of STI should be our goal.

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GYNAECOLOGY CASE 11

WOUND DEHISCENCE –SECONDARY SUTURING

Name	:	P.W.
Age	:	52
IP No	:	0685866
DOA	:	03/01/01
DOD	:	20/01/01

Presenting Complaint

She complained of pain and discharge at incision site.

History of presenting complaint

The patient had undergone total abdominal hysterectomy (TAH) 6 days previously for symptomatic uterine fibroids. On the 5th day post-operatively she noticed serosanguinous discharge from the would that was wetting the dressing. She had no vaginal bleeding.

General examination

She was in fair general condition, not pale, not jaundiced, no oedema. T-37.3^{o}c: BP.10/85mmttg: PR-88/min; RR-22/min.

Systemic examination was essentially normal.

Abdominal Examination

Abdomen was not distended and was moving with respiration. The dressing was blood stained. Nylon stitches were in-situ. Abdomen was tender along the incision. Upon removal of the stitches there was found to be would disruption involving the rectus sheath. There was no evisceration.

Vaginal Examination

She had normal external genitilia, no bleeding and the vaginal vault was intact.

Diagnosis

Complete would dehiscence.

Management

The patient was prepared for secondary suturing of the would under general anaesthesia. Blood was taken for:

1. Grouping and cross matching – 1 unit
2. PCV – 29.2%
3. U/E/C – Na+ 138
   K+ 4.2
   BUN 4.4
   } mmol/L

In theatre, patient was put under anaesthesia, routinely catheterized and abdomen cleaned and draped. The remaining stitches were removed up to the rectus sheath. The peritoneal layer margins were well apposed with no gut herniation. The margins of the reatus sheath were identified. The fascia edges were freshened using a scoop and knife for the skin. Mass closure of the fascia was done with looped n^{o}1 nylon suture. The skin was closed n^{o}1 nylon suture for retention for ten days. Anaesthesia was reversed uneventfully.

She recuperated well post-operatively and was discharged home on the 10th day after removal of stitches. She was scheduled for review in the gynaecology clinic.

DISCUSSION

Would disruption, dehiscence, or 'burst abdomen' refers to separation of the wound involving the fascial layer. It is incomplete or partial of would dehiscence if the separation does not involve the rectus sheath. If the rectus sheath is involved, then the dehiscence is considered complete. Evisceration or burst abdomen occurs if the intestines protrude through the would and this constitute a gynaecologic emergency (3).

The incidence of would dehiscence in the USA is about 1 in 300 operations for caesarean section (1).

Aetiological factors are multi faceted and include (2)

1. Infections
2. Surgical technique
3. Inherent tissue strength
4. Mechanical factors

Most instances of tissue dehiscence develop following treatment for post-caesarean metritis.

Midline incisions are more prone to disruption than transverse ones. Suturing should ensure hemostatis to avoid hematoma formation that lead to separation of edges. The suturing should be loose with secure knots as compared to tight strangulating knots that cause ischaemia to the would margins (4).

Factors influencing inherent tissue strength are malnutrition, anaemia, systemic diseases like diabetes, mellitus, use of corticosteroids and old age. Mechanical factors are obesity, cough, abdominal distension, wretching. Most disruptions do not manifest until about the fifth post operative day, at which time there is a serosanguinous discharge.

Fascial dehiscence is a serious complication. Treatment includes secondary closure of the incision in the operating room with adequate anaesthesia. Surgical debridement is carried out first, followed by fascial or myofascial closure (1,3)

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GYNAECOLOGY CASE 12

ASHERMAN SYNDROME

Name	:	A.W	DIAGNOSIS:		Asherman Syndrome
Age	:	25 Yrs	DOA		14/04/02
IpNo	:	0824950	DOD	:	17/04/02
Parity	:	1 + O			

Presenting Complaints

She presented with lack of menses for four years

History of Presenting Illness

She had not had menses since her last delivery 4 years earlier. She had a spontaneous vertex delivery in a private clinic. Three weeks into puerperium she developed severe vaginal bleeding and had uterine evacuation under general anaesthesia. Thereafter she stopped bleeding and breast fed for about one and a half years. She had not used any contraceptives.

Obstetric and Gynaecologic History

She was a para 1 + 0, last delivery 4 years ago. Menarche was at 14 year and had regular cycles of 3 – 4 days after 30 days.

Past Medical History

Not significant

Family Social History

She was a married business woman. She neither took alcohol or smoked cigarettes. No history of chronic illness.

Systemic Enquiry

This was not contributory

General Examination

She was in good general condition, not pale, no oedema, vital signs were BP 110/60mmHg, Pr 80/min, RR 20/min. Respiratory, cardiovascular and central nervous systems were normal.

Abdominal Examination

Abdomen was scaphoid, no tenderness, no organomegally.

Pelvic Examination

She had normal external genitalia, cervix was long, firm, closed, adnexae and POD were free. Uterus was normal in size. No blood on examination fingers.

Investigations Done

1. Haemoglobin 14.5g/dl
2. Urea Electrolyte Urea 4.8 – mmol/L
   Na+ 144 – mmol/L
   K+ 4.7 - mmol/L
   Creatinine 72 Umol/L
4. HIV – Negative
5. HSG – Contracted Uterus not distensible under pressure. Contrast reflux into vaginal fornices. Fallopian tubes not demonstrable.
5. Hormonal Profile
   Prolactin 17.5 ng/ml (8.39 – 20.15)
   LH 7.9 mlu/ml (5 – 20, Surge 40 – 200)
   FSH 13.3 mlu/ml (<20, Midcycle <40).
6. Pap Smear – Normal cytology
   Diagnosis – Asherman Syndrome

Management

She was counseled on management and admitted for adhesiolysis under anaesthesia. In theatre the cervix was dilated upto Hegar dilation size 8. Adhehiolysis was done using metal curettes gently starting with blunt then short curettage. The uterus was then sounded and an intra-uterine contraceptive device (Cu 380 A) inserted to maintain uterine patency. Post operatively she was stable and later discharged home on conjugated estrogen (Premarin) 0.625mg to be followed up in the gynaecology outpatient clinic.

DISCUSSION

The patient presented had Asherman Syndrome diagnosed by hysterosalpingo-gram (HSG) and treated by dilatation and adhesiolysis, intrauterine contraceptive device and high dose estrogen therapy.

Uterine synechiae (Asherman syndrome) are caused by destruction of large areas of endometrum by curettage. Other causes are severe endometritis, endometrial tuberculosis, myomectomy and caesarean section (1,2)

Diagnosis can be made by clinical history and exclusion of other causes of amenorrhoea, recurrent abortions, or infertility (2).

Diagnostic investigations include hysterosalpingogram that shows characteristic multiple filling defects, but the most accurate and direct diagnosis is made by hysteroscopy.

Pelvic ultrasound may show the absence of a normal endometrial stripe and may be confirmed by the absence of withdrawal bleeding after administration of estrogen and then progestin after several weeks. (3)

Recommended treatment is lysis of the adhesions via hysteroscopy and placement of an intrauterine contraceptive device to prevent recurrence. A balloon catheter may be put in place of IUCD. Continuous high dose oestrogen therapy is also recommended by some practitioners for 60 – 90 days (2,4)

Prognisis is poor with only 40% achieving pregnancy but abortions are decreased from 80 to 15%. Caution should therefore always be exercised when curettage is done or management reconsidered in case of endometritis (5).

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GYNAECOLOGY CASE 13

PELVIC ABSCESS – LAPARATOMY

Name	:	N.W.
Age	:	21 yrs
I.P. No:		0884671
Parity	:	0+1
DOA	:	08/05/03
DOD	:	17/05/03

Presenting Complaint

Patient presented with lower abdominal pain, foul smelling vaginal discharge and occasional vomiting for one week.

History of Presenting Complaint

The symptoms were of insidious onset following a manual vacuum aspiration of an incomplete abortion at a private clinic. She had completed a course of antibiotics. The abortion was spontaneous 3 weeks before the current symptoms. She had no dysuria or frequency.

Obstetric and Gynaecologic History

She had her menarche at 15 years and her menstrual cycle was regular, bleeding for 4 days after every 28 days. She was uncertain of her last menstrual period but had never used contraceptives.

Post Medical History

Non-revealing

Family and Social History

She was a housewife, peasant farmers. She did not smoke or take alcohol. There was no family history of chronic illness.

Physical Examination

She was sick looking, febrile, not pale, no jaundice or oedema, T-37.6°c, BP 110/60mmttg, PR 86/min, RR-22/min. respiratory, cardiovascular and central nervous systems were essentially normal.

Abdominal Examination

No surgical scars, no distension. There was suprapubic tenderness and guarding on deep palpation. There was no hepatosphenomegally.

Pelvic Examination

She had normal external genitalia, but there was dirty yellowish foul smelling vaginal discharge. The cervix was central, long firm, closed. Adnexae were free but poach of Douglas was full, cervical excitation test was positive.

Diagnosis

Post-abortal pelvic abscess

Management

Patient was admitted for emergency laparatomy and she gave informed written consent. Blood was taken for:

1. Blood grouping and cross matching
2. Haemogram – Hb 12.1g/dl
   - WBC 10x10%
3. Ureal Electrolytes - Na^+ 136
   - K^+ 4.5
   - BUN 4.1

   } mmol/h

Abdominal pelvic scan showed features of pelvic abscess.

She was put on intravenous fluids and intravenous crystapen 2mu 6hrly and flagyl 500mg 8hrly for 1 week.

She was premedicated with 1m Atropine 0.6mg stab ½ hr before the operation. In theatre the abdomen was opened through a sub umbilical midline incision.

About 600ml of foul smelling pus was found in the pelvic cavity. The uterus was normal without perforation but the tubes were grossly inflamed. A sample of pus was taken for microscopy, culture and sensitivity. The abscess was drained and peritoneal toilet done with rifocin. A corrugated drain was left insitu and mass closure of abdomen done. Anaesthesia was reversed successfully.

Post operatively the patient did well on treatment; the drain was removed after 24hrs. The culture did not grow any organisms. She was scheduled for follow up in the gynaecology clinic after 2 weeks.

DISCUSSION

Pelvic abscess is a collection of pus confined to the pelvic structures. The sites involved include the tube alone, the tube and the ovary i.e. tubo-ovarian, broad ligament, or cul-de-sac. A privet formation may be in more than one anatomical site due to the infection being bilateral in many cases (5). The incidence of pelvic abscess is variable depending on prevalence of predisposing factors. Most patients are 20-40 years of age. Predisposing factors include pelvic inflammatory diseases (PID), post abortal sepsis puerperal sepsis, sexually transmitted disease (STD), presence of foreign bodies like intrauterine contraceptive device, and procedures like dilation and curettage and hysterosalpingogram. In Kenyatta National Hospital about 40% of patient with pelvic abscess report to have had PID (3) while 18.2% of patients had abortions (2)

The causative organisms are the bacteria commonly found in the genital tract (8) Among the aerobes are streptococcal, escherichia and Krebsiella species. The anaerobes are mainly bacteroides species. Gonococcal and chlamydia species are common causes of pelvic infections but are rarely isolated in pelvic abscess. Atypical organisms are more and more being isolated in immunocompromised patients (1,2)

the genital tract. Spread is along the tissue planer, the lymphatic, and the venous system.

Diagnosis of pelvic abscess is mainly clinical. An abscess should be suspected whenever symptoms persist or develop during treatment for PID, post abortal or puerperal sepsis or after gynaecological surgery or procedures.

Symptoms include lower abdominal pain, fever, nausea, vomiting, general malaise, vaginal discharge, dysuria and frequency in maturation. Painful defecation may occur if the abscess is in the cul-de-sac (4,0). Signs include fever, tachycardia, dehydration, pallor, jaundice, boggy adnexae and pouch of Douglas. Laboratory findings may be of little value with total white cell count varying from leukopenia to leucocytosis. Pyuria without bacteruria may also be present (5,7). Other diagnostic tools include plain abdominal x-ray, pelvic ultrasound scan, CT scan and magnetic resonance imaging (MRI) and laparascopy (3,4,7)

Management involves initial resuscitatory measures of fluid and electrolyte replacement. The patient should be started on analgesics and broad-spectrum antibiotics. In some centers, conservative medical approach is practiced and surgery reserved for non-resolving or recurrent abscesses.

Surgery involves drainage of the abscess per cutaneous, by corpotomy or by laparatomty. 75-84% of abscesses are adequately drained percutaneously or by corpotomy. Subtotal or total hysterectomy with bilateral salpingophorectomy and lyses of adhesions offers the best care subject to age, parity and degree of involvement of the reproductive organs and desire of future fertility (5,6,7). Complications of pelvic abscess include septicaemia, septic shock, renal failure, thromboembolism, and wound sepsis. Others are infertility due to tubal factor ectopic pregnancy, intestinal obstructions, chronic pain and dyspareunia (1,4,7).

Prevention entails prompt and appropriate treatment of STI's, contraception against unwanted pregnancies, health education and asceptic deliveries and gynaecological procedures.

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GYNAECOLOGY CASE 14

BARTHOLINS ABSCESS – MARSUPIALIZATION

NAME: M:G.M IP NO: 0667162

AGE: 32 DOA: 30/06/03

PARITY: 1 & 0 DOD: 02/07/03

Presenting Complaints

The patient was admitted with a one-week history of progressively enlarging, very painful genital swelling. The swelling was neither ulcerated nor bleeding. She had difficulties in walking and sitting. There was no associated history of P.V discharge or dysmia.

Obstetric and Gynaecological History

She was a pare 1 + 0, last delivery in November 2000, last menstrual period was in late May 2003, she was on Depo-Provera since delivery up to four months prior to admission after which she started using microgynon to date. Menarche was at 16 years and has menstrual flow of 3 days and a regular cycle length of 28^{th} days. No dysmenorrhoea.

Past – medical History

No history of sexually transmitted illness or any other illness.

Family and Social History

She is a married sales lady who does not smoke or take alcohol. The husband is a shopkeeper. The father is diabetic.

Physical examination

She was in pain, afebrile not in pale no jaundice, no lymphademopathy, no oedema after 30 years 120/70 mmHg, pulse was 90/min, good volume, regular and the respiratory rate was 18/min. Systemic examination was essentially normal.

Abdominal examination

The abdomen was scaphoid, moving well with respiration, no surgical or therapeutic marks. There was no organomegally or tenderness elicited.

Varginal examination

There was a large swelling on the left labia. The swelling was inflamed, fluctuant and tender. Its size was about 6X3 cm limited by tenderness.

Diagnosis

Left Bartholin's abscess

Management

The patient was scheduled for marsupialisation in theatre under general anaesthesia, patient was counseled along the line of management and she gave an informed consent.

Investigation done

1. P.C.V – 32 %
2. Urea and electrolytes

   Na^+ 131 mmol/L

   K^+ 4.1 mmol/L

   Urea 6.7 mmol/L

   Creatinine 120 Umol/L

Procedure

After pre-medication with 1.m atropine sulphate 0.6 mg stat ½ hr before the operation the patient was put under general anaesthesia i.e. 1.v thioperitone sodium and maintained on nitrous oxide and oxygen by mask. In lithotomy position, vulvovaginal toilet was done with savlon and draped. Examination under anaesthesia confirmed the bartholins abscess while the cervix, uterus, adnexae and pounch of Douglas were normal.

An incision was made at the mucocutaneous junction and about 80 ml of pus drained. A pus snab was taken for culture and sensitivity. The pus pockets were then broken and site cleaned with normal saline. The edges were averted using chronic catgut suture No 2-0. A gauze soaked in betadine was packed into the cavity. The patient was repositioned, anaesthesia reversed and taken back to the wards after recovery.

Post – operative Management

The patient was monitored ½ hourly until she was full awake then 4 hourly for the next six hours. She was put on a regimen of doxycycline 100mg Bid, flagyl 400 mg TID and paracetamol I g TID for one week. The gauze was removed after 24 hrs and patient advised on sitz baths twice a day for one week at home. She was also to be followed up in the gynaecology outpatient clinic. The culture report showed no growth.

DISCUSSION

The patient presented is a 32 yr old para 1 + 0 who had Bartholins abscess for the first time. A Bartholins abscess forms after an infection of the bartholin cyst. In turn a Bartholin duct drains the bartholins gland. Bartholin glands are also referred to as the greater vestibular glands, they are paired and homologus to the Cowper's glandsin the male (12). They are racemorse glands which are situated in the posterolateral aspect of the vaginal orifice beneath the vestibular bulbs. The gland is oval in shape and approximately the size of a pea although it is usually impalpable unless hardened or enlarged by disease. The duct is 1.25 – 2 cm in length, runs downwards and inwards to open at the introitus below the hymen but above the attachment of the posterior end of labium visible but when the gland and duct are infected, may be indicated by a small red macule (1,3,11,12).

Its secretions are colour-less and mucoid with a characteristic odour secreted mainly in response to sexual excitement and acts as a lubricant. The activity of the gland continues albeit limited after menopause.

Occurrence of bartholins abscess is fairly common and accounts for 1.7% of all emergency gynaecological admissions in Kenyatta National Hospital (8). In a study of Bartholins abscess in KNH in 1981 Mumia found that 82.7 % of the patients with that condition were aged between 12 – 29 yrs suggesting that it could be associated with high sexual activity (8). A clue to diagnosis is a painful vulva swelling causing difficulties in walking and sitting (6,8,12). Our patient had this classical presentation.

Infective organisms associated with bartholinitis and bartholin's abscess include E. Coli, Staphyclococci, Streptococcus fecalis, Neisseria gonorrhoea, Trichomonas vaginalis and other pyogenic bacteria (7). Oliphat and Anderson (4) found that staphylococci, E. Coli and streptococci accounted for 80% while N. gonorrhoea accounted for only 3.5% to up to 29.4% of the cases of bartholins abscess no organisms are isolated (7). Non-infective causes of bartholin duct obstruction include epithelial metaplasia, accumulation of insipated secretions, congenital narrowing or latrogenic following mediolateral episiotomy (1,4). While the treatment of bartholinitis is bed rest, local thermotherapy (sitz bath) analgesics and antibiotics, the treatment of bartholins cyst and abscess is operative. The operative procedures include incision and drainage, aspiration, marsupialization, complete excision and more recently window operation and laser surgery (4,5,10). Marsupialization as

chosen for our patient is easy and quick to perform and aims at re-establishing ductal patency. Window operation and laser vaporisation have been hailed as better alternatives with fewer operative complications such as secondary fibrosis and dyspareunia which may be associated with marsupialization (2,9).

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GYNAECOLOGY CASE 15

SEXUAL ASSAULT – EXAMINATION UNDER ANAETHESIA, PROPHYLACTIC TREATMENT.

Name : C.N

Age : 17 yrs

IP No : 0863909

Parity : 0 + 0

DoA : 13/02/03

DoD : 15/02/03

Diagnosis: Sexual Assault

Presenting Complaints

The patient alleged to have been sexually assaulted the previous evening.

History of Presenting Complaints

The patient was said to have been forced into penetrative vaginal sexual intercourse by a neighbour who was single. The encounter was brief as it was interrupted by movement outside. There was no excessive violence. Had bathed and changed clothes.

Obstetric and Gynaecological History

She was a para 0 + 0 who had menarche at 14 years with established menstrual cycle of 4 days after every 21 days. She was uncertain of her last menstrual periods but expected her menses within the next few days. Her last sexual contact was several months earlier.

Past medical History

This was not significant.

Family and Social History

She was a primary school drop out living in one of the city slums with relatives. No family history of chronic illness. She did not take alcohol or smoke cigarettes.

Physical Examination

She was a young lady in fair general condition, well kept but looked shy and scared. Vital signs were within normal range. She had no physical injuries.

Respiratory, cardiovascular and central nervous systems were essentially normal.

Physical Examination

There was no organomegally or any tenderness.

Vaginal Examination

She declined the examination

Diagnosis

Alleged sexual assault

Management

The position was made clear to her and next of kin of the need to do further pelvic under anaesthesia and laboratory investigations and institute prophylactic treatment. She was put on microgynon 2 tablets stat and 2 tablets after 12 hours;

Antibiotics – Noroxin, doxycycline and metronidazole and antiretroviral agents i.e Combirir - BID x 28 days and Nevirapine 200mg Od x 28 days.

Blood was taken for haemogram, Urea and Electrolytes, VDRL, HiV, Hepatitis B She was prepared examination under anaesthesia and next of kin gave written consent.

At the examination under anaesthesia the findings were normal i.e no dried up semen, intact perineum, intact vulva and vagina, normal cervix. High vaginal swab (HVS) was taken for microscopy, culture and sensitivity. While in the ward results were:-

1. Haemogram – Normal
2. Urea, electrolytes – Normal
3. VDRL – Negative
4. HIV – Negative
5. HVS – No growth, no spermatozoa

She was discharged through the patient support centre with a consultation to the psychiatrist.

DISCUSSION

A 17 year old para 0 + 0 who alleged to have been sexually assaulted is presented. Sexual assault (rape) is a violent crime directed predominantly against women. Legal statutes may categorize sexual assault as forcible, statutory, attempted carnal knowledge of a juvenile, or a crime against nature. Legal codes may categorize rape according to the anatomic site of assault (e.g oral, anal, or vaginal) and according to the degree of penetration (e.g none, slight, or full). (3). The victim presented had full vaginal penetration.

The incidence of rape is difficult to ascertain due to underreporting (2,3). Most of the victims fear reporting the crime due to the possibility of ensuing stigmatization and this is worsened by the way they are handled by relatives, friends, the police and the health workers (1)

The psychological effect of rape on the victim cannot be predicted according to the degree of penetration or the anatomic site of the assault. The distinctions in site and extent of sexual assault do, however, carry medical importance, since the risk of injury, impregnation or acquisition of sexually transmitted infections (STI) will vary according to the specifics of the assault. Therefore an accurate detailed history of the assault is essential for proper diagnosis, documentation and treatment (3).

There are three basic types of rape episodes viz:-

Power Rape

This is the type most commonly reported. The assailant is generally an immature male often under the age 18. The assault is premeditated and the motivation is to demonstrate power through sexual assault rather than through overt injury of the victim. The event does not fulfill the power rapist's expectations and he will usually repeat the crime in an effort to ameliorate his feelings of inadequacy and powerlessness.

Anger rape

The psychologic objective is humiliation and degradation of the victim motivated by anger and need to obtain revenge.

Sadistic rape

These assaults are premeditated and frequently involve ritualized torture or mutilation of the victim, especially of the genital region. The victim's primary response during the assault is that of survival and most victims will relate that they were afraid their

assailant might kill them. This explains the usually limited resistance that the victim offers as well as her feeling of culpability after the episode, when she berates herself for not fighting the assailant off.

Physical examination and evaluation entails obtaining accurate record of the details of the assault preferably from the patient. Detailed gynaecologic history should be obtained in order to fully evaluate the risks of impregnation and acquisition of STIs. Interval activities that might affect physical findings should be documented e.g whether the patient has eaten, drunk, bathed, douched, voided or defecated. The location, nature and extent of external trauma echymoses, abrasions, lacerations, bite marks, rope burns) should be documented. Specimens for laboratory examination should be obtained from the vulva, vagina and the cervix – including a pap smear. Blood is drawn for serological tests i.e VDRL, HIV and hepatitis B. (4)

Treatment of physical injuries sustained at the time of assault should be initiated immediately, prophylactic medical treatment ,may be indicated for prevention of pregnancy or sexually transmitted infections (5).

Prophylaxis against sexually transmitted infections is provided by use of penicillins, or tetracycline, and metronidazole. Antiretrovirals are given for one month as prophylaxis against HIV infection. Prevention of pregnancy as a result of rape is crucial. Hormonal pregnancy prophylaxis may be used within 72 hours of the assault 95 – 98 % effective. A combination of ethinyl estradiol, 50 ug plus norgestrel 0.5 ug (oral) 2 tablets stat then 2 tablets after 12 hrs is preferred because it has the highest efficacy and a comparatively low rate of side effects.

Psychological support including family members is of paramount importance and forms the basis of follow-up at the patient support centre.

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GYNAECOLOGY LONG COMMENTARY

THE MENSTRUAL CYCLE AND DYSMENORRHOEA IN ADOLESCENT GIRLS IN A SECONDARY SCHOOL IN KIAMBU DISTRICT

ABSTRACT

OBJECTIVE

To assess menstrual indices and factors related to dysmenorrhoea among adolescent schoolgirls.

Design

This was a descriptive study.

Setting

The study was carried out in a mixed secondary school in Kiambu District.

Subjects

The study subjects were 306 adolescent schoolgirls who had attained menarche and gave consent for the study.

Results

The mean age at menarche was 14 years with a range of 11-16 years. The vast majority of the girls had normal duration of menstruation of 3-7 days(85.9%) and a normal cycle length of 21-35 days (99.7%). The mean cycle length for the study group was 27 days. The prevalence of dysmenorrhoea of any grade was 65.7%.

There was no significant association between the mean menarche age and severity of dysmenorrhoea (p-value=0.08) . However, the severity of dysmenorrhoea was by the duration of menstrual flow i.e. the longer the duration of menstrual flow the more severe the dsymenorrhoea (p-value<0.05).

Also, the severity of dysmenorrhoea was significantly influenced by the level of physical activity ($X2 = 1.22$; P-value<0.001).

Those who had regular physical activity had lower grade of dysmenorrhoea. There was a 10.5% absenteeism from class for 1-2 day s and the vegetative symptoms reported included mood changes, back pain, headache, breast pain, and nausea/vomiting.

CONCLUSION

Although majority of the study subjects had normal menstrual indices, dysmenorrhoea was prevalent.

Dysmenorrhoea was ameliorated by physical activity and worsened by longer duration of menstruation.

INTRODUCTION AND LITERATURE REVIEW

Puberty is the period of life during which secondary sexual development occurs; the sex organs mature and reproductive activity is attained (1). The main physical changes that occur during puberty include the adolescent growth spurt, increase in body fat with its characteristic female distribution, breast development, pubic and axillary hair development and the occurrence of menarche. Onset of menarche is usually a later event (2,3).

Menstruation is a periodic discharge of the shed uterine lining. It is an outward sign of the activities of the hypothalamo-pituitary and ovarian hormones on the endometrium. There are other cyclic changes in the uterine tubes, in myometrial contractions, cervical secretions, vaginal epithelium and the breasts due to the same hormones. Menstruation is therefore a manifestation of an abortive cycle and the commencement of another (3,4). Once menstruation is fully established, the periodicity becomes regular. The cycle is on the average 28 days but a range of 21-35 days is regarded as normal. Each menstrual period lasts 4-5 days on the average but the duration of flow and the volume of blood loss varies with each individual but usually this is between 20-80 ml on the average per cycle. Studies done in Nigeria revealed that 80.8% had menstrual cycles between 25 and 35 days and the duration of menstrual bleeding was 4.5 +/- 0.8 days (5).

As with the other events of puberty great variability has been shown to occur as to the time of occurrence of menarche in different countries and even in different regions of the same country (4,6). It ranges from 10 to 18 years with peak occurrence for most societies being 12-15 years. In developed countries, Dewhurst gave the age at menarche as between 10 and 16 years. In the same populations menarche before 8 years is considered a sign of precocious puberty and after 18years as of delayed puberty (3). Higher average ages at menarche have been shown in less developed countries. In Ethiopia a figure of 13.7 years was obtained as compared to one of 13.95 +/- 1.7 years in Nigeria found around the same time (7,8).

In another study done in Nigeria mean and median age of menarche were 13.4+/-1.4 and 13.5 years respectively (9). In Baghdad figures ranging from 13.59 +/- 0.062 to 13.96 +/- 0.049 years were obtained depending on socio-economic status (10). In Kenya varying figures have been quoted depending on locality. In Kitui Bwibo et al,

obtained a figure of 15.3 +/- 2.2 years while Worthman obtained a mean age of 15.9 years, in Ngecha , Kiambu District in the same year (6,11). Ngayu et al conducted a cross-sectional survey in Machakos District where the mean age at menarche was found to be 14.3 years (5). A study of menarche in African secondary school girls in Kenya by Rogo found a mean age of 13+/-2.69 years (12). In Kakamega District, Kenya, Muroki found the mean age at menarche among the Luhya school girls to be 13.9 +/- 1.3 years from high income families and 14.4 +/-1.1 years among those from low income families (13).

FACTORS ASSOCIATED WITH AGE AT MENARCHE

Menarche has been found to be influenced by factors such as race, genetic component, nutritional status, environmental and geographical positions and socio-economic status (4,6,13). However, the socio-economic status of the particular population is the most important since its effect is mediated through the quality of nutrition it imposes on the population in question. In a population with a high socio-economic status and hence high nutritional status, all the aspects of maturation in children in the population will be accelerated. That this is so is shown by the fact that advanced skeletal maturity goes hand in hand with advanced sexual maturity. Indeed, skeletal maturity has been shown to be a better predictor of age at menarche than chronological age.

According to Dewhurst, menarche occurs between bone ages 12.5' and 14.5' years but between 13 and 14 years in the majority irrespective of chronological age (1). Hereditary factor play relatively a small role in the determination of age at menarche contributing only 10-15 % of the variance (14). Diseases affect this age only in so far as they affect the individual status except for deafness and blindness whose effect of advancement of this age is possibly mediated through a reduction of sensory input into the brain.

A secular trend in the age at menarche whereby it fall with the passage of time has been shown in those populations in whom studies on this age have been repeated over the years. During the past 100 years, the mean age at menarche has been falling at the rate of four months per decade in Europe, but it has been observed that at present, the fall seems to be leveling off (1,15). It is not clear whether this fall is just a result of

passage of time or of improving socio-economic status which has been observed in all the societies in whom it has been observed.

IMPORTANCE OF AGE AT MENARCHE

The variation of the age at which pubertal events occur in different populations and with time means that figures obtained in a particular population cannot be applied to another population or the same population in a different generation. Studies to define the age at which these occur should be done from time to time, even in the same population. Knowledge of the normal limits of age of occurrence of these events is important in evaluation of cases of precocious or delayed puberty. Secondly, menarche heralds the beginning of reproductive age and although some menstrual cycles following the menarche are unovulatory for 1-2 years, the infertility this offers is relative rather than absolute. In any case, it is difficult to know how long these infertile cycles will last. Infact, rare cases of conception before menarche have been reported (1). These factors are important in relationship to adolescent pregnancies. Knowledge of the lower limit of the age at menarche helps in the determination of when such active measures as sex education should begin for all the adolescents and contraceptives provided to the sexually active to prevent such pregnancies.

DYSMENORRHOEA

Menstruation should be a painless, cyclic, physiologic process but dysmenorrhoea i.e painful menstruation, has been found to be the most common gynaecologic complaint among teenagers (16,17,18). Dysmenorrhoea is normally associated with ovulatory cycles and affects about half of all female adolescents (16,19). Over the last 20-30 years the number of girls complaining of incapacitating dysmenorrhoea has decreased considerably and this may reflect a more sensible outlook and upbringing of the modern generation (2). However, not less than 50% of women are said to experience some discomfort in relation to menstruation and 5-10% of women in late teen and early twenties are incapacitated for several hours each month with menstrual pain (2). Dysmenorrhoea is classified into primary and secondary which is important for effective management.

PRIMARY DYSMENORRHOEA.

This is the most prevalent type and no obvious macroscopic pathology can be found (2,3,17,20). In most cases primary dysmenorrhoea begins within a year or two of menarche. It is characterised by spasmodic, cramping or labour- like pain that occurs primarily in the suprapubic region. Back pain and pain radiating to the inner aspect of the thigh may also accompany the suprapubic pain in many patients (2,18). Other symptoms include nausea, vomiting and or anorexia, diarhoea, headache, dizziness, tiredness and nervousness (4). The first day of menstruation is usually the worst in terms of severity of symptoms and some women may entirely be incapacitated. Primary dysmenorrhoea usually improves with advancing age although this is not necessarily true for all cases. Relief from dsymenorrhoea may occur from childbirth in some cases (2,4,19,20).

SECONDARY DYSMENORRHOEA

This is pain with menstruation noted in the presence of other pelvic diseases including endometriosis, intramural or endomucinous myomas, adenomyosis, intra-uterine contraceptive device (IUCD) endometrial polyps, pelvic inflammatory disease (PID) or anything causing obstructed outflow (4).

The history may be useful in making a diagnosis. A history of pelvic inflammatory disease, irregular menstrual cycles, menorrhagia, use of an intra-uterine contraceptive device or infertility problems is suggestive of secondary dysmenorrhoea. A pelvic examination that includes a rectovaginal examination is more likely to be revealing for the causes of secondary dysmenorrhoea (2,4,18,19,20).

AETIOLOGY OF DYSMENORRHEA

Initially, behavioral and psychological factors were believed to be the causative factors of primary dysmenorrhoea but it is now generally known that such factors only contribute to the reactive component of the pain and are not the initial cause of the pain (2,16,18). Primary dysmenorrhoea occurs only in the ovulatory cycles indicating that adequate uterine exposure to oestrogens followed by progesterones is necessary for the bio-medical derangement to exert their pathological effects (2,18,21). This is the explanation for the lack of symptoms during the first few cycles following menarche which are an ovulatory (2,3,4).

Cervical stenosis secondary to previous cervical trauma or infection causes secondary dysmenorrhoea. The spasmodic suprapubic pain is accepted as being due to exaggerated uterine contractility. The abnormal uterine activity is due to increased prostaglandin production and release by the endometrium during menstruation (16,18,22). According to recent studies, the increased uterine contractility may also be due to increased levels circulating vasopressin during menstruation (21).

FREQUENCY OF DYSMENNORRHOEA

Primary dysmenorrhoea is the most common menstrual disorder occurring in 30 – 50% of young women but an accurate incidence or prevalence of the disorder has never been clearly defined. Estimates vary widely because of the differences in the criteria used for diagnosis of dysmenorrhoea and because most investigations concern only one section of the community.

A study done in Nigeria showed a prevalence of any grade of dysmenorrhoea tobe 71.8%. In Kenya, Muroki showed a figure of 69 % among Luhya girls in Kakamega whereas Rogo et al in a similar study on African secondary school girls showed that 70.4% had moderate to severe pain during menstruation. In a study carried out in Machakos District by Ngayu et al found the prevalence of any grade of dysmenorrhoea to be 80.2% which was not too different from what was found by other studies in Kenya (5).

RATIONALE

This study is aimed at providing data on menstrual indices and factors related to dysmenorrhoea in a population not studied before. Although a few similar studies have been conducted in other populations in Kenya, their results cannot be applied to this population which may be different in terms of socio-economic status from the areas already studied. As noted in various studies, adolescent fertility has been on the increase as evidenced by increased rate of adolescent pregnancies. Adolescent sexuality and family life education should be enriched using locally generated data and thus help adolescent girls cope with their gynaecological problems.

OBJECTIVES

Main Objective

To assess menstrual indices and factors related to dsymenorrhoea among adolescent school girls

Specific Objectives

1. To determine indices of menstruation i.e. age at menarche, duration of menstruation and cycle length.
2. Determine the prevalence and severity of dysmenorrhoea among the study group.
3. Determine association of selected biological factors and the severity of dysmenorrhoea.

METHODOLOGY

Study Design, Area and Population

This was a cross-sectional descriptive study. It was be carried out in a mixed boarding secondary school in Kiambu District. The school was selected due to its high student population of seven streams, four for girls and three for boys. The girl student population was about 700 which was equivalent to three small secondary schools.

Sampling size and Sample method

The participants were drawn from the school girls who fulfilled the inclusion criteria. The students were seated in a hall in no particular order and the sampling procedure involved selecting the respondents systematically in which every second girl was selected until the desired sample size was attained.

The sample size was therefore:-

$$N = \frac{Z^2(1-p)\,p}{D^2}$$

N = Sample size to be determined.

P = Prevalence of 80% of dysmenorrhoea in a previous study.

Z = Standard error from the mean corresponding to 95% confidence interval = 1.96

D = Absolute precision = 5% = 0.05 for 95% confidence interval

$$N = \frac{1.96^2 \times 0.2 \times 0.8}{0.05 \times 0.05} == 288$$

Inclusion Criteria

All adolescent girls who had attained menarche in the group.

Exclusion Criteria

All adolescent girls in the study group who had not attained menarche.

All adolescents who declined to participate in the study.

STUDY PERIOD

This study was conducted and the report made in the months of January, February, March 2004.

DATA COLLECTION.

After approval by the relevant authorities the data was collected by the investigator. The questionnaires were given to the students to complete in the presence of the investigator so that questions arising were dealt with immediately. Time was taken to give a basic outline and nature of the study and show in detail how to complete the questionnaire. Some questions had more than one response. Pain scale for dysmenorrhoea was measured by verbal multi-dimensional scoring system which grades pain as none, mild, moderate and severe and also takes into account the effect on daily activity, systemic symptoms, and analgesics requirements..

Thus:-

Grade 0
- No menstrual pain
- Daily activity unaffected
- No systemic symptoms
- No analgesics required

Grade 1
- Mild pain
- Daily activity seldom affected.
- No systemic symptoms
- Analgesics seldom required

Grade 2
- Moderate pain
- Daily activity affected
- A few systemic symptoms
- Analgesics helpful

Grade 3
- Severe Pain
- Daily activity clearly affected
- Systemic symptoms problematic
- Analgesics hardly effective.

Data Analysis and Management

Completed questionnaires were collected by the investigator for data tallying and analysis. The data was reported using distribution tables and expressed in percentages. Association between variables was examined by means of Chi-square (x^2) analysis and P – value at 0.05 significance level.

Study Limitations

This was a strictly voluntary exercise and the number of respondents may have affected the sampling method and ultimately the sample size.

Recall method was used to complete the questionnaire and hence no control of the correctness of the information given.

ETHICAL CONSIDERATION

Permission to carry out the study was obtained from the District Education Office and the school head after approval of the study by Kenyatta National Hospital Ethical and Research Committee.

CONSENT EXPLANATION

1. **Principal Investigator**

   The investigator is a Master of Medicine (Obstetrics and Gynaecology) student at the University of Nairobi. He is undertaking the course courtesy of the Republic of Kenya.

2. **Human subjects in the Project**

   a. **Number of subjects**

   Total number was 288 adolescent Secondary School girls aged between 12 – 20 years

   b. **Type of Subjects**

   These were adolescent secondary school girls.

   c. **Inclusion Criteria**

   All adolescent secondary school girls who had attained menarche.

   d. **Exclusion Criteria**

   All adolescent secondary school girls who had not attained menarche. All those adolescent secondary school girls who had attained menarche but declined to participate in the study.

   e. **Recruitment Strategy**

   After assembling the subjects, a brief outline and nature of the study was given by the principal investigator. Questionnaires were distributed to the participants systematically until the desired sample size was attained. This was done with the assistance of female teachers and school nurse/matron.

   f. **Subject Approach**

   Recruitment was done by the Principal Investigator and the teachers provided by the school administration.

   g. **Non-coercive contact**

   Subjects were free to decline participation in the study by either not attending the recruitment or not completing the questionnaire. No note was taken of the non-participants.

h. Subject Compensation

No form of physical reward as in gifts, or payment in cash for the study subjects or the assistants.

i. Participation Cost

The study subjects and assistants were not required to make any payments to participate in the study.

j. Study Location

The study took place within the school premises as provided by the school administration.

3. **Risks, Benefits and Adverse Effects**

a. Nature and Degree of Risk

Data collection was by form of questionnaire. Measures had been taken to ensure no embarrassing questions, if any, were intended and invasion of privacy was maintained at an acceptable level. No invasive or non-invasive procedures were employed.

b. Minimization of Risk

Rights and welfare of the minors were protected by the involvement of chaperones in form of female teachers and school nurse/matron.

c. Unknown Conditions

In case of an unknown subject condition being discovered, this was handled in confidential consultations with appropriate experts and authorities.

d. Benefits

The study was to benefit the subjects by creating awareness of their own sexuality and help them cope with their gynaecological problems. In a wider scope, the study will provide locally generated data to enrich adolescent sexuality and family life education.

e. Adverse Research Treatment

Not applicable in this study.

f. Adverse Event Facilities

Not applicable.

g. Financial Responsibilities

None since no physical injuries were caused in this study.

4. <u>Confidentiality of Research Data</u>

a. Direct Identifiers

No direct identifiers were retained.

b. Data Protection

The investigator was under no obligation to disclose the source of information to the general public or the course sponsor but the study outcome can be made reference to for policy making or research.

c. Data Location

A copy of the subjects consent form was retained by the investigator for a period of three months. This was necessary for litigation purposes against allegations of unlawful conduct of the study or violation of subjects rights and welfare.

d. Data Uses

There were no plans of using the study raw data for future studies. However, reference can be made to the outcome of the study.

RESULTS

A total of 306 questionnaires were completed and returned for analysis.

Table 1 – Age Distribution

AGE	FREQUENCY	PERCENT
10 - 14	8	2.6
15 - 19	292	95.4
20 +	6	2.0
Total	306	100.0

Most of the girls were aged between 15-19 years (95.4%). The mean age was 17 years and the age range was 14 – 21 years.

Table 2 – Age at menarche.

Age Group	FREQUENCY	PERCENT
10 - 14	249	81.4
15 and above	57	18.6
Total	306	100.0

Most of the girls attained their menarche aged between 10 – 14 years (81.4%). The mean menarcheal age was 14yrs and the range was 11-16 years.

Table 3 – Duration of Menstruation

Days	Frequency	Percent
<3	21	6.9
3 to 7	263	85.9
>7	22	7.2
Total	306	100.0

Most of the respondents had normal duration of menstruation of 3 – 7days (85.9%) and 6.9% had duration of menstruation less than 3 days and 7.2 % longer than 5 days.

Table 4 – Cycle Length

Days	Frequency	Percent
<21	1	3
21 to 35	305	99.7
Total	306	100.0

Almost all of the girls had normal menstrual cycle length of 21 – 35 days (99.7%). The mean cycle length for the study population was 27 days and the range was 18 – 35 days.

Table 5 – Frequency Distribution and Severity of dysmenorrhoea

	Frequency	Percent
None	105	34.3
Mild	97	31.7
Moderate	83	27.1
Severe	21	6.9
Total	306	100.0

About 2/3 (65.7%) of the study population had mild to severe form of dysmenorrhoea. This was related to certain biological factors as shown below.

Table 6 – Association between certain biological factors and severity of dysmenorrhoea.

Biological Factor	Grade of Dysmenorrhoea			
	0	1	2	3
Mean Age at Menarche (years)	13.7	13.5	13.7	13.2
Mean Duration of Menstrual flow (days)	3.8	4	4.1	4.6
Mean cycle length(days)	27.3	27.5	26.2	26.9

Mean age at menarche was not significantly associated with severity of dsysmenorrhoea. (P-value = 0.077). There was however a significant association between mean duration of menstrual flow and severity of dysmenorrhoea (P-value = 0.02). The severity of dysmenorrhoea increased with increasing duration of menstruation. The severity of dysmenorrhoea was unaffected by the cycle length (P-value = 0.076) and may even seem the longer the cycle length the lower the grade of dsysmenorrhoea and vice versa. (P-value < 0.05 was significant)

Table 7 – Age and Severity of dysmenorrhoea

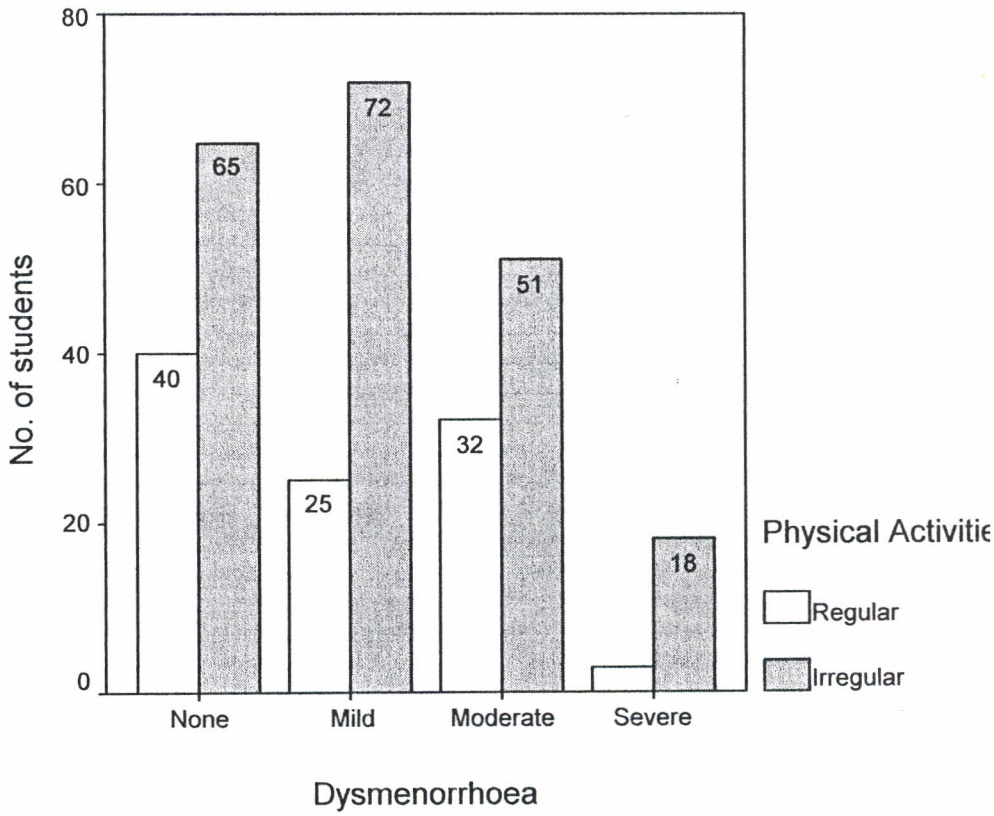
Age (years)	None	Mild	Moderate	Severe	Total
10 - 14	82	81	67	19	249
%	32.9%	32.5%	26.9%	7.6%	100.0%
15 and above	23	16	16	2	57
%	40.4%	28.1%	28.1%	3.5%	100.0%
Total	105	97	83	21	306
	34.3%	31.7%	27.1%	6.9%	100.0%

There was a small difference between age and severity of dysmenorrhoea was not statistically significant (P-value = 0.77)

Table 8 – Association between physical activity and severity of dysmenorrhoea

	Degree of Dysmenorrhoea				
Level of Activity	None	Mild	Moderate	Severe	Total
Regular	40	25	32	3	100
%	40.0%	25.0%	32.0%	3.0%	100.0%
Irregularly	65	72	51	18	206
%	31.6%	35.0%	24.8%	8.7%	100.0%
Total	105	97	83	21	306
	34.3%	31.7%	27.1%	6.9%	100.0%

Further association is demonstrated in the following bar chart.



Chi – square = 1.219

P-value < 0.001

There is a significant difference between those who had regular physical activity and those who had none or irregular physical activity and those who had none or irregular physical activity. Those students who had regular physical activity had lower grade of dysmenorrhoea

Table 9- Frequency distribution of days missed from class due to menstrual pain

Duration in days	Frequency	percent
0	263	85.9
1 to 2	32	10.5
3 to 4	6	2.0
>4	5	1.6
Total	306	100.0

There was 10.5% absenteeism from class for 1-2 days due to dysmenorrhoea.

Table 10- Frequency distribution of symptoms during menstruation.

Symptoms	Frequency	%
Headache	58	13
Nausea/Vomiting	39	9
Breast pain	52	12
Mood changes	177	40
Back pain	120	26

Vegetative symptoms reported included mood changes back pain, headache, breast pain, and nausea/vomiting

Nb/ Some students had more than one symptom.

DISCUSSION

This study was designed to evaluate such menstrual indices as age at menarche, duration of menstrual flow, cycle length, menstrual irregularities and factors related to menstruation such as dysmenorrhoea among adolescent school girls in Kiambu District. The study has shown that the mean menarcheal age was 14 years. This compares well with other studies done in Kenya. Ngayu et al (5) found a figure of 14.3 years in Machakos District; Rogo (12) and others in their study among rural secondary school girls in Kenya showed the mean menarcheal age was 13 $\pm$2.69 years while Muroki (13) in a study of Luhya school girls in Kakamega District found a figure of 14.3 $\pm$1.4 years. Age at menarche has been found to be influenced by factors such as race, genetic component, nutritional status, environmental and geographical positions and socio-economic status of a particular population is the most important since its effect is mediated through the quality of nutrition it imposes on the population in question.

The duration of menstruation as reported by majority of the respondents (85.9%) was normal and fell within 3 – 5 days. The number of respondents who had duration of menstruation shorter than 3 days was almost the same as those who had the duration longer than 5 days i.e. 6.9 % and 7.2% respectively. Unlike menstrual cycle length the duration of menstruation is unlikely to be influenced by environmental factors.

Vast majority of the girls, 99.7%, had normal menstrual cycle length of 21- 35 days. The mean cycle length for the study population was 27 days with a range of 18 – 35 days. The variability of the cycle length depends on the release of gonadotrophin releasing hormone (GNRH) through the cortical center which in turn influences the release of LH and FSH. The follicular phase (10 – 20 days) is more variable than the Inteal phase (11 – 16 days).

The release of GNRH may be influenced by environmental factors and hence the influence of these factors on cycle length. Ngayu et al in their study found that girls who had a tendency to shorter cycle length (< 21 days) were in a mixed day school and those with a tendency to longer cycle length (> 35 days) were in girls only boarding school.

The prevalence of dysmenorrhoea of any grade was in the study population was 65.7%. This compared well with other studies done elsewhere. Rogo (12) found a figure of 70.4% while Muroki (13) found a figure of 69.1% Ngayu et al found a higher figure of 80.2% (5).

Mean age at menarche was not significantly related to seventy of dysmenorrhoea. However, early menarche has been related to an increase in the severity of dysmenorrhoea. (22). There was a significant correlation between the severity of dysmenorrhoea and the duration of menstrual flow. The severity of dysmenorrhoea increased with increasing duration. Similar findings were found by others (5, 22). Psychological factors may contribute to the explanation. It is now evident that endogenous prostaglandius play a crucial and significant role in the development of primary dysmenorrhoea. Increased production of prostaglandius play a crucial and significant role in the development of primary dysmenorrhoea. Increased production of prostaglandins may explain increased severity of dysmenorrhoea in prolonged menses.

Menstrual cycle length did not influence prevalence and severity of dysmenorrhoea. Prevalence and severity of dysmenorrhoea significantly increase with age. This was however not demonstrated in this study. Since dysmenorrhoea is rare with un ovulatory cycles, higher prevalence of dysmenorrhoea with increasing age may be associated with increasing number of girls achieving ovulatory cycles. Increasing prevalence of secondary dysmenorrhoea due to pelvic inflammatory disease with increasing age may be another factor.

Severity of dysmenorrhoea was influenced by physical activity. Those who had regular physical activity had lower grade of dysmenorrhoea. These findings collaborate those by Ngayu et al.

Other studies, however have repeatedly shown the absence of relationship between physical activity and dysmenorrhoea (16). Evidence indicates that exercise only helps relieve stress and elevate mood and on the other hand, stress heightens menstrual discomfort.

There was a 10.5% absenteeism from class for 1-2 days. Yassof of Dawood (18) in his commentary suggested that 10% of women with primary dysmenorrhoea suffer severely enough to render them incapacitated for 1 – 3

days each month, a situation leading to significant absenteeism and consequent economic loss. Else where, dysmenorrhoea has been rated the most common of gynaecologic complaints affecting half of all female adolescents and represents the leading cause of period school absenteeism among that population (16).

Negative symptoms reported were mood changes, back pain, headache, breast pain and nausea/vomiting.

CONCLUSION

1. The mean menarcheal was 14 years
2. Majority of the girls suffered dysmenorrhoea.
3. The severity of dysmenorrhoea was affected by duration of menstruation and physical activity.
4. Prevalence and severity of dsymenorrhoea increase with age during adolescence.
5. Majority of the girls had normal duration of menstruation and cycle length.

RECOMMENDATIONS

1. More attention should be paid to the adolescent girls majority of whom suffer in silence on the assumption that menstrual complaints are a normal occurrence.
2. Issues of menstruation and sex education should be addressed early with the adolescent girls.

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APPENDIX 1: OBSTETRIC DATA COLLECTION SHEET

DATA COLLECTION SHEET

1. Clients age_____
2. Level of clients education.

   None_____

   Primary_____

   Secondary _____

   College_____
3. Parity
4. Gestation age at 1st Visit (weeks) _____
5. Total Number of ANC Visits_____
6. Antenatal Profile recorded (tick).

   Hb_____

   Blood group, Rh factor_____

   VDRL_____

   HIV_____
7. Any antenatal complications?

   No_____

   Yes_____list complication(s) 1

   2

   3

   etc
8. If any complication, indicate treatment

   _____

   _____

   _____
9. Mode of delivery

   Vaginal _____

   Caesarean Section_____

10. Pregnancy Outcome

    Sex_____

    Weight_____

    Apgar Score_____

    Gestation at birth_____

11. Pueperium

    Normal_____

    Pueperium complication_____

    Treatment for complication_____

    Maternal death_____

APPENDIX 2: GYNAECOLOGICAL DATA COLLECTION QUESTIONNAIRE AND CONSENT FORM

QUESTIONNAIRE.

1. Date of birth (dd/mm/yy) _____
2. Age at first menstruation period (years) _____
3. Duration of menstrual flow (days) _____
4. Length of menstrual cycle (days) _____
5. Abdominal pain experienced during menstrual bleeding? please tick

   None (0)

   Mild (1)

   Moderate (2)

   Severe (3)

6. Other complaints during menstrual bleeding (Please Tick)

   Headache _____

   Back pain _____

   Breast pain_____

   Nausea/Vomiting_____

   Mood changes _____

7. Period of absence from class due to menstrual pain (in days) (please tick one)

   0

   1 – 2

   3 – 4

   > 4

8. Did you take pain killers for the pain?

   No _____

   Yes _____

9 How often do you participate in physical activity eg sports?

Regularly _____

Irregularly _____

10. How does physical activity affect your menstrual pain?

No change _____

Lessens pain _____

Worsens Pain _____

CONSENT FORM

I, _____ of _____ Secondary School hereby consent to participate in the study, the nature and effect of which have been explained to me by the investigator.

I also consent to the information being used for any other scientific purpose as may be found to be necessary.

No form of enticement or coercion has been extended to me.

Date:_____ Signed: _____

I confirm that I have explained to the participant the nature and effect of this study.

Date: _____ Signed: _____

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.

Tel: 726300-9
Fax: 725272
Telegrams: "MEDSUP", Nairobi.

Ref: KNH-ERC/01/2111 **Date: 20 January 2004**

Dr. Patrick M. Kimata
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi.

Dear Dr. Kimata,

RESEACH PROPOSAL " EVALUATION OF THE QUALITY OF ANTENATAL CARE AND PREGNANCY OUTCOME AT THE DEPARTMENT OF DEFENCE NAIROBI UNITS"
(P95/8/2003)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and **approved** the revised version of your above cited research proposal for the period 20 January 2004 – 19 January 2005. You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

PROF. A. N. GUANTAI
SECRETARY, KNH-ERC

Cc Prof. K. M. Bhatt, Chairperson, KNH-ERC
The Deputy Director (C/S), KNH
The Dean, Faculty of Medicine, UON
The Chairman, Dept. of Obs/Gynae, UON
Supervisors: Dr. P. Muia Ndavi, Dept of Obs/Gynae, UON
Dr. J. Wanyoike Gichuru, Dept. of Obs/Gynae, UON

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.

Tel: 726300-9
Fax: 725272
Telegrams: "MEDSUP", Nairobi.
Email: **KNHplan@Ken.Healthnet.org**

Ref: KNH-ERC/01/2192 **Date: 23 March 2004**

Dr. P Mukui Kimata
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi

Dear Dr. Kimata,

RESEARCH PROPOSAL "THE MENSTRUAL CYCLE A DYSMENORRHOEA IN ADOLESCENT GIRLS IN A SECONDARY SCHOOL IN KIAMBU DISTRICT" (P94/8/2003)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and **approved** the revised version of your above cited research proposal for the period 23 March 2004 – 22 March 2005. You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely,

PROF. A N GUANTAI
SECRETARY, KNH-ERC

Cc Prof. K Bhatt, Chairperson, KNH-ERC
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CMRO
Supervisors: Dr. P Muia Ndavi, Dept. of Obs/Gynae, UON
Dr. J Wanyoike Gichuhi, Dept. of Obs/Gynae, UON