PROLAPSED SUBMUCOUS FIBROID - TOTAL ABDOMINAL HYSTERECTOMY

Name:	N.M.		
Ip. No:	876358	LMP:	1986
Age:	51 years	Admission:	15.2.1988
Parity:	7+0	Discharge:	7.5.1988

PRESENTING HISTORY:

Mrs N.M. was admitted to our ward (ward 4) on 15.2.1988 because of irregular vaginal bleeding and a mass bulging in her vagina. These were accompanied by lower abdominal pains which were worse during such bleeding episodes. This vaginal bleeding was frequently followed by foul smelling vaginal discharge. She had had these problems for a period of five months.

PAST MEDICAL HISTORY:

She had been admitted at Kilimambogo Mission Hospital with similar complaints in August, 1987 where she was transfused one unit of blood.

OBSTETRICAL AND GYNAECOLOGICAL HISTORY:

She had her menarche at 18 years of age, and subsequently had regular mentsrual periods lasting 3 days every 30 days. She denied any history of dymenorrhoea. She had not used any contraceptive methods. Her last menstrual period occurred in 1986. She was therefore post-menopausal on admission. She was para 7+0, all spontaneous vertex deliveries. Her last delivery was in 1973. All her children were alive and well.

FAMILY AND SOCIAL HISTORY:

She was a married woman and was staying with her husband at Machakos. Both of them were small scale farmers. She neither smoked any cigarrettes nor took any alcoholic drinks.

PHYSICAL EXAMINATION:

She was in a satisfactory, fair general condition, not pale. There was no clinical evidence of jaundice, leg oedema

or peripheral lymph node enlargement. The blood pressure was 120 mmHg systolic, and 80 mmHg distolic, with a pulse rate of 80 per minute. Her respiratory rate was 20 per minute.

The cardiovascular and central nervous systems were grossly normal.

ABDOMINAL EXAMINATION:

The abdomen was not obese. It was moving with respiration. There was no distension and no previous therapeutic or surgical scars. There was no tenderness elicited. Both the liver and the spleen were not palpable. The uterus was just palpable above the symphysis pubis - it was corresping to 12 weeks.

PELVIC EXAMINATION :

External genitalia was normal. Both the introitus and the vagina were also normal. The cervix was 5cm dilated. There was a firm mass arising from within the uterus and prolapsing through the open cervical os. This mass had a thick pedicle about 4 cm in diameter. This mass was about 5 x 5 x 10 cm^3, and it was not ulcerated. There was a foul smelling yellowish vaginal discharge with slight vaginal bleeding. The uterus was bulky and corresponding to 12 weeks. The adnexae and the cul-de-sac were free, non-tender.

DIAGNOSIS :

A diagnosis of prolapsed submucous fibroid was made and the patient planned for total abdominal systerectomy.

MANAGEMENT IN THE WARD:

She was put on ampicillin, flagyl, iron (ii) sulphate and folic acid tablets. She was given paracetamol for pain. On 7th March, 1988 she was transfused one unit of blood but she reacted to this blood when it was just started (with pyrexia, rigours, hypo tension of 60/40 mmHg and a rapid thready pulse). The transfusion was immediately stopped. She was then managed conservatively with hydrocortisone and piriton and she improved. On 20th March, 1988, she was transfused another unit of blood - this time she did not react to the blood.

INVESTIGATIONS AND RESULT:

. Haemoglobin		: 12.6 g/dl.
. Leucocytes		: 5.2 x 10^9/l.
. Serum chemistry	Na^+	: 144 mmol/l.
.	K^+	: 4.0 mmol/l.
	BUN	: 4.0 mmol/l.
. M.S.S.U.		: No growth.

. And she was prepared for total abdominal hysterectomy.

TOTAL ABDOMINAL HYSTERECTOMY:

The details of the operation was discussed with the patient and she consented. She signed the relevant consent form and total abdominal hysterectomy was performed on 29th April, 1988. She was starved the usual and only the intended sub-umbilical operation site shaved the night before. In the morning of the operation she was given predication - intramuscular 0.6 mg atropine and 50mg pethide. On the operation table, and after being anaesthetised, vulvo-vaginal toilet was done and aseptically catheterized for the duration of the operation. She was then placed in supine position; cleaned and draped with sterile towels. A lower midline incision was made and when the abdomen opened the following were noticed:

- an enlarged uterus
- small atrophic ovaries
- other abdominal organs grossly normal.

The uterus was held with a myomectomy screw and the cornua of the uterus was identified. The round ligament was then grasped with curved forceps, cut, disected and ligated. The fallopian tubes the ovarian ligaments and the upper part of the broad ligaments were then grasped with curved clamps, cut and cross-stiched (ligated) bilaterally. The peritoneum anterior to the uterus was cut just above the bladder and, using a sponge, pushing it, and the bladder off the uterus all the way down to the cervix. The gut was packed a away, particularly the rectum in the Pouch of Douglas with moist packs. There were no adhesions. Then, holding the uterus upwards and forward, the broad ligaments were tensed, curved clamps (forceps) were attached to the cardinal ligaments; these were then cut and cross-stitched in the fascial tissue; having made sure that the bladder and the ureters have been pushed out of the way. The next step was the opening of the vagina: the cervix was felt with a finger, the anterior vault was incised with, the knife, and all bleeders were ligated as the vagina was cut across. The specimen was then easily removed taking great care

not to spill any potentially infected material from the vagina into the peritoneal cavity! The vaginal vault was closed by interrupted mattress No. 2 absorbable sutures followed by closure of the peritoneum with a continuous suture to bury all the ligated tissue stumps. Haemostasis was adequately achieved. The abdomen was then closed in the usual three layers, and the bladder catheter removed.

HISTOLOGY REPORT:

- the uterine weight was 450 gm.
- its measurements were 7 x 9 x 12 cm^3
- there was a uterine fibroid 5 x 5 x 8 cm^3 protruding through the cervix.
- haemorrhage was seen around the fallopian tube.
- histology showed chronic cervicitis and leiomyoma.

POST OPERATIVE CARE:

Routine post-operative care was instituted. She was given analgesia in form of pethidine 100 mg intramuscularly every 8 hours for 48 hours and then put on paracetamol tablets. She was given ampicillin 500mg 6 hourly for one week. The patient was encouraged to get out of bed on the second post-operative day, and physiotherapy was commenced as soon as was practicable.

The patient did not require any blood transfusion as the intra-operative blood loss was minimal. She did quite well post-operation. Her post-operative haemogram which was done on 6.5.1988 was as follows:

WBC = 6.1 x 10^9/l.
Haemoglobin = 10.1 g/dl.
Haematocrit = 29.7%.
Platelet cont = 372 x 10^9/l.

She was discharged home in good general condition nine days after her successful operation. She went back to Machakos.

DISCUSSION:

The patient presented had prolapsed submucous fibroid during her post-menopausal period, and was treated by total abdominal hysterectomy.

Uterine fibromyomas are the commonest benign tumours of the female genital tract in all racial groups (1,2). They are particularly common in Black Africans, West Indians and American negroes. Torpin et al found that fibroids were three and one - third times as common in Blacks as in Whites (2). Fibroids grow more extensively and occur at a younger age in the Black population. They also appear to be related to hormonal influences. They certainly get larger during pregnancy and with oestrogen administration (1). The patient presented has demonstrated that fibroids do not always diminish in size postmenopausally. They can be extremely large and multiple yet remain benign.

Uterine fibroids may be either submucous (growing into the cavity), intramural, or subserous (bulging into the peritoneal cavity). The last-named type of fibroid may develop a pedicle and become attached to other structures usually the omentum - and obtain extra blood supply from these areas (parasitic fibroid) (1,5,7,8).

In a relatively small proportion of patients (our patient inclusive) pedunculated submucous fibroids may be expelled from the uterine cavity into the vagina, where they remain attached to the uterine body by their pedicle. They then present as a vaginal tumour. Such fibroids are treated surgically, either by vaginal myomectomy (twisting off or the pedicle cut at the base) or total abdominal hysterectomy (2). In our case, the treatment was by total abdominal hysterectomy because the pedicle in this case was very large and vaginal myomectomy could not be possible - it was also suspected there could be more fibroids. In any case, our patient was an elderly postmenopausal patient long past the childbearing age!

Since fibroids presenting in the vagina (which hereafter will be referred to as "vaginal fibroids") are frequently infected and necrotic, some surgeons feel that hysterectomy exposes the patient to an unjustified risk of infection (2). Vaginal myomectomy on the other hand, leaves behind a uterus which may well contain

further fibroids which may cause further symptoms at a later date. Others feel that vaginal myomectomy should precede total abdominal hysterectomy. In our case, this was not necessary.

The patient presented was a Black African and of low socio-economic status. She was a grand-multi-para (para 7+0) and her last delivery was in 1973. The period between her last delivery and the development of her fibroid was therefore 14 years.

60% of fibromyomas arise in women who have either never been pregnant or have only had one child (1,2,5). Our patient obviously does not belong to this 60%. Abitbol published details of 14 pregnancies in patients with submucous fibroids. There was a high incidence of premature labour, fetal loss and third-stage complications. None of his patients presented with fibroids prolapsed into the vagina, but in four cases the fibroid was subsequently expelled by the uterus.

The long period since the last delivery in the patient presented may well be explained simply by the fact that she was past regular age of chilbearing rather than by reduced fertility due to fibroids.

Lawson and Stewart comment that "particularly heavy bleeding almost always occurs when the submucous fibroids are being extruded, because these are always congested, and are frequently infected or even necrotic" (5). This is clearly illustrated in our patient by the fact that she frequently complained of post-menopausal vaginal bleeding on and off which necessited blood transfusion at both the Kilimambogo Mission Hospital and the Kenyatta National Hospital.

With regard to the type of operation that should be performed for prolapsed pedunculated fibroids, Philpott states that vaginal myomectomy "is particularly indicated when the tumour is nectrotic and infected". However, Lawson and Stewart suggest that "Even this simple procedure carries some risk of sepsis and subsequent venous thrombosis and embolism. If there are other fibroids in the uterus and the patient is in good condition, it may be as safe, or safer, to do a total abdominal hysterectomy".

Jeffcoate (7) makes a cautionary comment in relation to vaginal myomectomy. Tumours attached to the interior of the uterus by a stalk and then expelled into the vagina may produce inversion of the uterus. "The patient's symptoms are those of the polyps and the associated invasion may be missed unless the possibility is kept in mind. If it is overlooked, the result can be disastrous because, in dividing what is regarded as the pedicle of the polyp, the surgeon cuts across the fundus of the uterus and opens into the peritoneal cavity. Before any such polyp is removed the length of the uterine cavity should always be tested by a sound".

Total abdominal hysterectomy removed from our patient the risk of future recurrence of fibroids and, incidentally, that of future uterine or cervical cancer. Our patient had shown clearly that prolapse of a submucous fibroid does not contraindicate hysterectomy, where this is thought to be in the patient's best interest (initial vaginal myomectomy might reduce the risk of spill of infected material from the vagina into the peritoneal cavity.

Degenerations, which may be either hyaline, cystic, or fatty, are usually due to diminished blood supply when the tumour becomes large. Red degeneration (or necrobiosis) may occur during pregnancy or postpartum, and it has been reported in the menopause. This is due to venous obstruction producing intense congestion and necrosis (1) Malignant change (Sarcomatous) is a rare complication in the menopausal women. All these degeneration changes did not occur in our patient. The histology report of the specimen came back as uterine leiomyoma.

REFERENCES:

1. Rivlin ME., Morrison JC., Bates GW. (Editors). Manual of clinical problems in Obstetrics and Gynaecology. First Edition. Little, Brown and Company. Boston. 1982.

2. Riley P. Treatment of Prolapsed submucous Fibroids. S. Afr. Med. J. 62: 22, 1982.

3. Torpin Quoted by 2.

4. Abitbol Quoted by 2.

5. Lawson JB and Stewart DB. Obstetrics and Gynaecology in the Tropics and Developing countries. First edition. The English language Book Society and Edward Arnold (Publishers) Ltd., Lond. 1970.

6. Philpott Quoted by 2.

7. Jeffcoate TNA. Principles of Gynaecology. Third edition. Butterworths. London. 1972.

8. Novek ER and Woodruff JD. Novak's Gynaecologic Obstetric Pathology. Eighth edition. W.B. Saunders Company. Philadelphia and London. 1979.

FEMALE INTERVAL STERILIZATION - MINILAPAROTOMY UNDER LOCAL ANAESTHESIA AND SYSTEMIC ANALGESIA.

Name:	B.A.	Parity:	8+0
Age:	35 years	Admission:	16.8.1988.
Unit No:	901140	Discharge:	16.8.1988.

PRESENTING HISTORY:

Mrs. B.A. was admitted to the Laparoscopy ward on 16th August, 1988 for voluntary tubal ligation. She had initially presented at the Gynaecology clinic three weeks before with a request to have her tubes ligated. She was adequately counselled at the clinic and in the laparoscopy ward.

PAST OBSTETRICAL AND GYNAECOLOGY HISTORY:

She had her menarche at 13 years of age and subsequently had regular periods for 3-4 days every 28-30 days. She was para 8+0, all normal vaginal deliveries. She had twin delivery in 1984. She therefore had 9 children - all alive and well. There were only two girls, the rest were boys. Her last delivery was in 1986, and her last monthly period was on 9th August, 1988.

She had used the oral contraceptive "pill" from 1986 to April, 1987, but stopped this method of contraception because she developed high blood pressure. She again used the injectable Depoprovera from May 1987 to April, 1988, but also stopped this method because of high blood pressure. She had an intrauterine contraceptive device (lippes Loop) inserted on 14.6.1988 and was still in-situ. She did not want this device because she thought she could become pregnant with it still in place.

PAST MEDICAL HISTORY:

She had no significant medical or surgical history.

FAMILY AND SOCIAL HISTORY:

She was a housewife, who was married in 1970. She neither smoked not took alcoholic drinks. There was no history of any familial disease.

PHYSICAL EXAMINATION:

She was in good general condition. Not pale, no jaundice, oedema or peripheral lymph node enlargement. Her blood pressure was 110/70 mmHg, and pulse rate of 76 per minute. Her respiratory rate was 20 per minute and a body temperature was 36°c. The cardiovascular and central nervours systems were grossly normal.

ABDOMINAL EXAMINATION:

The abdomen was not obese, and moved with respiration. There was no distension and no previous operation scars. There was no tenderness elicited. Both the liver and the spleen were not palpable. No organomegaly was present. Bowel sounds were normal.

PELVIC EXAMINATION:

External genitalia was normal. The introitus and the vagina were also normal. The cervix was firm with a closed parous os. The uterus was of normal size, anteverted, anteflexed and mobile. The adnexae were clear and non-tender. There was no bleeding or vaginal discharge. She had intra-uterine contraceptive device in-situ.

DIAGNOSIS:

A diagnosis of a grand-multipara for interval tubal ligation was made.

INVESTIGATIONS DONE:

Pap smear : CLASS I
Haemoglobin: 11.6 g/dl.
Urinalysis : No sugar; no protein.

MINILAPAROTOMY TUBAL LIGATION:

The details of the operation were discussed with the patient and her husband and they both consented to tubal ligation under local anaesthesia plus systemic analgesia. They signed the relevant consent forms.

On the day of the surgery the patient read and signed a witnessed pre-operative consent form. She was shaved at the hypogastric region and the mons pubis. She emptied her bladder and was taken to theatre at 10.00 a.m.

She was placed on the operating table in a semi-dorsal lithotomy position, with her legs resting comfortably in padded ankle - stirrups. Vulvo-vaginal toilet was done, and then drapped with sterile towels. Sterile vaginal examination was done and confirmed the earlier findings. A Sim's speculum was inserted to reveal the cervix which was then grasped with a Volsellum forceps. The uterus was sounded and a tubal insufflation canula inserted to act as a uterine "handler" and "elevator". (Before this procedure, she had earlier been given intravenous pethidine 100mg, and diazepan 10mg as systemic analgesia). The abdomen was then cleaned with savlon solution and spirit before draping with sterile towels, leaving exposed suprapubic field approximately 6 x 10 cm^2.

The site of incision was chosen as 2 cm above the symphysis pubis transversely along a skin crease. This region was now infiltrated with 20 ml of 1% procaine hydrochloride injected into the skin, subcutaneous tissue, fascia, rectus sheath, muscles and peritoneum in that order.

A transverse incision, 3cm long, was made 2cm above the symphysis (this will result in the cicatrix being covered by the pubis hair). The fascia was transversely incised while the pyramidale muscles were separated along the median line. The peritoneum was opened proximal to the incision to avoid lesion of the bladder. At this time, the operation table was tilted head down about 15 degrees (Trendelenburg position) to allow bowel to fall back towards the diaphram. The fundus uteri was found with the index finger and the fallopian tubes were located with the aid of a hook. By using a Babcock clamp, the tubes were brought forward individually and identified by confirming the presence of the fimbriated end and confirming the continuation of the isthmus with the body of the uterus. The tubes were then ligated using a modified Pomeroy ligation technique with the figure of eight suture of plain catgut. A No. 0 plain catgut suture was passed through the mesosalpnx well exposed in order to prevent blood vessel laceration. This suture was tied around both limbs of the isolated

middle portion of the isthmus of the tube. Unlike a free tie, a suture ligature cannot slip off. A second length of catgut was then tied around the tube.

The knuckle of the tube was excised. Anteversion and anteflexion of the uterus was permitted by the use of the uterine "handler" and manipulator which was provided with a stop-rubber attached 6cm from the tip, preventing the instrument from perforating the uterus. Haemostasis was adequately achieved. Closure of the abdomen was quickly and easily accomplished in layers. The peritoneum was left unstitched. The fascia was closed with No. 1 chronic catgut in subcuticular fashion. A small dry dressing was applied to the wound and the uterine "handler" removed. A nurse was actively conversing with the patient during the course of this short operation. Retraction and handling of the tissues were done with extreme gentleness.

Five minutes after the completion of the operation, the patient was taken into the "recovery room" in the same Laparoscopy ward. She did not complain of uterine cramps or shoulder tip pains (the latter could have been caused by air temporarity trapped under the diaphragm). After resting for about 4 hours, she returned home with a companion. She was given a prescription for an analgesia and an antibiotic and advised to rest at home through the first post-operative day, and to come back for review one week later.

POST OPERATIVE FOLLOW UP:

Seen 7 days later, the wound had healed well without infection and the scar was barely visible. She was seen again after 6 weeks for a final check up and she had no complaints.

DISCUSSION:

The patient presented had interval bilateral tubal ligation by mini laparotomy approach because she had completed her family size.

Female sterilization is widely used in diverse countries by couples who do not want more children. Our patient opted for tubal ligation because she did not want any more children. In many countries the use of female sterilization is growing faster than use of other contraceptive methods (1).

In the last few years tubal sterilization by minilaparotomy has become widely used for permanent sterilization. The fact that it can be performed on an outpatient basis (as was done in our patient), uses easily available instruments, and requires little time for training (only two weeks in our unit), and minimal surgical skills has been considered a distinct advantage over such approaches as laparoscopy (2). It has thus greater operative simplicity, safety and economy than laparoscopy.

The minilparotomy procedure provided the best current method of tubal sterilization in our patient who was not obese. It is an ambulatory procedure carried out with local anaesthesia and systemic analgesia, the shortest recovery time, and the lowest morbidity and failure rates (3).

The simplicity, safety, effectiveness of minilaparotomy make it ideal method for most women. Because the incision is smaller, minilaparotomy causes far fewer complications than laparotomy. Our patient had no complications following the operation. Minilaparotomy may be difficult when the woman is obese. It may also be difficult when her tubes have been damaged by infection or surgery and are immobilized by pelvic adhesions.

In such situations one can complete the sterilization either by enlarging the incision slightly or by using a different approach to the tubes (1,4).

The principal problem associated with the use of local anaesthesia

concerns the relief of patient apprehension (2). This problem was solved in our patient largely by good pre-operative counselling, supportive care during surgery and intravenous pethidine which helped in allaying her anxiety.

Local anaesthesia is adequate for minilaparotomy. Even a small accidental incision into the bowel or bladder can be repaired without resort to general anaesthesia or major laparotomy. Therefore, minilaparotomy can be performed safely in an out-of-hospital location, such as a clinic or an expanded office surgical unit without the need for stand-by general anaesthesia, personnel and equipment (2).

In our unit tubal ligation is considered an irreversible procedure and is only offered to women who desire no more children and performed with written consent (7). In Kenya, voluntary sterilization is considered legal because there is no law that prohibits it.

Indications for tubal ligation are socio-economic (i.e. family feels it has more than enough children to look after as was the case here) or medical (e.g. heart disease, diabetes mellitus, severe hypertension etc).

There are few absolute contraindications to minilaparotomy. Women with current peritonitis should not undergo the procedure because surgery can exacerbate the infection. Obesity and pelvic adhesions are only relative contraindications. There are several techniques of tubal ligation that can be used effectively (1). Ligating or "tying", is the oldest and most common technique for blocking the tubes. It is safe, inexpensive, and does not require special equipment or extensive surgical training.

Pomeroy technique, which was employed in the patient presented, is the most widely used ligation technique because it is simple and very effective. First developed in 1930 (1), the Pomeroy technique involves using absorbable catgut suture to tie the base of a loop of tube near the midportion and cutting off the top of the loop. The suture material is absorbed rapidly, reducing the chances of inflammation and formation of fistulas in the tubes. After the sutures are absorbed, the ends of the tube

pull apart. The Pomeroy technique destroys about 3 to 4 cm of tube.

Female sterilization is a very effective contraceptive method. With the most widely used techniques, fewer than one woman in 100 will become pregnant in two years after surgery. This compares with pregnancy rates between 2 and 20% in the first year of use of various other methods, according to large surveys in the USA and the Philippines (1). Minilaparotomy, is more effective than laparoscopy. Failure rates for Pomeroy's method have been reported to be from 0.25% to 2.0% and 0.4 to 1.7% for bilateral tubal fulfuration (5).

With a population that is increasing at the rate of 4% per annum, the Government of Kenya has to put extra emphasis on family Planning. Our resources being scarce, it is particularly important that the methods we use are highly cost-effective. Minilaparotomy therefore comes as one such method that can and has been employed in remote areas where there are no highly specialised personnel (4).

Long-term effects of sterilization are difficult to evaluate because the data published todate lack adequate controls (6). A post-tubal ligation syndrome that has been described is characterised by Menorhagia, pelvic discomfort, and ovarian cyst formation. Various studies report conflicting rates of menstrual disturbances (6). These problems may be related to the fact that the blood flow to the ovaries undergoes cyclic changes and is correlated with the systemic progesterone level. The mechanisms of such changes in the blood flow are unknown. Surgical sterilization seems to interfere with the vascular supply of the ovaries (6).

Some patients develop psychologic or sexual dysfunctions, or both following sterilization. These problems are often related to ambivalence regarding the procedure. Furthermore, fertility is so intimately associated with feminity in many women's minds that they cannot easily relate to the loss of the reproductive function (6). Careful pre-operative counselling (as was done in our case) is essential if these problems are to be avoided. Fortunately, most women do not regret the procedure since they

need no longer fear an unwanted pregnancy.

I conclude by stressing the fact that for most women requesting sterilization, minilaparotomy is a highly satisfactory approach.

REFERENCES:

1. Female sterilization - Population Reports series C. Number 9, May, 1985.

2. Penfield AJ. Minilaparotomy for Female sterilization. Obstet. Gynecol. 54: 184, 1979.

3. Sandmire HF. Minilaparotomy tubal sterilization. AM. J. Obstet. Gynecol. 131: 453, 1978.

4. Crounch PR. Tubal ligations : A Review of three years' work by a medical auxilliary. Tropical Doctor 9: 189, 1979.

5. Muhiu G. and Rogo KO. Ruptured Tubal pregnancy following Tubal sterilization. East African Med. J. 64: 33, 1987.

6. Rivlin ME, Morrison JC., Bates GW. (ed). Manual of Clinical Problems in Obstetrics and Gynaecology. First Edition. Little, Brown and Company. Boston. 1982.

7. Makokha AE., and Mailu C. Female surgical Contraception in Kenya - The Kenyatta National Hospital Experience. J. Obst. Gyn. East. Cent. Afr. 8:28, 1989.

GRANULOSA - THECA CELL TUMOUR - UNILATERAL SALPINGO-OOPHORECTOMY:

Name:	W.O.A.	LMP:	20.8.1987.
Age:	30 years	Admission	12.2.1988.
Unit No:	877415	Discharge:	26.3.1988.
Parity:	0+0		

PRESENTING HISTORY:

Mrs. W.O.A. was admitted to ward 4 on 12.2.88 from the gynaecology clinic with a history of abdominal swelling for two months and amenorrhoea for 5 months. She first missed her periods in September, 1987, and thought she had conceived at that time. The abdominal swelling came much later, and had been progressively increasing in size since then. It was not tender but caused some discomfort in the pelvis on the left. She occasionally spotted dark blood. There was no history of abnormal hair growth, voice changes, enlargemnt of her clitoris, change in her libidinal desires, breasts or her facial appearance.

OBSTETRIC AND GYNAECOLOGICAL HISTORY:

Her menarche was at 13 years of age and subsequently had had periods lasting 3-4 days every 28-30 days initially, but later her periods were lasting 8-10 days every 28 days. The last menstrual period was on 20.8.87. Para 0+0. She had not used any contraceptive method. She had been investigated for primary infertility in various hospitals.

PAST MEDICAL HISTORY:

Diagnostic laparoscopy was done (for infertility investigation) in 1982 at Coast General Hospital.

FAMILY AND SOCIAL HISTORY:

She was a divorcee, and was staying with her sister in Nairobi. She was working as a cartographer in the geology department. There was no family history of any major illness such as tuberculosis or diabetes mellitus. She was smoking and taking alcohol (moderately).

PHYSICAL EXAMINATION:

Her general condition was satisfactory. Clinically, there was no pallor, jaundice, oedema or palpable peripheral lymph nodes. Her blood pressure was 130/80 mmHg; pulse rate was 80 per minute, respiratory rate was 20/minute, and her body temperature was 36°c.

Her cardio-pulmonary and central nervous systems were grossly normal.

ABDOMINAL EXAMINATION :

A peri-umbilical laparoscopy scar and therapeutic marks were present in the abdomen. There was a large mass arising from the pelvis and corresponding to 30 weeks. This mass was at the mid-line, oval in shape, firm, non-tender, freely mobile (however) with a smooth surface and not fixed to any other structures. It measured about 15 x 15 x 10 cm^3, was dull to percussion and had no bruit.

The liver and the spleen were not enlarged.

PELVIC EXAMINATION:

The external genitalia was normal. Digitally, the cervical os was tightly closed. The uterus was normal in size, but displaced to the left. Both the left adnexum and the cul-de-sac were free. There was a large mass arising from the adnexum. Its findings were as above. There was a little dark blood on the examining finger.

DIAGNOSIS:

A diagnosis of a right ovarian tumour was made and the patient admitted to be worked-up for laparotomy.

INVESTIGATIONS AND RESULTS:

1. Haemoglobin : 13.3 g/dl.
. Haematocrit : 39.7%

3. Serum Electrolytes - Na^+ : 135 mmol/l.
   K^+ : 4.6 mmol/l.
   BUN : 4.3 mmol/l.
   Creatinine : 105 mmol/l.
4. Pregnancy test : Negative. (18.1.88).
5. Pap smear : Class I.
6. Abdominal ultrasound (19.1.88) - uterus was normal in size was shape. There was a cystic mass on the mid-line more toward the right side and extending beyond the umbilicus. It was about 16.4 x 9 cm^2.

She was then prepared for laparotomy.

LAPAROTOMY ON 18.3.1988:

The patient was explained thoroughly the necessity to have this mass removed and gave the necessary consent.

In theatre, and under anaesthesia, she was placed in lithotomy position, vulvo-vaginal toilet done and draped with sterile surgical towels. Aseptic bladder catheterisation was then performed, obtaining clear urine. Repeat pelvic examination confirmed the earlier findings.

She was then repositioned, the abdomen cleaned and draped with sterile surgical towels. The abdomen was opened through an infra-umbilical mid-line incision. No adhesions were encountered. The following were found: a huge left ovarian tumour with both cystic and solid areas; it was yellow in colour; a large left hydrosalpnx adherent to this tumour; no ascites was noted; there were no lymphatic infiltration, and no peritoneal seedings. The right tube had a small terminal hydrosalpnx with fimbrial block; the right ovary was normal in size - it had previous scarring, but no corpus luteum; there were three subserosal uterine fibroids present - otherwise the uterus was normal in size, anteverted and mobile. Left salpingo - oophorectomy and right cuff salpingostomy were formed as follows: The left ovarian tumour was held medially while the infundibulopelvic and ovarian ligaments were displayed. These were double clamped and divided. The left broad ligament and the left tube were also clamped and divided. The tumour was easily removed. The left tube was also removed because it was pathologically adherent to this tumour. A good cuff of tissue was left distal to the forceps, and the pedi-

cles were transfixed, tied and double tied. Haemostasis was adequately achieved.

The blocked fimbrial end of the right tube was opened on the antimesenteric aspect where there was a slight indentation - an x - shaped incision just through the serosa was placed over this area - permitting uncovering of fimbriae without bleeding. The distal end of the tube was then everted and sutured back to the serosa with 6.0 fine nylon sutures to achieve cuff fimbrioplasty. The filmy adhesions present were released. Dextran 70 solution was left within the peritoneal cavity. The abdomen was then closed in the usual 4 layers. No drain was left in-situ.

POST OPERATIVE CARE:

Routine post-operative care was instituted. She was given pethidine 100mg 8 hourly for 48 hours and then put on paracetamol 2 tablets. Ambulation was encouraged as soon as the pain was less. No blood tansfusion was required. On the third post-operative day, she resumed her "periods" which lasted for 5 days. All the stitches were removed on the 9th post-operative day, and was discharged home the same day, to be followed up in the Gynaecology clinic in 6 weeks time.

HISTOLOGY REPORT:

The specimen received at the Pathology Department considted of two very bulky pieces of tumour together measuring 12 x 12 x 10 cm^3 and weighing 750 gram. The tumour appeared well encapsulated with no papillary infiltrations - it was firm and yellow in colour. Histological sections showed granulosa-theca cell tumour.

FOLLOW UP:

Seen in the Gynaecology clinic 6 weeks later, she had no complications. She had already got her second menstrual period. Follow-up in the clinic was life-time.

DISCUSSION

The patient presented came to us because of secondary amenorrhoea, occasional vaginal spotting of very dark blood and a big ovarian tumour. She was a 30 year old patient who also complained of primary infertility. Her infertility could not have been due to this ovarian tumour as both her fallopian tubes were found to be blocked at laparotomy.

Granulosa-theca cell tumours have generally been categorized as "sex cord" stromal tumours (1). Since there are no sex cords in the female gonad at any time during embryonic or functional years, this term is purely descriptive and does not identify a feature of the gonad. The sex cords in the female gonad are seen in the hilum and are of mesonephric origin. On rare occasions, tumours may arise from these elements, but they have nothing to do with these classic feminizing mesenchymomas (1-3).

In the past these neoplasms were segregated into granulosa cell tumours, theca cell tumours, and luteomas. Recently this separation has been dropped in recognition of the fact that many mixed patterns are present (4). It is generally considered that these tumours are benign, but the granulosa cell tumour frequently behaves in a malignant fashion, either initially or many years later, whereas both the theca cell tumour and granulosa-theca cell display benign behaviour (4).

Granulosa-theca cell tumours arise from the gonadal stroma (5). In many tumours these elements are mixed, supporting the concept of their common origin from the mesencyme. Pure theca cell tumours are rarely malignant (3,4,5). A mixture of both elements is almost the rule.

The incidence of this group of neoplasms ranges from 1.6 to 3% of all ovarian tumours. They constitute about 10% of all ovarian cancers (4,5). The incidence at the Kenyatta National Hospital has been reported to be 5.1% (Njuki, 1982) (6); 10% (Ojwang SBO, 1980) (7) and 21% (Michuki, 1984) (2).

These tumours may occur at any age. Less than 5% are discovered before puberty; 55% are found during the reproductive years, and

40% appear after the menopause (1-5). Our patient was aged 30 years.

Granulosa-theca cell tumours during the menstrual years are heralded by amenorrhea in about 50% of cases (1). The increased or persistent production of oestrogen "blocks" ovulation, and a pattern similar to that associated with Stein-Levanthal Syndrome results. These feminizing mesenchymomas are, with few exceptions, highly active oestrogen-producing tumours which result in a clinical syndrome of hyperoestrogenism (3). This is manifested chiefly by menstrual irregularities, endometrial hyperplasia (both cystic and adenomatous) and uterine myohypertrophy. In our patient excess oestrogen effects were revealed by secondary amenorrhoea, increased body weight and the presence of fibroids. This amenorrhoea ceased on removal of this tumour as shown by resumption of her menses.

There is a high incidence of endometrial carcinoma (and other tumours) found in association with feminizing ovarian tumours (3). Post-menopausal women who develop these tumours have an even greater incidence of endometrial carcinoma (3).

We were however, not able to disclose the histological or biochemical evidence of increased hormonal activity in our patient (i.e. endometrial samples or blood samples were not taken for the study).

The tumour size and clinical staging offer the clinician very definite help in establishing a prognosis. The following indicate a relatively poor prognosis (4):

- Patients aged over 40 years at the time of diagnosis; Presence of bloody ascites; Extra-ovarian spread; Bilateral tumours; Tumour solid throughout; Tumour measuring more than 15 cm in diameter; Numerous mitotic figures in the tumour.

Histologic grading and degree of encapsulation are not reliable prognostic factors. Rupture of the neoplasm during removal does not adversely affect the 5 - year survival rate, and the tumour does not invariably recur as a result of the spillage (4). Our patient had most of these prognostic factors in her favour.

Granulosa-theca cell tumours have a low malignant potential and most patients having them die of other causes (8). They have a malignancy or recurrence rate of 30% (4,5). The recurrence may occur many years, a fact that reflects the slow growth and tendency of granulosa-theca cell tumours to remain localized without invasion make recurrences amenable to repeated laparotomy (or laparoscopy) fails when the tumour invades retroperitoneally (4). Since there are almost no malignancies among the pure thecomas, the malignant potential of the granulosa-theca tumour is probably due to the granulosa cell component.

Because granulosa-theca tumours are so often unilateral (in 95% of cases), they can be treated by unilateral salpingo-oophorectomy, with biopsy and frozen section examination of the opposite ovary if it appears abnormal (8). Frozen-section examination is recommended to identify suspicious lesions of the opposite ovary and pelvic structures so that needless castration and unnecessary operative procedures can be avoided.

As this patient had a stage Ia lesion, para 0+0 and in need of children, surgical extirpation of the affected gonad alone was chosen for managemnt. She was only 30 year of age, did not have any ascites and there were no extra-gonadal spread. The patient was being monitored at close intervals in the Gynaecology clinic by complete physical examination and observation of signs and symptoms of continued excess oestrogen effects.

Chemotherapy and radiotherapy should be considered in tumours beyond stage Ia, in addition to total abdominal hysterectomy and bilateral salpingo-oophorectomy. This treatment modality also applies to patients who are more than 40 years of age.

Lifetime follow-up is necessary because most deaths with granulosa-theca cell tumours occur after the first 5 years rather than before. Recurrences more than 15 and 20 years after initial surgery have been reported (1,2,3,4,5,8).

REFERENCES:

1. Pernol M.L. and Benson R,C (ed). Current Obstetric and Gynaecologic Diagnosis and Treatment. 6th Edition. Appleton and Lange. Norwalk, Connecticut, 1987.

2. Michuki A.T.N. Granulosa-Theca cell Tumours at Kenyatta National Hospital. M. Med. Thesis. University of Nairobi. 1984.

3. Salverno L.J. Feminizing mesenchymomas of the ovary: An analysis of 28 granulosa-theca cell tumours and their relationship to co-existent carcinoma. Am. J. Obstet. Gynecol. 84:731, 1962.

4. Dinnerstein A.J. and O'Leary J.A. Granulosa-Theca cell Tumours. Obstet. Gynecol. 31:1654, 1968.

5. Lessing J.B., Michowitz M. Granulosa-Theca cell Tumour in a one year-old infant; Case report. Acta. Obstet. Gynecol. Scand. 64:345, 1985.

6. Njuki S.K. Primary Ovarian Malignancy: The Presentation at Kenyatta National Hospital. M. Med. Thesis. University of Nairobi. 1979.

7. Ojwang S.B.O. Ovarian cancer in Kenya. East Afr. Med. J. 57:131, 1980.

8. Norris H.J. and Taylor H.B. Prognosis of Granulosa-Theca cell Tumours of the ovary. Cancer 21: 255, 1968.

CARCINOMA OF THE CERVIX STAGE 1B - WERTHEIM'S HYSTERECTOMY AND RADIO THERAPY.

Name: G.W. LMP: None since last delivery

Age: 33 years Admission: 18.1.88

Unit No:866742 Discharge: 22.4.88

PRESENTING HISTORY:

Mrs G.W. was admitted to the ward on 18.1.88 through casualty complaining of vaginal bleeding on and off since her last delivery. The bleeding was not continuous but was with blood clots which were foul smelling. There was no history of effort or post-coital bleeding. She had occasional backache.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

Her menarche was at 14 years, and subsequently had regular menses lasting 4 days every month. She was para 5 + 2. Her last delivery was by caesarean childbirth in 1987, and had not yet resumed her menses. She had not used any oral contraceptives.

PAST MEDICAL HISTORY:

The only significant previous hospital admission was for the caesarean childbirth because of foetal distress already mentioned above.

FAMILY AND SOCIAL HISTORY

She was married, and was a small-scale business woman (hawker). Her husband was working with the city council of Nairobi.

PHYSICAL EXAMINATION:

Her general condition was fair. There was no pallor, jaundice, oedema or palpable peripheral lymph nodes. She was afebrile.

Her pulse rate was regular at 80 per minute; blood pressure was 110/70 mmHg; respiratory rate was regular at 20 per minute; and the body temperature was 36.6°c.

The cardio-pulmonary and the central nervous systems were essentially normal.

ABDOMINAL EXAMINATION:

The abdomen was soft and scaphoid. There was no tenderness or ascites. No masses were palpable. Both the liver and the spleen were not enlarged.

SPECULUM EXAMINATION

The introitus and the vaginal walls were normal. There was a fungating mass at the cervix, which was bleeding slightly.

PELVIC EXAMINATION:

The external genitalia was normal. On digital exam, there was a friable mass at the cervix which bled easily on touch. The uterus was soft, ante-verted, anteflexed and mobile. It was normal in size. There were no adnexal masses or tenderness. The cul-de-sac was free.

RECTAL EXAMINATION:

Rectal mucosa was free and mobile. No masses were palpable. There was no tenderness and no blood on the examining finger.

DIAGNOSIS:

A diagnosis of carcinoma of the cervix was made, and the patient worked up for Wertheim's hysterectomy.

INVESTIGATIONS AND RESULTS:

1.	Blood group:	A Rh "D" Positive.
2.	Haemoglobin:	14.5 g/dl.
3.	Haematocrit:	42.2%
4.	Serum Electrolytes - Na^+:	143 mmol/l.
	K^+:	4.2 mmol/l.
	BUN:	2.6 mmol/l.
	Creatinine :	99 mmol/l.
5.	M.S.S.U. :	No protein or glucosuria No growth obtained.
6.	Chest X-ray :	Normal.

7. Intravenous urography (9.2.88): The right kidney was normal. There was a filling defect in the central part of the left kidney distorting the calyceal system. Ureter and Bladder were normal.

The patient was then prepared for examination under anaesthesia.

EXAMINATION UNDER ANAESTHESIA:

In theatre the patient was put under general anaesthesia and vulvo-vaginal toilet done in lithotomy position. She was then draped and aseptically catheterized. The following were then found using speculum and digital examination: a fungating mass circumferentially covering the cervix, but sparing the fornices and the vaginal walls; there was no parametrial involvement, and the pelvic walls were free, the rectal mucosa was mobile and free. A biopsy specimen was taken for histology. (Note: Cystoscopy was not performed because there was no cystoscope available).

Remarks: This carcinoma was staged as Ib (FIGO).

HISTOLOGY REPORT (Path. No. 290/88):

A poorly differentiated squamous cell carcinoma invading through the full thickness of the biopsy fragment. There was

a marked fibrosis to the invading tumour as well as marked chronic inflammation.

The patient was then prepared for Wertheim's hysterectomy on 12.2.1988.

WERTHEIM'S HYSTERECTOMY:

Informed consent was obtained and she was starved from mid-night of the day of the operation and premedicated with 0.6 mg atropine and 100 mg pethidine one hour before she was taken to the operation suite. Four units of compatible blood were made available.

In theatre, she was given general anaesthesia and placed in dorso-lithotomy position. Vulvo-vaginal toilet was done and she was draped with sterile surgical towels. After aseptic catheterization, repeat vaginal exam confirmed the earlier findings.

In supine position, the abdomen was cleaned and draped with sterile surgical towels. Through a sub-umbilical mid-line incision (via the previous scar) the abdomen was opened in layers. The uterus, tubes, ovaries and other intra-peritoneal organs were grossly normal. After placing the retractors, the intestines were pushed back by gauze towels, whereby the rectum was stretched and the area of the small pelvis became clearly visible.

The right round ligament was double clamped far away from its uterine attachment and divided. The lateral stump was tied with No. 2 chromic catgut. The infundibulopelvic ligament was also double clamped and cut in between the clamps and the distal stump transfixed with No. 2 chromic catgut. Similar procedure was done on the contralateral side. The anterior leaf of the broad ligament was then opened and the incision extended anteriorly above the bladder to the midline. The same was carried out on the left side with the broad ligament incisions meeting in the mid-line. By blunt dissection the bladder and the vesico-uterine fold were pushed down to the level of the vaginal vault. The posterior leaf of the broad ligament was also opened and

deflected downwards to reveal the pararectal space.

The right ureter was then identified as it entered the pelvis over the bifurcation of the common iliac artery at the level of the pelvic brim. The peritoneum over it was opened and using the aneurysm needle the ureter was marked with ribbon tape. The lymph nodes were palpated on either side of the common iliac artery and were found not to be enlarged or fixed. The nodes and the fatty cellular tissue were removed from the level of the bifurcation of the aorta and continued down along the right common iliac artery to the external iliac vessels upto the level of the inguinal ligament. The obturator space was reached by medi al deflection of the external iliac vessels and the nodes were dissected out. By blunt dissection and blunt pulling, detached capillary ends contracted and became automatically blocked, thus eliminated bleeding.

The areolar tissues that lie directly beneath these vessels were removed. The node dissection was then continued along the internal iliac vessels and the uterine arteries were ligated and resected at their origins from the internal iliac arteries.

The ureteric fascial canal was exposed and the ureter released as it coursed to enter the base of the bladder. The ureter was left attached to the posterior leaf of the vesico-uterine fold. Similar procedure was performed on the left side.

The utero-sacral ligaments were then clamped, divided and tied. The bladder was dissected off the anterior vaginal wall and the cardinal ligament was divided close to the pelvic wall and tied with No. 2 chromic catgut. The bladder was freed off the anterior upper one-third of the vagina, carefully avoiding any ureteric injuries. The vagina was opened about 3 cm from the vault and cut all round to release the uterus, appendages and vaginal stump.

The vaginal margins were apposed with mattress sutures. Haemostasis was adequately achieved. Pelvic peritonization was performed with No. 1 chromic catgut. The abdomen was then closed

in layers after swabs and instruments counted and reported correct. The estimated blood loss was 400 ml.

The specimens were appropriately labelled and sent for histological examination.

POST - OPERATIVE CARE:

The patient had a smooth recovery from anaesthesia. She was put on intravenous fluids and 100 mg pethidine every 8 hours for 48 hours before oral feeds were allowed, and was also given prophylactic ampicillin 500 mg 6 hourly for 5 days. Her post-operative course was however, un-eventful, and all the stitches were removed on the seventh post-op day.

She was transfused four units of blood before she was given radiotherapy as below. (Post-op haemoglobin was 11.5 g/dl).

HISTOLOGY REPORT (No. 71/411):

Extensive moderately differentiated squamous carcinoma of the cervix. Tumour did not extend into myometrium. The endometrium was proliferative and chronic endometritis was present. The ovaries and oviducts were un-remarkable. The tumour did not extend to the inferior margins of resection. No tumour was seen in any of the lymph nodes.

RADIO THERAPY:

The patient was marked for radiotherapy which began on 7/3/1988. Deep X-ray therapy (DXT) was given via both the anterior and posterior fields at a rate of 2 Grays daily for 5 days a week. Each field was 14 x 12 cm^2. She received a total of 50 Grays with no complications. She was discharged home on 21/4/1988 in good general condition to come back after 12 weeks for review in radiotherapy clinic, and for life-time follow-up in the oncology clinic.

FOLLOW - UP:

Seen in the oncology clinic on 10.6.88, she had no complaints and the scar was well healed. There was no abnormality on abdominal or vaginal examination. Repeat Pap smear results showed no evidence of malignant cells.

She was for life long follow-up.

DISCUSSION:

Carcinoma of the cervix is a common malignancy in Kenyan women (1) and the rest of Africa (2). The purpose herein is to present a 33 year old female who had early invasive squamous cell carcinoma of the cervix and was managed by radical surgery and radiotherapy. It is generally believed that carcinoma of the cervix manifests at an earlier age in the tropics and other developing countries (1) as is clearly shown by our patient. This is attributed to the early age at first coitus, early marriage, high parity (1) and poor standard of living. To this list one may add male circumcision (or un-circumcision) and sub-standard penile hygiene.

The true incidence of cervical carcinoma is not known in Kenya (1). Despite the presence of screening programmes, epidemiological evidence suggests that the incidence and prevalence of squamous cell carcinoma of the cervix in young women is rising, possibly as a consequence of changed sexual habits in the last few decades (3). A more virulent and poorly controlled disease in younger women with invasive carcinoma has been documented in the literature. Suggestions to account for poor outcome in younger women include changes in tumour virulence or immunologic characteristics and possible differences in the causes or patterns of spread of the disease.

There is now clear evidence that human cervical cancer is related to certain genital infections, especially Human papilloma virus (HPV) types 16, 18, and 31, and Herpes simplex type 2 (2,3,6). In addition, the presence of chlamydia and HPV in the cervix has been shown to be covariables of sexual behaviour, and that their concomitant appearance may be ascribed to promiscuity (2). However, our patient had a stable marriage and there is no reason to believe that she could have been promiscuous.

The patient presented to us with abnormal vaginal bleeding and foul smelling vaginal discharge without the so-called "terrible-triad" of the cervical cancer. The source of haemorrhage in carcinoma of the cervix is said to be the dilated

capillaries of the vascular growth (3). The important physical signs that were present in her were that the cervix was friable, bled easily on touch and had a fungating mass. This mass was both infected and necrotic with induration of the cervix but not of the surrounding structures. This presentation was in keeping with those reported by Ojwang (1), Kitinya (2) and others. One other important factor was the early presentation of herself to us for treatment, as early stage cervical cancer is curable by surgery and radiotherapy.

Staging of her disease was based on physical exam, chest X-ray complete blood count, serum chemistry profile and excretory urography. Cystoscopy could have been used if it were present. Computerised tomography, nuclear medicine series and nuclear magnetic resonance of the pelvis and abdomen may be added to the armamentarium in the future. Patients with stage IB as was in our patient, have a 5 - year survival rate of 81% (3).

The tumour in this patient was still small in bulk, and histologically, it was reported to be squamous cell carcinoma - which occurs in over 90% of patients (1,2,3). Although it was moderately differentiated (G2), this type is the most radiosensitive and has the best prognosis when compared to the other histological types (3).

As with any cancer, treatment was directed to the volume of tissue which was probably involved with tumour and to which tumour might have spread. Consequently, the patient had Wertheim's hysterectomy followed by radiotherapy. The term "Wertheim's hysterectomy" as used here indicated a radical abdominal hysterectomy, bilateral salpingo-oophorectomy, and removal of lymph nodes and lymph-node-bearing tissue from the iliac and obturator regions, with full intent of achieving a cure. Our patient was only 33 years of age. This would indicate that she still had a long life expectancy if she could be cured of her disease.

It is evident from this patient that Wertheims hysterectomy can be accomplished with low morbidity and mortality. The patient did not have a febrile course or require any blood transfusion

intraoperatively. Although fistula formation is commonly regarded as the most serious complication of this operation (5), it did not occur in our case. This is common in those who have had previous prior irradiation. Pre-op radiotherapy is not practiced in our unit. The disadvantages associated with pre-operative radiotherapy include radiation reaction to tissues which make operation technically difficult, poor healing and increased chances of operative complications.

Benedet et al (4) found that approximately 20% of the patients with negative nodes at the time of radical surgery eventually died of cervical carcinoma. The absence of metastatic disease in pelvic lymph nodes at the time of surgery is, indeed, a favourable prognostic sign, but it is of significance only if a study of the removed lymph nodes has taken place. In any case, micrometastasis is not always detected by routine microscopy. Hence, our patient had post-op radiotherapy.

However, physicians dealing with patients who had radiation therapy for cervical cancer must realize that radiation definitely does not decrease, and may actually increase the risk of malignancy in other pelvic organs (6). The risk of a second post-irradiation pelvic malignancy is thus kept in mind at subsequent follow-up.

Invasive squamous carcinoma of the cervix in the young woman is a difficult disease to treat successfully. Improvement in management can be achieved potentially through the development of improved staging technique and aggressive therapeutic modalities. However, the early detection of pre-invasive or early invasive disease through regular cytotesting of all sexually active women before the onset of symptoms is to be encouraged, because it has been suggested that we are on the verge of an epidemic of cancer of the cervix (7) - an emotive phrase it would seem, but one that increasingly bears the stamp of truth.

REFERENCES:

1. Ojwang S.B.O. Some aspects of cervical carcinoma in young African women in Kenya. East. Africa. Med. J. 62: 889, 1985.

2. Kitinya J.N., Lauren P.A., Kajembe A.H. Differential rates of carcinoma of cervix uteri among the Chagga and Pares of Kilimanjaro region, Tanzania. Int. J. Gynecol. Obstet. 27: 395, 1988.

3. Fedorkow D.M., Robertson D.I., Duggan M.A. Nation J.G. McGregor S.E., Stuart G.C.E. Invasive squamous cell carcinoma of the cervix in women less than 35 years old: Recurrent versus non-recurrent disease. Am. J. Obstet. Gynecol. 158: 307, 1988.

4. Benedet J.L., Turkom, Boyes D.A., Nickerson K.G., Bienkowska B.T. Radical hysterectomy in the treatment of cervical cancer. Am. J. Obstet. Gynecol. 137: 254, 1980.

5. Webb M.J., Symmonds R.E., Wertheims Hysterectomy: A Reappraisal. Obstet. Gynecol. 54: 140, 1979.

6. Murram D., Curry R.H., Drovin P., Cytologic follow-up of patients with invasive cervical carcinoma by radiotherapy. Am. J. Obstet. Gynecol. 142: 350, 1982.

7. Wolfendale M.R., King S. Abnormal cervical smears - are we in for an epidemic? Br. Med. J. 287: 526, 1983.

CARCINOMA OF THE ENDOMETRUIM ASSOCIATION WITH CARCINOMA OF THE BREAST:

Name:	Y.L.	Parity:	4+0
Age:	63 years	LMP:	Post-menopausal
Unit No:	881686	Admission:	29.2.1988
Nationality:	Ethiopian	Discharge:	11.5.1988

PRESENTING HISTORY:

Mrs. Y.L. was admitted to ward 44 on 29.2.1988 through the Gynaecology clinic complaining of post-menopausal vaginal bleeding on and off for the last 4 years, and a lump in the right breast for the last 8 months. This lump was slightly painful. The vaginal bleeding was not continuous or painful. The initial episode 4 years previously was associated with anxiety state - the bleeding could come for one to 3 days at a time. Sometimes it was heavy with clots and at other times it was scanty. Between such bleeding events, she had vaginal discharge.

PAST MEDICAL HISTORY:

Her past medical history was not remarkable.

OBSTETRIC AND GYNAECOLOGICAL HISTORY:

Her menarche was at 12 years, and subsequently had had regular periods lasting 3-4 days every month. Her last mentrual period occured about 8 years previously. Para 4+0. All were spontaneous vertex deliveries and all were alive and well. Last delivery was 28 years previously. She had not used any form of contraception.

FAMILY AND SOCIAL HISTORY:

She was a widow from Ethiopia , and was staying with some of her children. One of her daughters was working in Nairobi. She did not smoke or take alcohol. There was no history of diabetes mellitus or hypertension.

PHYSICAL EXAMINATION:

Her general condition was satisfactory. She was not obese, but appeared affluent. There was no pallor, oedema, jaundice or palpable peripheral lymph nodes. Clinically she was afebrile. The blood pressure was 130/80 mmHg; pulse rate was 80 per minute, respiratory rate was 22 per minute, and her body temperature was 36.8°c.

The cardio-pulmonary, and central nervous systems were grossly normal.

BREAST EXAMINATION:

There was a mass on the right breast at the left upper quadrant. This lump was hard, but not attached to the skin. It was about 4 x 4 cm^2 and non-tender. There was no tethering of the skin, no retraction of the nipple, and no peau de'orange appearance. The axillary lymph nodes were not enlarged. There was no ulceration of the breast and no nipple discharge. The left breast was clinically normal.

ABDOMINAL EXAMINATION:

The abdomen was scaphoid, and soft with no ascites. No masses were palpable and no tenderness was elicited. The liver and the spleen were not enlarged.

PELVIC EXAMINATION:

The vulva was normal. On digital examination, the vagina and the cervix showed atrophic changes. The cervix was tiny but not friable. The uterus was normal in size, anteverted and mobile. The adnexae and the cul-de-sac were free.

DIAGNOSIS:

A diagnosis of endometrial carcinoma with a breast lump was made, and the patient worked up for both laparotomy and lumpectomy.

INVESTIGATIONS AND RESULTS:

1. Haemoglobin : 14.4 g/dl.
2. Haematocrit : 41.2%.
3. Blood Group : "B" Rh "D" Positive
4. Serum Electrolytes - Na^+ : 143 mmol/l.
   K^+ : 4.4 mmol/l.
   BUN : 6.0 mmol/l.
   Creatinine : 85 mmol/l.
5. Liver Function Tests-
   Alkaline phosphatase : 16.2 KA units.
   Total proteins : 70 g/l.
   Serum albumen : 48 g/l.
   Serum bilirubin : 27 mmol/l.
6. Endometrial biopsy (15.2.88) showed bulky currettings, which had features consistent with papillary adenocarcinoma of the endometruim.

(NOTE: The patient had initially refused needle aspiration biopsy of the breast lump)

She was then prepared for lumpectomy and laparotomy at the sitting.

OPERATIONS ON 4.3.1988:

The patient was explained adequately the necessity of the required operations, and the necessary informed concent obtained. Two teams operated on her at the same time - one at the breast, and the other in the abdomen.

LUMPECTOMY:

A circumarealar incision was made over the lump on the right breast after the usual routine preparation of the skin-site. Bleeding was minimal because the left hand was used both to steady the mass and to apply temporary firm pressure. The mass was then grasped with an Allis clamp and excised. Metzenbaum scissors, in addition to the judicious use of a scalpel facilitated this removal. Following its removal, a "bimanual" exam with the fingers inside the wound and also outside the skin edges was done, but no further masses were palpated. The defect

that ensued was adequately closed in layers beginning from the very bottom of the defect, using atraumatic sutures of vicryl. This accomplished two things; it closed the defect and to the same time obliterated all dead space and possible troublesome bleeders. A cosmetic closure of the skin was accomplished with a subcuticular closure, and a pressure dressing applied to the wound.

TOTAL ABDOMINAL HYSTERECTOMY AND BILATERAL SALPINGO OOPPHORECTOMY:

The abdomen was opened via a lower mid-line incision, after the usual preparation of the skin. The following were found: the uterus was normal in size and shape; but it was studded with tumour nodules on its serosa; there were multiple peritoneal tumour seedlings within the pelvis and on the omentum. There was no ascites. The liver and the spleen were normal. The para-aortic lymph nodes were not enlarged. The ovaries were small, atrophic, but did not contain tumour nodules.

TECHNIQUE:

Clamping and cutting followed by transfixion of the round and infundibulopelvic ligaments on both sides was followed by reflection of the bladder from the cervix and vagina. (and the posterior peritoneum from the same). Ligation and cutting of the uterine vessels and parametruim were the next step. The vagina was then opened and the cervix circumcised, after which the uterus and the adnexae were removed and the pelvic peritoneum was closed over the vaginal vault which had been closed using 3 stitches of mattress sutures. Haemostasis was adequately achieved. The abdominal incision was then closed in the usual 3 layers.

POST OPERATIVE CARE:

The patient had a smooth recovery from anaesthesia. She was put on intravenous fluids and pethidine 100 mg 8 hourly for the first 48 hours before oral feeds were allowed. Ambulation was encouraged as soon as the pains were less. A bra was not required for her breast support after the lumpectomy. No blood transfusion was required. Her post-operative

haemoglobin was 12.2 g/dl.. All stitches were removed on the 8th post-operative day.

HISTOLOGY REPORT (14874/88):

(1) The first specimen was a uterus with bilaterally attached fallopian tubes and ovaries. The uterus weighed 75 g and measured 9 x 5 x 4 cm^3. On cross-section the endometrial cavity was haemorrhagic and the surrounding myometrium was firm and white on its inner one half surrounding the endometrial cavity. There was also an intramural fibroid. Microscopy: Sections of the uterus revealed a poorly differentiated adenocarcinoma of the endometroid type invading into the inner two thirds of the full thickness of the myometrium. An adjacent leiomyoma showed marked symplastic degeneration resulting in pleomorphic giant cells.

(ii) A biopsy of the right breast showed a poorly differentiated invasive ductal carcinoma of the scirrhous type.

These two neoplasms arose separately and had different morphologic features.

HORMONAL THERAPY:

The patient was started on stilboestrol 10 mg daily three weeks after surgery.

RADIOTHERAPY:

She was started on deep X-ray therapy to the pelvis 5 weeks after surgery. In total she received 50 Grays of DXT to the pelvis over a period of 4 weeks.

She was discharged home on 11.5.1988 at her daughter's request, and got lost to follow-up. On discharge, she was still on stilboestrol.

DISCUSSION:

The patient presented was a 63 year old post-menopausal patient who had both endometrial carcinoma and breast cancer. These two tumours were both microscopically proven and reported by the pathologist to be independent neoplasms. It seems that in addition to the tendency to occurrence in older women there may be a clustering of the two diseases in time. In our patient it is most likely that the endometrial carcinoma came first, and the breast cancer was the second primary malignancy.

Wangai (1981) found the malignant tumours of the uterine body to be the 4th commonest gynaecological malignancies at Kenyatta National Hospital contributing to 6.2% of all gynaecological tumours. The endometrial carcinomas were 66.2% of all the malignant tumours of the uterine body (1).

Cook extensively reviewed the literature on multiple primary tumours and found positive correlations between the primary carcinoma and the site of the second primary in 12 paired sites. For instance, an association was found between the primary endometrial carcinoma and a second primary of breast, and between primary ovarian and second primary endometrial carcinoma.

MacMahon et al (2) has suggested that the excess of mammary cancer is restricted to women more than 60 years of age at the time of the first tumour, and also possibly, to the 10 - years period following the uterine cancer - as was clearly shown in our patient.

The possibility immediately comes to mind that, contrary to common clinical belief, uterine cancer may metastasize to the breast. Since the predominant primary tumours of both these sites is an adenocarcinoma, the uterine metastases in the breast may be mistaken for a mammary primary - this becomes more so with the extensive wide spread that was seen at laparotomy. However, in this case, the pathologist made an explicit statement that "these two neoplasms arose separately and had different morphologic features".

The most likely explanation of an association between mammary and uterine cancer of the relatively low order of magnitude observed, is, not that there is any causal relationship of one disease to the other, but that there is subgroup of women with demographic, endocrine or other characteristics that predispose to both conditions (2). Infertility might be one such characteristic, since both diseases show inverse association with parity.

However, it seems unlikely that this association could explain the whole of the excess. Our patient was neither nulliparous nor infertile.

The association of leiomyoma of the uterus and endometrial carcinoma was typically demonstrated in our patient. However, the cancer - corpus syndrome (the endometrial cancer type of silhouette) comprising of hypertention, diabetes mellitus and obesity, were conspicuously absent. At laparotomy, there was no ovarian pathology. Nevertheless, she demonstrated other features such as early menarche at 12 years and late menopause at 55 years.

Surgical extirpation of the uterus and adnexae has been generally considered to be the Keystone of optimal therapy of endometrial carcinoma (3). Accordingly, our patient had total abdominal hysterectomy and bilateral salpingooophorectomy. The uterus is a common site of local failure. If and when possible, it must be removed (5). The purpose of surgery in our patient was therefore an attempt to fit the treatment to the patient and not the patient to the treatment. Radiotherapy was given to the pelvis as an adjuvant measure to decrease the incidence of vaginal recurrences and to increase the 20% survival rate - since this was a stage IV B tumour. The good prognostic factors in our patient included the normal size of her uterus and the non-involvement of the cervix, but the poor prognostic factors included distance spread by intraperitoneal dissemination, deep myometrial invasion (more than 0.5 cm) and poor histological grade (G3). It has been shown that patients with undifferentiated lesions (G3) have a higher incidence of local recurrences, spread beyond the uterus, and nodal metastasis, and their 5 year survival is significantly lower than those with well differentiated lesions (G1) (5).

The patient discussed has shown that multiple primary malignant neoplasms can no longer be considered pathological curiosities.

Such patients with multiple tumour pathology are a high risk group for further malignancy and clinicians should be fully alert to this possibility. Surveillance must therefore be lifelong.

REFERENCES:

1. Wangai E.N. A ten year review of the malignant tumours of the uterine body in Kenyatta National Hospital. M. Med. Thesis. University of Nairobi. 1981.

2. MacMahon B. and Austine J,H. Association of carcinoma of the breast and corpus uteri. Cancer 23: 275, 1969.

3. MacLellan D.G., Ireton H.J.C., Hardy K.J. Multiple primary malignant neoplasms: A clinical report and review of the literature. Aust. N.Z.J. Surg. 52: 354, 1982.

4. Hoover R., Everson R., Fraunene J.F. Jr., Myers M.H. Cancer of the uterine corpus after hormonal treatment for breast cancer. Lancet 1: 885, 1976.

5. Yoonesi M., Anderson D,G., Murley G.W. Endometrial carcinoma: causes of death and sites of treatment failure cancer 43: 1944,1979.

6. Taylor S.G. Adjuvant Treatment of Breast Cancer. Current Concepts in Oncology, 8: 2,1986.

7. Cook - Quoted by 3.

METASTATIC VAGINAL TUMOUR FROM LEFT RENAL CELL CARCINOMA-PALLIATIVE THERAPY.

Name:	H.W.	Parity:	4+0
Age:	35 years	LMP:	16.10.89
Unit No.	987787	DOA:	4.11.89
		DOD:	10.11.89.

PRESENTING HISTORY:

Mrs. H.W. was admitted to ward 5 from our Gynaecology clinic with complaints of a swelling in the vagina, cough, leg pains and dribbling of urine. The vaginal mass was an incidental finding during a family planning clinic attendance. She had no dysuria or frequency of urine. She did not know the duration of the vaginal swelling.

PAST MEDICAL HISTORY:

Her past medical and surgical history was un-remarkable.

OBSTETRICAL AND GYNAECOLOGICAL HISTORY:

Her menarche was at 16 years, and subsequently had regular periods lasting 4 to 5 days every 21 days. There was no history of post-coital bleeding or vaginal discharge. She was para 4+0. All were spontaneous vertex deliveries. Last delivery was in 1983. Her last normal menstrual period was on 16.10.1989, which lasted for 4 days. She had used an intra-uterine contraceptive device for 5 years (1984 - 1989). This was removed in September 1989 because of severe backache.

FAMILY AND SOCIAL HISTORY:

She was married since 1976, and was staying with her family at Kiambu. There was no family history of such an illness. She did not smoke or take alcohol.

PHYSICAL EXAMINATION:

Her general condition was fair, although slightly wasted. Pallor was mild. She was afebrile. There were no palpable peripheral

lypmh nodes. The supra-clavicular region was free. She had no oedema. Her blood pressure was 110/60 mmHg; pulse rate 76 per minutes; respiratory rate was 22 per minute. Her cardio-vascular and central nervous systems were grossly normal.

CHEST EXAMINATION:

The chest was symmetrical and moving with respiratory efforts. The trachea was central. Air entry was equal both sides. There were no adventitious sounds. Percussion note was resonant.

ABDOMEN EXAMINATION:

The abdomen was scaphoid. There was a firm, fixed mass at the left renal angle. This mass was not tender, and measured about 10 cm in diameter. The spleen was not enlarged. The liver was enlarged to 12 cm below the costal margin, mid-clavicular line. It was soft but not-tender.

PELVIC EXAMINATION:

External genitalia was normal. The extenal urethral meatus was also normal. There was a small, firm, fungating, mass at the lower anterior one-third of the vagina. This measured about 1 x 1 x 1 cm^3 with a small pedicle and an indurated base - the urethra was involved in the middle third. The mass was red in colour, friable and bled easily on touch. (Note: When the patient presented initially at the clinic, the mass was polypoidal with a small stalk and polypectomy was done then. Histology showed clear-cell adenocarcinoma).

DIAGNOSIS:

A diagnosis of a vaginal tumour was made - probably metastatic from the abdominal tumour.

INVESTIGATIONS RESULTS:

- Haemoglobin ; 10.0 g/dl.
- Haematocrit : 28.5%.
- Serum chemistry Na^+ : 148 mmol/l.
  Ka^+ : 5.2 mmol/l.
  BUN : 28 mg/dl.

. Liver Function Tests

Alkaline phosphatase	: 15.3 KA units.
Total Proteins	: 78 g/dl.
Albumen	; 39 g/dl.
Bilirubin	: 6 mmol/l.

. Abdominal ultrasound: Liver enlarged with its parenchyma uniformly dense. Right kidney normal. Left kidney was not seen - in its place was a large solid mass from the chest wall almost to the anterior abdominal wall. It was compressing the inferior vena cava. The spleen could not be made out separately.

. X-ray Lumbar spine showed spondylolithesis at L5-S1 region with loss of the normal lordotic curvature.

. Chest X-ray: Nodular opacities spread all over the lung fields.

. I.V.U. - Right duplex ureter. Normal function of right kidney. Left kidney showed little late excretion. Bladder emptying was poor.

. Urinalysis: Microscopic haematuria.

. HISTOLOGY: Clear - cell carcinoma in the vagina.

MANAGEMENT:

The patient was given only palliative therapy with analgesics (inform of non-steroidal) anti inflammatory agents and narcotic analgesics). Her nutrition was improved. The chemotherapeutic agents that could have been tried such as 5 - fluoro - uracil and Cisplatinum were not available in the Hospital (Prof. kasili). In any case the tumour was already advanced and in stage IV, and renal cell carcinomas are known to respond poorly to chemotherapy.

Seen in the Urology clinic on 8.11.1989, she was advised to be followed up at the nearest Hospital. She was thus discharged home on 10.11.1989 to be followed up at Kiambu District Hospital.

DISCUSSION:

Metastatic tumours in the vagina are more common than the primary vaginal carcinoma - the latter inturn represents only 1% to 2% of all gynaecological malignant tumours (1-3). Infact a tumour should not be considered to be of a primary vaginal cancer unless there is no other primary tumour elsewhere in the body. The purpose here-in is to present a 35 year old patient who came to us with a clear-cell adenocarcinoma in the vagina most probably a metastasis from the left renal cell carcinoma.

The incidence of metastatic tumours in the vagina at the Kenyatta National Hospital is unknown, nor is that of the primary ones.

Adenocarcinoma of the vagina may arise from the urethra, Bartholins gland, the rectum, or bladder, the endometrial cavity, the endocervix, or an ovary or may be metastatic from a distant site (2). In the patient under discussion, it was from the left kidney. Metastatic cancers of the ovary and cervix are usually located at the vaginal apex, while metastases from endometial cancer almost invariably appear on the anterior vaginal wall, under the urethra. Metastatic intestinal cancers have a characteristic dimpled appearance (1). In our patient, the tumour was polypoidal, friable and haemorrhagic. The vagina is also often the site of metastasis from choriocarcinoma - which appear as dark haemorrhagic nodules resembling thrombosed varices.

The occurrence of hypernephromatoid structures in the vagina either as fetal rests or as metastatic phenomena from a malignant tumour of similar character is rare (3). Burkitt (4) in a study of 20 patients with metastases from renal tumours, reported no metastases to the vagina. Martzloff and Manlove (3) reported one patient who had ovarian and multiple vaginal metastases from left renal tumour in 1949. In our patient the vaginal tumour was the first direct proof of the existence of the renal tumour. Burkitt has also stated that carcinoma of the kidney had certain unique features which are shared by no other neoplasm. Of these the most notable is the frequency with which the presenting symptoms are in no way related to the primary lesion.

Most writers attribute to Henke the first reported case of vaginal metastases from a renal cell adernocarcinoma. Henke's patient was 60 years of age. Our patient was only 35 years of age. As in our

patient, the over whelming majority of hypernephromatous vaginal metastases have occured in the presence of left renal tumours.

The major constant circulatory difference between the two kidneys occurs in the communication of the left ovarian vein with the left renal vein and left renal artery. In view of the well recognized tendency of renal cell carcinomas to invade the renal veins, it seems a fair assumption that the left ovarian vein offered the avenue by which the vaginal involvement occurred in a retrograde fashion. The occasional reported instances of ovarian and uterine involvement is also probably similarly explainable. The free anastomosis between the left ovarian vein, the pampiniform plexus, the uterovaginal venous plexus and its more distal anastomosis offers a logical explanation for the vaginal dissemination of the tumour in our case.

Numerous authors (1,2,3) place considerable stress on the apparent predilection of the hypernephromatous vaginal metastases to appear on the left anterior vaginal wall near the external urethral meatus and they are of the opinion that bleeding from this source may be the first sign of mischief. References to our patient showed that she had no vaginal bleeding as the initial symptom: instead she had a polypoidal mass on the anterior wall of the lower third of her vagina. Tumours which metastasize to the vagina, presumably via, the blood stream, often show a predilaction for localisation in the distal vagina and frequently in the anterior aspect near the extrenal urethral meatus (3).
This case also suggests that in the event of a clear cell carcinoma being diagnosed in the vagina, an exploration of the kidney becomes a logical and therefore a justifiable procedure.

Carcinoma of the kidney was first described by Grawitz in 1983. And since then many other cases have been reported in the world literature. Most of these renal carcinomas are advanced when diagnosed, as was very evident in our patient. The only cure for renal carcinoma is complete surgical clearance. Radiotherapy alone has no curative role and chemotherapy has not been shown to have any therapeutic effect (6).

In the presence of multiple metastases as occurred in our patient, there is no place for nephrectomy. It has been suggested that metastases regress after nephrectomy, but this is such an uncommon event that nephrectomy was unjustified in our patient. The incidence of spontaneous regression is much less than the operative mortality (7). It must also be remembered that regression is not a cure but merely a temporary change in radiographic appearance.

There is a very wide range of reported prognoses in renal carcinoma. At least 30% of patients have demonstrable metastases at presentation (7), and of these less than 10% will survive for 5 years. Naturally, our patient had a poor prognosis.

REFERENCES:

1. Rubin P. (ed). Clinical Oncology: A multidisciplinary approach. Sixth Edition. American Cancer Society. 1983.
2. Benson R.C. (ed). Current Obstetric and Gynecologic Diagnosis and Treatment. 5th Edition. Lange Medical Publication. 1984. Los Altos.
3. Martzloff K.H. and Manlove C.H. Vaginal and ovarian metastases from Hypernephroma. Surg. Gynecol. Obstet. 88: 145, 1949.
4. Burkitt R.T. Carcinoma of the kidney. East African Med. J. 29: 175, 1952.
5. Henke. Quoted by 3.
6. Kasili, Personal communication.
7. Woodhouse C.R. Renal tumours. Surgery: International edition. 6: 1694, 1989.

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A STUDY TO DETERMINE HUMAN IMMUNODEDICIENCY VIRUS SEROPREVALENCE IN PATIENTS PRESENTING WITH PELVIC INFLAMMATORY DISEASE AT THE KENYATTA NATIONAL HOSPITAL.

SUMMARY:

A lot has been written about the relationship between Human Immunodeficiency virus (HIV) infection and sexual behaviour. Its occurrence among prostitutes and other people with multiple sexual partners is well documented in the world literature (1-6). However, the association between HIV infection and pelvic inflammatory disease (PID) is unknown. Many of the patients who present with PID have multiple sexual consorts, and the PID in some of them is due to sexually transmitted diseases such as gonorrhoea and chlamydia. In Kenya it is estimated that the incidence of PID is 360 per 100 000 female population, and that it accounts for a sizable number of admissions to the emergency gynaecological wards (7). At the KNH, PID is the second commonest cause of admission after abortions (7,8, 9) in the acute gynaecology ward.

The pattern of spread and risk factors are more or less the same for HIV infection and PID. This study therefore attempted to look at the association if any between PID and HIV infection at the acute gynaecological ward of the KNH.

Serum specimens of 196 patients who presented with pelvic inflammatory disease (PID) at Kenyatta National Hospital (KNH) during a three-month period were tested for human immunodeficiency virus-1 (HIV-1). Those that tested positive on repeat ELISA test were subjected to Western blot confirmatory test. Overall 41 patients (20.92%) were seropositive for HIV-1 antibodies. Of these 22 (53.7 %) were married women; 13 (31.7%) were single, and 6 (14.6%) were either separated or divorced. There was a low contraceptive use amongst these patients. Most of them were nulliparous or of low parity. 20 (23.81%) patients of those who had multiple sexual partners were seropositive for HIV. "Many" partners provided multiple antigenic stimuli. But when compared to 21 (19.4%) of those who had had only one sexual partner, there was no significant statistical differences. Cervical lymphadenopathy was present in only one patient. No opportunistic infections, or cases of Kaposi's Sarcoma were present in any patient.

Thus many of the patients presented at an early stage of the disease spectrum according to the Walter-Reed staging classification. The relatively high rate of HIV seropositivity among those who present with PID indicates that transmission of acquired immunodeficiency syndrome is continuing, and documents the need for testing and counseling programs in the acute gynaecological wards.

INTRODUCTION:

The term Acquired Immune Deficiency Syndrome (AIDS) was first used in 1981 in the United States (U.S) to describe the condition in a number of previously healthy young homosexual men who presented with severe opportunistic infection (s) and/or Kaposi's sarcoma which was indicative of a deficiency in cellular immunity (10,11). Since then several reports have confirmed the presence of AIDS in many countries including Kenya (1,2,4,12,15). In July, 1987, AIDS became a notifiable disease in Kenya, which uses the WHO clinical case definition for AIDS, modified in Kenya to require a positive serologic test for HIV antibody (2).

The Human Immunodeficiency Virus - (HIV-1) previously known as Human Lymphotropic virus (HTLV III), lymphadenopathy associated virus (LAV) or AIDS associated virus (ARV) was identified as the causative agent for AIDS and isolated from a human patient with lymphadenopathy in 1983 in US and France (16,17). The virus is a human retrovirus (16,17,18,19). In Africa HIV-1 is found predominantly in Central and East Africa, and more recently discovered HIV-2, restricted (so far) to the Western Africa.

Like all restroviruses, HIV infects via receptors on the cell surface, and uses reverse transcriptase to transcribe its RNA into the hosts DNA (18). It preferentially infects the CD4+ (helper inducer) T4 subset of the lymphocytes (16,18). There is evidence that CD4+ antigen expressed on the T helper/inducer lymphocyte is the receptor for HIV virus (18). Due to the tropism for the T4 cell and its cytopathic effect there is absolute reduction of T4 cell and a reversal of the T4 to T8 ratio (18,19). The T4 lymphocyte is a central figure in the immune response intimately involved with monocytes, macrophages, cytotoxic T-cell and B-cells in modulating the immune response (19).

The B cells in AIDS patients are polyclonally activated and this is depicted as raised level of total immunoglobin predominatly lgG and lgA (22).

Since B cells are actively proliferating they are incapable of responding to signals that normally trigger them hence the frequent occurrence of pyogenic infection (22).

Monocytes and macrophages are infected and this leads to defective chemotaxis and extracellular killing (16). Infection of brain cells by HIV has also been demonstrated (16).

Culture of HIV is specific but expensive, time consuming and not widely available. The only other presently available screening tests are those for antibodies to HIV. Sensitivity and specificity of these tests in defining HIV infection in high-risk groups are high, testing risk - group members has shown high rates of antibody positivity, while studies of populations not at risk have shown low rates of positivity (23). The most commonly available antibody test uses the ELISA technique. All positive HIV ELISA results MUST be confirmed using the more specific Western blot technique (15, 23, 24). In persons not at risk for AIDS, up to 50% of HIV ELISA - positive test results may be false - positives (23).

The risk of sexual spread of HIV to a person is primarily determined by the number of sexual partners and the prevalence of infection amongst them (25). Initially homosexuality was regarded as the major route of transmission. However, in the recent past, heterosexuality and bisexuality have been identified as important routes of transmission (5,6,15,25). In studies conducted among African AIDS patients heterosexuality was found to be the major route of transmission (23,24). Furthermore these cases tended to be more promiscous when compared to those not affected.

An additional small but important problem is the potential for spread by semen donation to women receiving artificial insemination by donor (AID) (25).

Spread or transmission may occur among parenteral drug abusers who share their equipment ("works") (23,25). Many of the affected persons are women of child-bearing age (25).A substantial proportion of these people engage in prostitution. (1,2,3,4,5,6). Transmission by blood transfusion can be reduced by widespread screening of

blood for HIV before transfusion.

Maternal - fetal spread of HIV is largely due to transplacental spread (vertical transmission) occuring early in pregnancy (25), but can also occur through breast-milk. The clinical manifestations of AIDS are protean but Amayo EO (15), while reporting on 50 confirmed AIDS patients at K.N.H. described the following symptoms and signs: unexplained weight loss (92%), fever, generalised lymphnode enlargement (24%), Oral thrush (66%), dysphagia (50%) chronic cough (46%), Maculo - papular pruritic skin rash, Kaposi's Sarcoma (10%), and 56% of the patients had haemoglobin less than 10 g/dl.

These clinical features agree with what has been reported in the world literature.

HIV infection usually occurs asymptomatically, but seroconversion may follow an acute glandular fever-like illness with tender lymphadenopathy, sore-throat, maculopapular rash, fever, or encephalopathy. Complete recovery occurs, although enlarged nodes may persist as persistent generalised lymphadenopathy (26).

The occurrence of AIDS in Africa is now well documented (1,2,4,11, 12,13,14,15,20,21,24,25) but the boundaries of its epidemic in the continent have not yet been determined. Inspite of the speed of research, the disease is still ahead, and AIDS is emerging as the first major lethal pandemic of the latter 20th century; incidence is accelarating in all groups (16). It affects mainly the urban middle class, but its recent arrival - less than a decade ago - means that it is still evolving (18). Amayo (15) found that HIV mainly affects females aged 21-25 years as compared to the males who are 26-30 years of age. HIV is the disease of the 1980s and 1990s, and is currently occupying the minds of many people. HIV is a sexually transmitted disease (STD) and appears to be more prevalent among prostitutes and people with multiple sexual partners.

P.I.D. is also to some extent as a result of STD and tends to be more common in women with multiple sexual partners. Association between PID and HIV if any has not been documented before. It was against this background therefore that this study was designed and conducted.

RATIONALE FOR THE STUDY:

AIDS and PID seem to have alot of things in common, viz:

(i) Promiscuity seems to play a role in their transmission.
(ii) Both tend to affect relatively young females in their 20s.
(iii) Both tend to be increased in women with sexually transmitted diseases.
(iv) There is no report directly relating PID with HIV infection but:- (a) PID as a result of STD may be expected to be related to HIV infection. (b) Those patients with previous or recurrent episodes of PID may be seropositive to HIV antibodies since it takes time before seroconversion. (c) HIV infection rate would be expected to be high in women with PID due to STD.
(v) The devastating medical, social and economic consequences of AIDS and the unknown future course of the disease have created tremendous demand for identification and implementation of control measures. Hence the need to identify the people at risk of HIV infection.

BROAD OBJECTIVE:

To determine the seroprevalence of HIV antibodies among women presenting with pelvic inflammatory disease and their characteristics in the Acute Gynaecological ward at Kenyatta National Hospital.

SPECIFIC OBJECTIVES:

1. To determine the seroprevalence of HIV antibodies among the patients who present with PID.
2. To describe the characteristics of the patients who have PID and are also seropositive for HIV and compare with those with PID but seronegative for HIV.

MATERIALS AND METHODS:

STUDY DESIGN:

This was a descriptive cross-sectional study to determine the seroprevalence of HIV antibodies in Kenyan female patients who presented with PID.

STUDY AREA:

The study took place in the Gynaecology Services at the Kenyatta National Hospital in the acute gynaecology ward (popularly known as ward 6).

STUDY PERIOD:

The period of study was 3 months from 1st May, 1988 to 31st July, 1988.

STUDY POPULATION:

All patients who were admitted to the acute gynaecology ward (during the study period) with a diagnosis of PID formed the study group, and only those patients who agreed to give informed consent and met the inclusion criteria were enrolled in the study. To establish the clinical diagnosis of PID, a patient presented with low-seated-abdominal pain AND two or more of the following symptoms and signs: abnormal vaginal discharge; fever (temperature of 38°c and above); vomiting; marked tenderness of the pelvic organs on bimanual examination; and positive bilateral cervical excitation test. Patients were excluded if they were not willing to join the study, or if they had had a history of recent instrumental procedure (e.g. evacuation for incomplete abortion) of less than 6 weeks' duration.

CLINICAL METHODS:

Patients' data was obtained by direct questioning of the patients' themselves. Each patient had a medical history taken and examined by the investigator. Interviews were conducted confidentially.

LABORATORY METHODS:

In all patients recruited, 5 ml of venous blood sample was drawn from a large vein in the antecubital fossa using vacuumed non-heparinised sterile disposable syringes and disposable needles and placed in plain bottles. This blood sample was left to stand, centrifuged and serum extracted in the laboratory. These serum samples were first tested with the ELISA method. This was a test in which the viral antigen was attached to plastic and if antibody was present, a colour change occured. If the test was positive,

the test was repeated. If the result was again positive, a confirmatory Western blot test was performed. This latter test used disrupted virus and the proteins were separated on a gel. The patients' antibody attached to the various proteins and could be identified as bands of specific antibody on the gel with a second antibody. Test results were considered to be positive only if both the ELISA and Western blot results were positive. The tests were performed in the Laboratory at the Department of Obstetrics and Gynaecology (University of Nairobi) with the help of two Laboratory technicians.

DATA MANAGEMENT AND ANALYSIS:

Socio-demographic and clinical data was recorded on separate semi-structured questionaires for each patient. Laboratory data was also entered on the same questionaires when the results were available at the end of the study.

Statistical analysis was done with the help of a panasonic solar calculator. The HIV seropositive and HIV seronegative patients were compared using categorically grouped variables in contingency tables with the chi squared statistic or students t-test (paired-tail) where appropriate.

ETHICAL ASPECTS:

This study project was approved by the Research Committee in the Department of Obstetrics and Gynaecology. Permisssion to carry out the study at the KNH was sought and granted by the KNH Ethical and Research Committee: and by the National AIDS Committee.

All study participants were explained the whole procedure privately, verbally and individually. Those willing to join the study were only recruited after an informed consent was obtained. Those patients who declined to be recruited in the study were not discriminated against in any way and continued to receive the usual hospital services. Patients' confidentiality was observed.

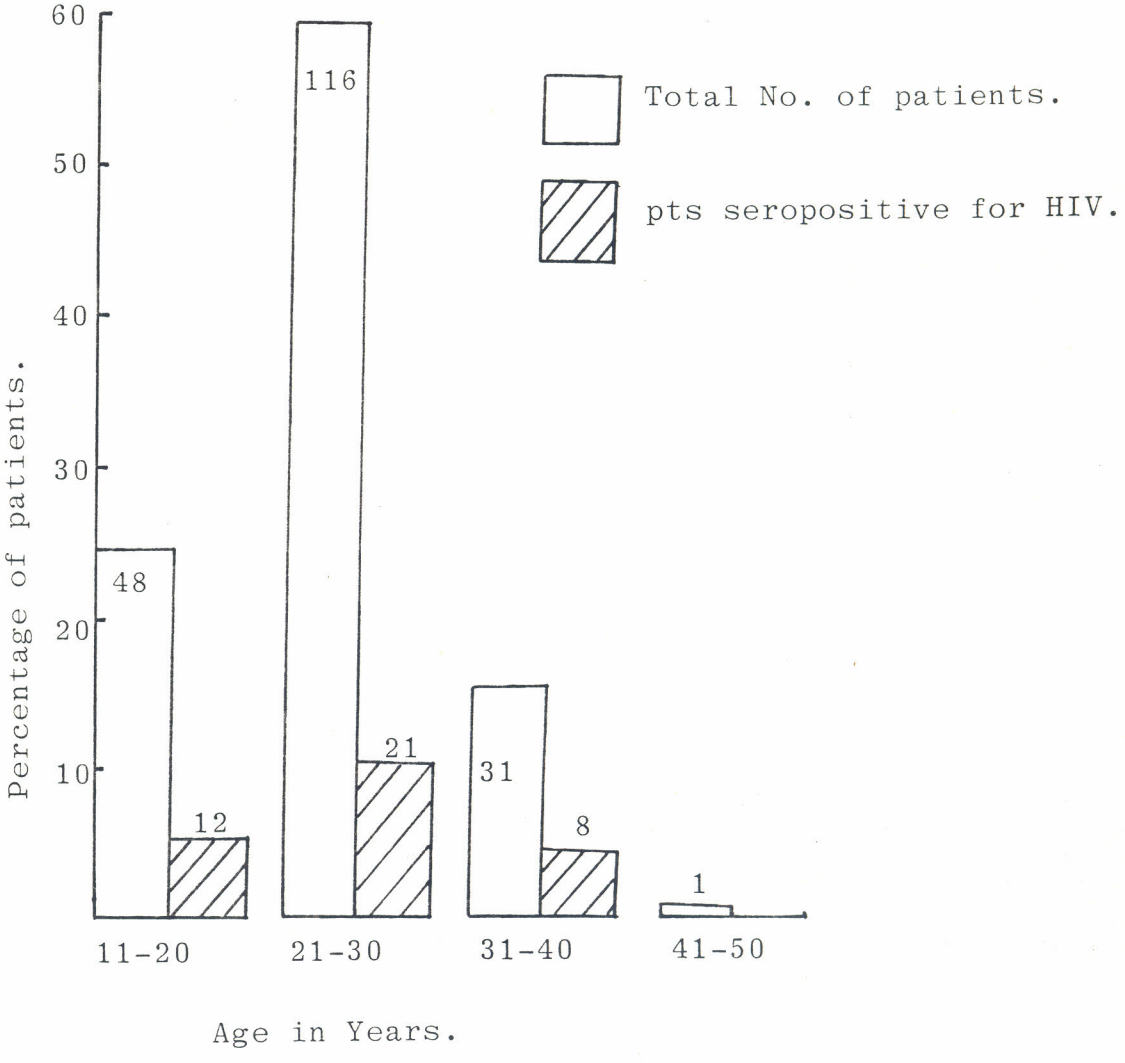
CONSTRAINTS:

Several problems with gathering and interpreting our data must be taken into account before our results can be generalized. Recruitment into this kind of study is difficult, and these women clearly are not representative of the general population. In addition, information about when the index case seroconverted is unavailable, and most women had long-term relationships with their sexual consorts. This study may also be compromised by the small sample size and lack of longitudinal data.

RESULTS:

196 patients were recruited in the study group. The age range was 14 to 49 years, with the mean age of 24.88 years. The age range for those who tested positive for HIV was 16 to 38 years with a mean of 24.56 (± 5.9) years. The majority were aged between 21 and 30 years. For those who were seronegative for HIV, the mean age was 24.95 (± 5.2) years. The difference in the mean ages was not statistically significant (P>0.05).

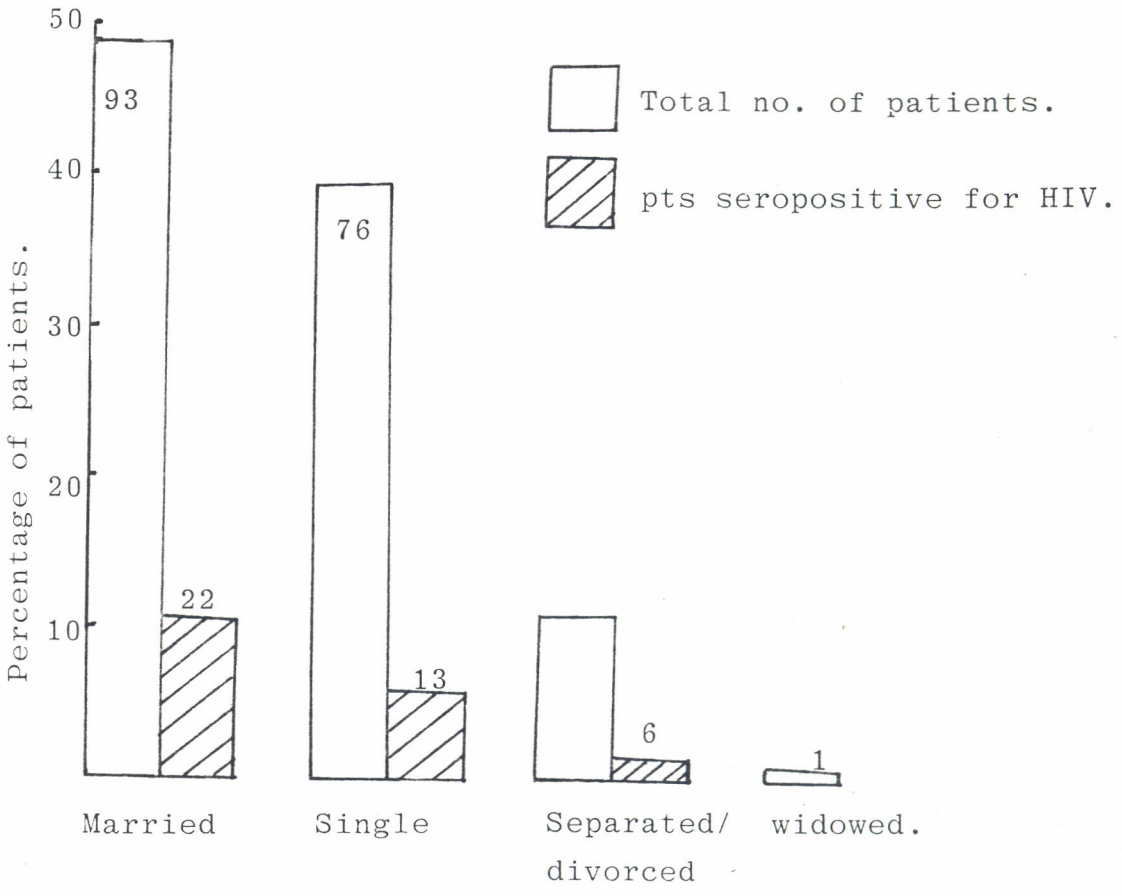
FIG 1. Distribution of patients by age.



There were 93 (47.4%) married women who had PID. Of these 22 (23.66%) tested positive for HIV. compared to only 13 (17.12%) of the 76 women who were single and tested positive.

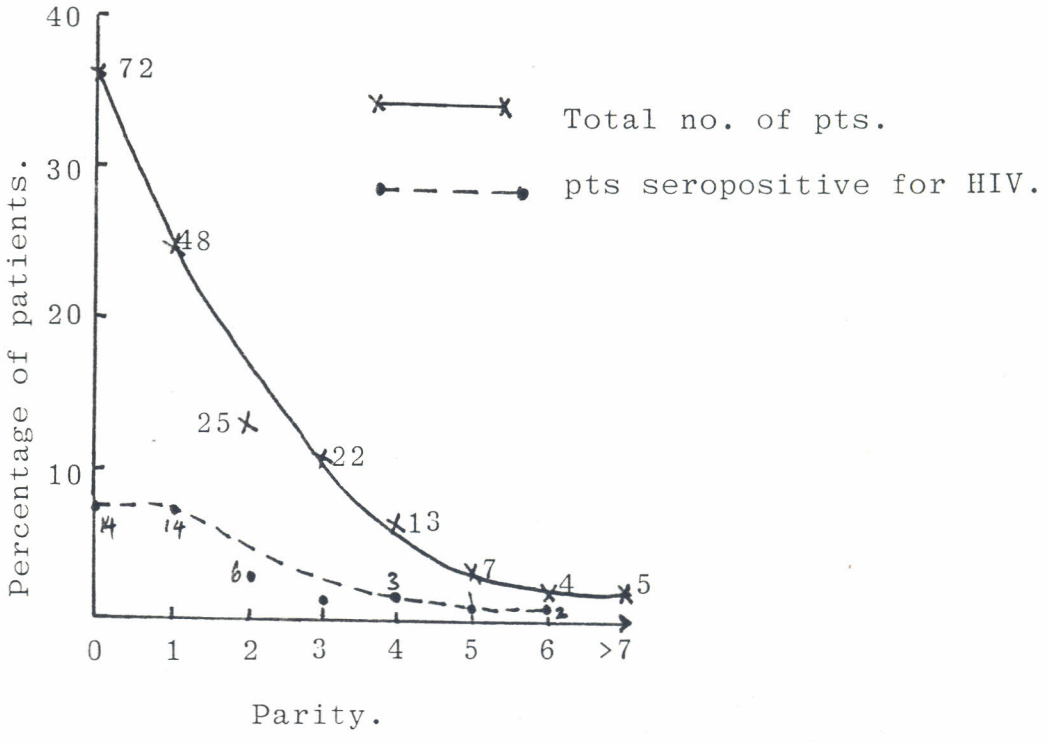
There was no statistically significant difference, however. None of the three patients who were widowed tested positive. 6 patients (25%) of the 24 who were either separated or divorced tested positive for HIV, but there was no statistical significance between the married women and the separated/divorced women who were seropositive.

FIG. 2. Distribution of patients by marital status



The figure below shows that PID is a disease of nulliparous and the low parous women. There were 72 women who were nulliparous; of these 14 (19.44%) tested positive for HIV. 48 patients were para one, and 14 (29.44%) were seropositive for HIV. Patients who were more than para 6 were seronegative for HIV. The parity for those who were seropositive ranged from 0 to 6, with a mean of 1.4 (± 1.7); and for those who were seronegative, it was from 0 to 14 with a mean of 1.7 (± 2.1). However, there was no significant statistical difference between these means.

FIG. 3. Distribution of patients by parity:



21 (26.25%) of those who belonged to catholic religion were seropositive for HIV, as compared to only 13 (15.85%) of those who belonged to the protestant group. This was statistically significant ($0.05<P<0.10$). 1 (12.5%) patient who belonged to the Muslim religion, and 2 (66.7%) patients who belonged to no religion were seropositive for HIV, However, the number of patients were too few for statistical analysis.

TABLE 1. Distribution of patients by religion:

Religion	No. of pts.	Seronegative		Seropositive for HIV	
		No.	%	No.	%
Catholic	80	59	73.75	21	26.25
Protestant	82	69	84.15	13	15.85
Muslim	8	7	87.50	1	12.50
Others	23	19	82.60	4	17.40
None	3	1	33.33	2	66.67
	196	155	79.08	41	20.92

Although patients with PID came from all the surburbs of the city, those who were seropositive for HIV were mainly from Eastleigh, Kariobangi, Dandora and Kibera estates. 5 (33.3%) patients of those who came from Dandora were seropositive, compared to 5 (20.0%) patients from Kibera estate. This was statistically significant ($0.05<P<0.01$). 5 (55.6%) patients of those who came from Eastleigh estate were seropositive for HIV, but the number of patients was too small for statistical analysis (TABLE II).

TABLE II. Distribution of patients by Residence:

	No. of patients	Seronegative		Seropositive	
		No.	%	No.	%
Kibera	25	20	80.00	5	20.00
Dandora	15	10	66.67	5	33.33
Mathare	11	10	90.91	1	9.09
Kariobangi	12	8	66.67	4	33.33
Huruma	10	9	90.00	1	10.00
Eastleigh	9	4	44.44	5	55.56
Kawangware	7	6	85.71	1	14.29
Others	107	88	82.24	19	17.76
	196	155	79.08	41	20.92

The table below shows that 9 (27.27%) patients of those who were un-employed, were seropositive for HIV antibodies. Whereas 14 (24.56%) house-wives tested positive. The difference was not statistically significant however (P>0.05). It is possible here that strict monogamous relationship is not widely practiced amongst the house-wives or their partners. Those in school/college included students and teachers only. 1 (6.25%) of them tested positive for HIV, as compared to 2 (2.5%) of those who work in offices or factories who were seropositive. It is also of interest to note that of the 17 house-girls tested, 3 (17.65%) were found to be positive for HIV. But the numbers were too small for statistical analysis. "Others" in the table included bar-maids, vegetable hawkers, sales-girls, "second-hand-cloth" sellers" etc. They had 8 (25.81%) seropositivity as compared to 14 (24.56%) house-wives. There was no significant statistical difference between the two groups, however. (TABLE III).

TABLE III: Distribution of patients by occupation.

Occupation	No. of pts	Seronegative		Seropositive	
		No.	%	No.	%
Not employed	33	24	72.73	9	27.27
House-wife	57	43	75.44	14	24.56
In school/college	16	15	93.75	1	6.25
Employed in office/factory	16	14	87.50	2	12.50
Self-employed	26	22	84.62	4	15.38
House-maids	17	14	82.35	3	17.65
Others	31	23	74.19	8	25.89
	196	155	79.08	41	20.92

5 (33.33%) patients who had no formal education were seropositive for HIV antibodies, and tops the list below; compared to 26 (21.67%) patients who had ever had education upto primary level, and 9 (15.79%) patients who had ever had secondary education level; and 36 (24.83%) of those who have ever had any "formal education" who were seropositive, there was no significant statistical difference. There was also no significant difference between those who had primary education and those who had had secondary education ($P > 0.05$). The number of the patients who had had college education was too small for any statistical comparison.

TABLE IV. Distribution of patients by education level:

Education	No. of pts.	Seronegative		Seropositive	
		No.	%	No.	%
None	15	10	66.67	5	33.33
Primary	120	94	78.33	26	21.67
Secondary	57	48	84.21	9	15.79
College	4	3	75.00	1	25.00
	196	155	79.08	41	20.92

The table below shows that, of those who had Not used any form of contraception, 33 (23.74%) were seropositive. This was statistically significant when compared to those who had ever used any form of contraception ($0.010<P<0.05$). 5 (17.24%) patients who had ever used the "pill" were seropositive.

Only 1 out of the 7 patients who had ever used injectable contraception was seropositive. 2 (11.11%) patients who had ever used intra-uterine contraceptive device were seropositive. But the numbers were too few for statistical analysis.

The one patient who had had her tubes ligated was seronegative. She was para 10+0.

TABLE V. Distribution of patients by contraceptive use:

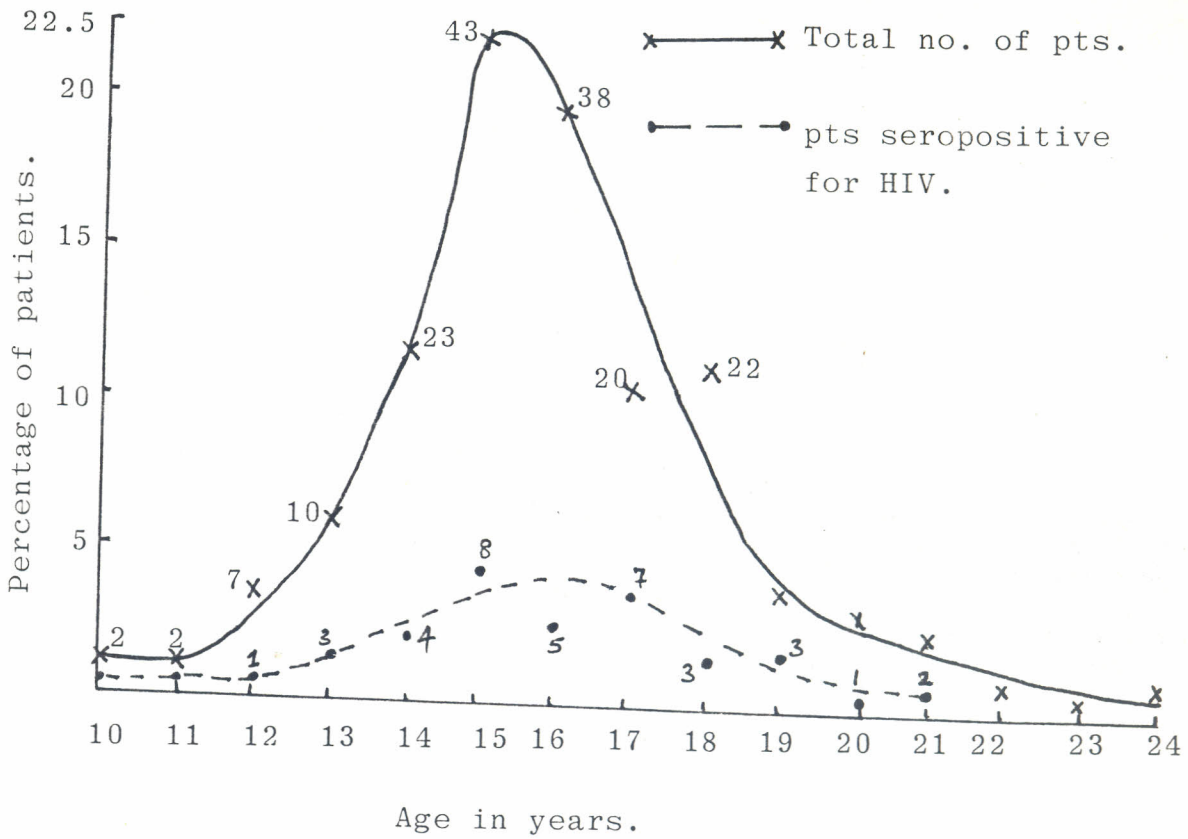
Contraceptive Use	No. of pts.	Seronegative		Seropositive	
		No.	%	No.	%
None	139	106	76.26	33	23.74
Oral Contraceptive "pills"	34	29	82.76	5	17.24
Injectable Contr.	7	6	85.71	1	14.29
I.U.C.D.	18	16	88.89	2	11.11
Sterilization	1	1	100.00	0	0.0
	196	155	79.08	41	20.92

The figure below shows that the peak age at first coitus was 15 years, and that by the age of 19 years, 174 (88.76%) of the girls had had their first coitus. The mean age at first coitus was 16 ± 2.6 years. The range was 10 to 24 years.

All those who were seropositive for HIV antibodies had had first sexual contact by age 21 years, with the mean age of 16 ± 2.5 years, and the range was 10 to 21 years. For those who were seronegative, the range of age at first coitus was 10-24 years with a mean age 16 (± 2.6) years. There was no significant statistical difference between these mean ages, however.

Over-all, 5 patients could not remember when they had their first sexual encounter, and one denied ever having had inter course although she presented with PID. She was 14 years of age, and was still in primary school, but she was seronegative.

FIG 4. Distribution of patients by age at first coitus:



The table below shows that the two patients who had not had any sex were both seronegative for HIV antibodies. Those who had three sexual partners within the preceding 6 months had the highest rate of seropositivity. 6 (40%) of these were positive for HIV. 21 (19.44%) patients who said they had only one sexual partner were seropositive compared to 13 (25%) patients who had had 3 or more sexual partners. The difference was not statistically significant ($P > 0.05$). Multiple partners provided multiple antigenic stimuli however. Most of them said they had had "many sexual partners" because of monetary purposes only.

86 (42.34%) of the patients had had more than one sexual partner in the preceding 6 months. Of these 20 (23.26%) were seropositive for HIV. This was also not statistically significant, when compared to those who had had only one sexual partner during the same 6 month period ($P>0.05$).

TABLE VI. Distribution by number of sexual partners in the preceding 6 months.

Number of sexual partners	Number of patients	Seronegative		Seropositive	
		No.	%	No.	%
None	2	2	100.00	0.00	0.00
1	108	87	80.56	21	19.44
2	34	27	79.41	7	20.59
3	15	9	60.00	6	40.00
4	8	7	87.50	1	12.50
5	3	2	66.67	1	33.33
≥ 6	26	21	80.77	5	19.23
	196	155	79.08	41	20.92

Out of the 196 serum samples tested, 41 (20.92%) were seropositive for HIV antibodies as confirmed by the Western blot test. Thus 20.92% of the patients who presented with P.I.D. in this study were also seropositive for HIV.

TABLE VII. Results of immunological tests:

Test	No. of patients	Negative		Positive	
		No.	%	No.	%
ELISA	196	150	76.53	46	23.47
Western blot	46	5	10.87	41	89.13
Total	196	155	79.08	41	20.92

Of the 41 patients who tested positive, 22 (53.66%) had a history of weight loss and 20 (48.78%) had loss of energy. There was no significant statistical difference when compared to those who were seronegative however ($P > .05$). 9 (21.95%) had pruritic skin rash (maculopapular) and 5 (12.20%) had chronic cough- and these were statistically significant when compared to those who were seronegative ($0.10 < P < 0.05$). None of the patients presented with Kaposi's sarcoma. Only one patient who was seropositive had massively enlarged, matted lymph nodes at the neck. She died during the course of this study.

TABLE VIII. Presence of clinical signs/symptoms of AIDS:

	SEROPOSITIVE		SERONEGATIVE	
Symptoms/signs	No.	%	No.	%
Weight loss	22	53.66	61	39.4
Loss of energy	20	48.78	60	38.7
Skin rash	9	21.95	19	12.3
Chronic cough	5	12.20	5	3.2
Chronic diarrhoea	3	7.32	3	1.9
Persistent fever	1	2.44	1	0.6
Cervical Lymphadenopathy	1	2.44	0	0.0
	41	100	155	100

Risk Factors for AIDS in those who were seropositive:

The only universal risk factor was heterosexuality. There was no case of lesbianism or haemophiliac. One patient admitted she was a prostitute; three had had previous blood transfusions in the past; and two had genital ulcers. No patient had a history of intravenous drug use.

Almost all the patients had had intramuscular injections in various health units in the country. None had used the addicting hard drugs or shared needles for the same.

Patient No. 051 was interesting because she was a single lady with a three month-old baby girl; and was staying with her mother who was also single, having separated from the husband. Thus both shared the same life-style. Will the baby girl follow-suit?

DISCUSSION:

In this study, we detected human immuno-deficiency virus -1 (HIV) infection in 41 (20.92%) of those who had pelvic inflammatory disease (PID). These patients performed only vaginal intercourse. Our results thus provided further support for the role for hetero-sexual contact in transmitting HIV. None of the subjects whom we studied used intravenous addicting drugs. A history of intramuscular injections of various medications was almost universal amongst these patients. These were often given at various health units in the country.

The association between PID and HIV antibodies in the patients studied is of interest. It may be that epithelial integrity is an important barrier to viral trasmission and that disease such as gonorrhoea, mycoplasma or chlamydia which cause mucosal discontinuity or bleeding, are risk factors for HIV infection. Ulcerative genital lesions may also enhance transmission of HIV, perhaps by providing a more direct portal of entry into the blood stream - but only two of our patients had macroscopic genital ulcers. Alternatively, factors increasing the risk of HIV infection may coincidentally increase the risk of PID, although we did not find any correlation between the presence of HIV -1 antibodies and the total number of sex partners.

Transmission of HIV may be associated with particular sexual activities (12). The number of sexual contacts is significantly associated with infection (12). The most likely interpretation of this finding is that each exposure is associated with a small probability of infection and that multiple contacts increase the probability of transmission. However, documented cases of transmission between a man and his female partner have been attributed to only a single sexual exposure (6,12,23). In our study, it is noteworthy that 22 (23.66%) of the married women studied were found seropositive to the HIV antibodies. We interpret this as repeated exposures to an infected partner represented a significant risk, whereas general sexual activity (as measured by number of sexual partners) was not positively correlated with HIV infection. An individual who has unprotected intercouse is in a sense, not having sex with one person but with all the partners of that person over the last several years (4).

The high prevalence of HIV-1 antibody among these patients who presented with PID was hardly surprising in view of the rapid spread

of HIV infection in Kenya (2). In July, 1987, AIDS became a notifiable disease in Kenya, which uses the WHO clinical case definition for AIDS, modified in Kenya to require a positive serologic test for HIV antibody (2). Cultural patterns of sexual behaviour, along with urban migration of the male work force and the attendant disruption of family units, are factors that may facilitate heterosexual transmission of disease in urban centres, with subsequent spread to rural areas (1).

In this study, many of the patients who were seropositive for HIV, presented at an early stage of the disease spectrum according to the Walter - Reed staging classification (27). Only one patient was at the terminal phase of the disease. HIV, like the influenza virus, can change its protein coat rapidly. Unlike victims of smallpox or influenza, but like those with polio, the victim of HIV can appear perfectly healthy and still spread the disease. As in rabies, once symptoms appear the disease is invariable fatal (4). Spontaneous recovery from AIDS is rare; and the percentage of seropositive individuals who will ultimately progress to AIDS is not known, although estimates range from 10% to 30% (6).

In this study there was no association between HIV infection and the age at first sexual contact, the use of oral contraception, occupation and educational level. 33% of those who had no formal education were seropositive for HIV, and only a small percentage of those who had had college education were seropositive. This may be due to the fact that most of those who come to our acute gynaecology ward are mainly of low socio-economic class and those who had had college education may belong to a different socio-economic stratum. The low usage of contraception amongst our study population was because most of the study participants were involuntarily nulliparous or of low parity. Unprotected sexual activity may thus be the norm for many of these patients who had PID.

The impact of HIV infection and disease on the female population is of inherent interest and concern. The medical issue in this group can be seen not only as a particular challenge to the obstetric and gynaecological practice, but also as societal issues to be addressed to - especially when one considers that the Kenyan female population who have PID and currently experiencing the brunt of HIV infection are young, sexually active, poor and some are illiterate. Female HIV infection and disease has an impact not only on the

Infected woman herself and her sexual partner(s), but also on a certain, as yet undefined, percentage of the children she will give birth to. Infact, the pricipal cause of paediatric AIDS is having a mother with or at risk for AIDS (4). Trends in women with HIV infection may be good predictors of trends in children with HIV infection.

The HIV antibody test is one of the most reliable serological tests we have. By all methods the incidence of false positives and false negatives is extremely low. Confusion arises however over the concept of sero-negative disease. Perhaps some five percent of HIV carriers are sero-negative. Thus it is possible that some of our patients who tested seronegative on ELISA test might become seropositive in the long-term immunoblot. But those patients who test positive on enzyme immunoassay but persistently negative or indeterminate on Western blot assay probably do not represent a risk for the transmission of HIV (28).

There are no specific measures, such as a vaccine or chemotherapy, for the prevention of HIV infection or the prevention of progression of asymptomatic infection to frank disease. Prevention of sexual transmission of HIV is theoretically very simple, however, it requires changes in human behaviour which may be extremely difficult. The only certain way to prevent sexual encounters or having sex with prostitutes or men who frequent prostitutes are high risk sexual activities. There is some evidence that latex condoms will prevent the spread of the virus, and that the spermicide, nonoxynol-9, will kill it after a relatively brief exposure (4). But condom use does not altogether eliminate HIV transmission. The need for an intensive, extensive and effective education campaign programme to combat HIV infection in the country is suggested.

CONCLUSION:

1. About 21% of patients who had PID were seropositive for HIV infection, but the actual figure may be even higher than this.
2. Majority of the patients were young, sexually active and poor.
3. In conformity with the age pattern, majority were involuntarily nulliparous or of low parity.
4. The number of sexual partners did not correlate positively with the seropositivity of HIV antibodies. But it may be that some study participants had difficulty in recalling the number of sexual partners in a defined time span.

From the fore-going, we wish to recommend the following:

1. Monogamous relationships should be re-emphasized.
2. The use of condoms should be encouraged.
3. The disease, not its victims, is the threat from which society must be protected through health education campaigns.
4. Those who present with PID may be a conduit through which educational and other intervention efforts aimed at reducing the risk of HIV transmission could be distributed to partners, friends and others.
5. Physicians and other hospital personnel involved in invasive surgical procedures, who necessarily and unavoidably come in contact with the blood of patients, need to be aware of their risks and take proper precautions.
   - all precautions should apply to all patients alike,
   - re-usable equipments should be thoroughly cleaned in detergent (such as 2% glutaldehyde) immediately after use;
   - even routine exams and tests involving tissue biopsy and tenacula must be done with adequate sterilization of all instruments;
   - use disposable needles for ALL injections, and after use, such needles to be discarded in "sharp containers".
   - staff who are exposed to body secretions should wear simple barrier clothing (such as plastic aprons et cetera)

and those who perform operations and venipunture should wear double rubber gloves;

- avoidance of needlestick (inoculation) injuries constitutes the main precaution required;
- in the event of spillage of blood or blood stained body fluids the flooding of the contaminated surface with strong hypochlorite solution, and washing with plenty of soap and water is recommended.

However, the long and honoured tradition of physicians tending to patients afflicted with infectious diseases with compassion and courage, must be continued throughout this AIDS era.

. Further research should be done in future with patients "without PID" as controls in a large study population, when funds become available.

REFERENCES

1. Kreiss JK, Koech D, Plummer FA, Holmer KK, Piot P, Lightgoote M, Ronald AR, Ndinya-Achola JO, D'Costa JL, Roberts P, Ngugi EN, Quin TC. AIDS Virus infection in Nairobi prostitutes spread of the epidemic to East Africa. N Engl. J. Med. 314: 414-418,1986.
2. Mueke FM, Gachihi GS, Muthami L, Mbugua G. and Agata N. National Surveillance for AIDS and Prevalence of HIV infection in selected Groups in Kenya. Paper presented at III International Conference on AIDS and associated Cancers in Africa at Arusha, Tanzania. September 14-16, 1988.
3. Rosenberg MJ and Weiner JM. Prostitutes and AIDS. A Health Department Priority? Am. J. Public Health, 78: 418, 1988.
4. Acquired Immunodeficiency Syndrome (AIDS): a commentary on the international aspects of the disease (Editorial). Int. J. Gynecol. Obstet. 26: 1, 1988.
5. Van De Perre P, Clummeck N, Carael M. Female prostitutes: a risk group of infection, with human T-cell lymphotropic virus III Lancet 2: 245, 1985.
6. Padian N, Marquis L, Francis DP, Anderson RE, Rutherford GW, O'Malley PM, Winkelstein W. Male-to-Female transmission of human immunodeficiency virus. JAMA 258: 788, 1987.
7. Sinei SKA. Sexually Transmitted Disease and Reproductive Health: Overview. J. Obstet. Gyn. East. Centr.Afr. 6: 77, 1987.
8. Carty MJ, Nzioka JM, Verhagen AR. The role of gonoccoccus in acute pelvic inflammatory disease in Nairobi. E. Afr. J. 49: 376-379, 1972.
9. Mulandi TN. Population based study on the prevalence of sexually transmitted diseases in rural set-up. M.Med Thesis. University of Nairobi. 1984.
10. Gottlieb MS, Schroff R, Sxhanker H. Wiseman JD, Fan PT, Wolf RA Saxon A. Pneumocystis carinii pneumonia and mucosal candidiasis in previously healthy homosexual men: evidence of a new acquired immunodeficiency. N. Engl. J. Med. 305: 1425, 1981.
11. Carne CA. Aids part one-opportunistic infection. Post-Graduate Doctor Africa. 8: 233, 1986.

12. Cumeck N, Mascaert-Lemone F, Maubeuge J, Brenez L, Marcels L, Acquired Immunodeficiency Syndrome in black African patients. Lancet ii: 642-657, 1983.
13. Obel, Sharif SK, McLigeyo SO, Gitonga E, Shar MV, Gitau W. Acquired Immunodeficiency Syndrome in Africa. E. Afr. J. 61: 724, 1984.
14. Okello GBA. Acquired Immunodeficiency Syndrome in an African. Medicom. November/December 6: 175,1984.
15. Amayo EO. Clinical Manifestation of Acquired Immunodeficiency Syndrome in Adults as seen at the Kenyatta National Hospital. M. Med. Thesis. University of Nairobi, 1988.
16. Wong-Staal F, Gallo RC. Human T-Lymphotropic retrovirus Nature. 317: 1199, 1987.
18. Richmond C. AIDS update. Medicine Digest. 12: 10, 1986.
19. Bowen W, Lane H, Fauci AS. Immunopathogenesis of the acquired Immunodeficiency Syndrome. Ann. Intern. Med. 103: 704, 1985.
20. Mabey DCW. Human retroviral infection in the Gambia: Prevalence and clinical features. Br. Med. J. 296: 83, 1988.
21. Lucas SB. The pathology of African AIDS. Post Graduate Doctor Africa. 10: 81, 1988.
22. Lane HC, Edgar H, Whajen A, Rook AH, Fauci AS. Abnormalities of B-cell activation and Immunoregulation of patients with acquired immunodeficiency syndrome. N. Engl. J. Med. 309: 453, 1983.
23. Horsburgh et al. Preventive strategies. JAMA.258: 818, 1987.
24. Kavoo LAP Seroprevalence of Human Immunodeficiency virus antibodies in patients with cancer of the cervix. M. Med. Thesis. University of Nairobi, 1988.
25. Pincing AJ. HIV, AIDS and Pregnancy. Postgraduate Doctor. Africa. 9: 209, 1987.
26. Forster SM. Clinical Syndromes associated with HIV. Postgraduate Doctor Africa. 8: 306, 1985.
27. Redfield RR, Wright DL, Tranmont EC: Walter Reed Staging Classification system for HTLV-III/LAV infection. N. Engl. J. Med. 314: 131, 1986.
28. Jackson J.B., MacDonald K.L., Cadwell J. et al. Absence of HIV infection in blood donors with indeterminate Western blot tests for antibody to HIV-1. N. Engl. J. Med. 322: 217, 1990.