CASE 12.

RUPTURED ECTOPIC PREGNANCY – RIGHT PARTIAL SAPHINGECTOMY

Name:	M.N.	Age:	27 years
IP no.:	0806453	Parity:	1+0
L.M.P.:	8.3.02	Amenorrhea:	8 weeks
D.O.A.:	4.5.02	D.O.D.:	9.5.02

PRESENTING COMPLAINS

M.N. was admitted to the acute gynaecological ward from home through Casualty with complains of severe abdominal pain and vaginal bleeding for one day.

HISTORY OF PRESENTING COMPLAIN

She was well until one month ago when she started having slight lower abdominal pain on the right side that was radiating to the back and worse on lying on that side.

She then started having spotting one week prior to admission. The pain increased 4 hours prior to admission with increased vaginal bleeding. She did not vomit or have diarrhea. She had no history of previous vaginal discharge or dysuria.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She was para 1+0. Her last delivery was in a spontaneous vertex delivery to a life male infant in 1998. Her menarche was at the age of 16 years. Her menses were regular and coming every 28 days and lasting 3 to 4 days.

She has not used any contraceptive method. Her LMP was on 17.1.02 and she had an amenorrhoea of 8 weeks.

PAST MEDICAL AND SURGICAL HISTORY

She did not have any significant past history.

FAMILY AND SOCIAL HISTORY

She was married with one child. Her husband works as a technician in a factory in town. She does not smoke cigarette or drink alcohol. Her husband drinks alcohol (beer). There was no family history of chronic illness.

PHYSICAL EXAMINATION

She was a young lady in fair general condition. She was afebrile with moderate palor, no jaundice or oedema. Her blood pressure was 110/60mmHg, pulse 100/minute, temperature 36.8° C and respiratory rate of 20/minute.

ABDOMINAL EXAMINATION

The abdomen was slightly distended and moved with respiration. It was soft with tenderness over the right iliac fossa and supra pubic area. There was no organomegally or other palpable mass. Paracentesis was positive for non-clotting blood.

VAGINAL EXAMINATION

She had normal external genitalia. The uterus was bulky and cervix was posterior. The pouch of Douglas was full and there was a tender mass in the right adnexa with positive cervical excitation. Examination finger was blood stained.

DIAGNOSIS

A tentative diagnosis of right ruptured ectopic pregnancy was made

INVESTIGATION

PDT - negative

MANAGEMENT

M.N. was prepared for emergency laparatomy. The patient was informed of the diagnosis and mode of management. Informed consent was obtained, a blood sample taken for grouping and cross matching. Premedication IM atropine 0.6mg ½ before theatre was given.

In theatre, the patient was put in semilithotomy position and vulvo vaginal toilet done. After general anaesthesia was induced, clean urine, 30mls was drained after catheterization. She was put in supine position, cleaned and draped. The abdomen was opened in 3 layers via a Pfanestein incision.

Haemoperitoneum of a 600mls of blood was found . Right ruptured ampulary pregnancy was found and right partial salphingectomy done. This was done by clamping both end of ectopic pregnancy and ligating and excision of pregnancy. The specimen was taken for histology.

The right ovary, left tube and ovary were found normal. The uterus was bulky. The appendix was also found normal. The abdomen was cleaned and closed in 3 layers.

Her postoperative recovery was unremarkable. Check Hb was done on the 3rd post operative day, it was 10.2g/dl and she was discharged on the 4th day on oral antibiotics, analgesics and haematinics and to be seen in the clinic in three weeks.

REVIEW

Review after three weeks found that she was well and the wound had healed. She was advised to attend clinic for pre-conceptional counseling and follow up.

DISCUSSION

M.N. presented above had ruptured right tubal pregnancy and partial salphingectomy was done with an uneventful recovery.

Ectopic pregnancy is when the blastocyst implants anywhere else outside the endomterial lining of the uterine cavity (1,2).

Incidence of ectopic pregnancy is about 1 in 100 pregnancies and over 75% are diagnosed before the 12-week. At Kenyatta National Hospital, Webala found an incidence of 1 ectopic pregnancy for every 15 full term pregnancies (3) and Mwathe found 4-5 ectopic pregnancies per week (4).

It is more common in women of low fertility, low socio-economic status and in those with previous ectopic pregnancy: 10 to 20% will have a second ectopic pregnancy. Causes of ectopic pregnancy may either be mechanical or functional. These risk factors include tubal surgery, tubal sterilization, previous ectopic pregnancy, exposure to diethylstillbestrol in utero, infertility, multiple sexual partners, previous pelvic surgery, smoking, intrauterine devices, progestin contraceptives and pelvic inflammatory disease (2).

Pelvic inflammatory disease especially following Chylamydia trachomatis and Neisseria gonorrhea is the commonest cause (2). Webala found evidence of chronic salphingitis in 69% of the cases at Kenyatta National Hospital (3). Other factor include assisted ovulation, either using clomiphine citrate or following in vitro fertilization and/or gamete intra fallopian transfer (2).

Classification of ectopic pregnancy is based on the location, 99% are tubal with 55% being ampullary, 25% isthmic, 17% fimbrial and 2% being intestitial (1). Other sites are ovarian, abdominal and cervical. They may also be heterotrophic and occasionally you may have a pregnancy within a rudimentary horn, intramural or in a uterine diverticulum (1). The patient presented had a right ampulary ectopic pregnancy.

The fertilized ovum promptly burrows in the epithelium of the tube with limited resistance for the trophoblast and at the same time maternal blood vessels are opened (5). The fetus or embryo is often stunted. The uterus undergoes some element of early pregnancy changes. These changes include enlarged epithelial cells, with hyertrophic and hyperchromatic, lobular and irregularly shaped nuclei. The cytoplasm is vacuoted, roomy with occasional mitosis. These changes in the endometrium – aria stella reaction – are not specific for ectopic pregnancy and may occur in normal pregnancies (2).

Termination of the tubal pregnancy may lead to abortion or missed abortion, extratubal rupture or intratubal rupture (1).

Fifty percent of all ectopic pregnancies may abort, get absorbed or become chronic (5).

Interstitial or cornual pregnancy may rupture into the uterine cavity, into the broad ligament (5). Cervical pregnancy may rupture into the cervical canal or into the cavity. Patients with ectopic pregnancy may have diverse manifestation depending on whether there is rupture or not. Most of the time the woman will think she is normally pregnant or not pregnant.

Pain is present in 991 of the cases, this is usually abdominal but may be subdiaphragmatic or shoulder pain due to irritation of the diaphgram by the blood (1). Abnormal uterine bleeding occurs in 75% of the women. This is usually dark and scanty. Secondary amenorrhea (usually less than 2 weeks) may occur. Others may have syncope (1). Findings depend on whether the pregnancy is ruptured or not. Vital signs are normal before rupture. If rupture has occurred, the patient may present in shock (low blood pressure with weak rapid pulse). There may be a pelvic mass, pelvic tenderness with an adenexal mass in 53% of the patients (1).

Culdocentesis may reveal blood (2). Laboratory list include haemoglobin count which may show reduced haemoglobin. There may be leucocytosis of upto 30,000/ml.

B-HCG (beta-human chorionic ganodotrophin) can be detected bur is usually lower than normal pregnancy levels.

Use of urinary pregnancy list may be positive in only 50-60% of ectopic pregnancies (5). Serum progesterone levels may also be used to rule out ectopic pregnancy with those with levels of greater than 25ng/ml being in less than 2% of ectopic pregnancies and in 4% of abnormal pregnancies.A progesterone level of less than 15ng/ml is seen in 81% of ectopics,93% of abnormal intrauterine pregnancies and11% of normal pregnancies.

Ultrasound imaging is used in diagnosing with vaginal sonography having a sensitivity and specificity of 96 and 99 percent respectively. Abdominal utrasonography may also be used (2).

If both β HCG and sonography are not conclusive, then serial follow up may be done (2). In some cases, diagnosis may be done through laparoscopy or laparatomy (2).

Laparoscopy is advantageous as it may give a definitive diagnosis and surgical removal may be done.

Curettage of uterus may differentiate between abortion and ectopic. It may show the aria-stella reaction.

Treatment of ectopic pregnancy is usually surgical or medical. Surgical treatment may be conservative or radical. Conservative surgical treatment either may be salphingostomy, segmental resection and anastomosis or fimbrial expression (6). Radical surgical treatment is usually saphingectomy and is usually performed if the tube is heavily damaged (7).

Medical treatment involves use of methotrexate either as definitive treatment or to prevent persistent trophoblast (6). Success rate is higher with small gestation and should be used for pregnancies of 6 weeks and less.

Selection criteria for methotrexate treatment are;

1.Heanodynamically stable

2.No evidence of tubal rupture or significant intr-abdominal heamorrhage

3.Tube less than3-4cm in diameter

4.No contraindication to methotrexate

5.Patient is available to follow up

Other treatment include actinomycin, direct injection of prostaglandin $F_2\alpha$ or hyperosmolar glucose.

Anti-D immunoglobin should be given to rhesus negative women (2).

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CASE 13

CHARIOCARCINOMA – CHEMOTHERAPY

Name: A.N. Age: 22 years

Ward: 1B IP no.: 0819137

D.O.A.: 3.8.02

PRESENTING COMPLAIN

She came with complains of vaginal bleeding for 4 days

HISTORY OF PRESENTING COMPLAIN

She was well until six weeks ago when she was admitted in ward 1D with incomplete septic abortion. Manual vacuum aspiration was done and she was discharged on antibiotics.

Four days prior to admission, she started having vaginal bleeding. This was heavy and in clots and was associated with lower abdominal pains. She was also weak and unable to walk. There was associated backache.

OBSTETRIC AND GYNAECOLOGICAL HISTORY

She is now a para 0+1 who had a spontaneous abortion at 11 weeks gestation and was managed as mentioned above. Menarche was at 16 years, her cycles are regular lasting 3 days and coming after 28 days.

She has not used any method of contraception.

PAST MEDICAL HISTORY

Apart from that mentioned above there was no significant past medical history. She had no drug allergies.

FAMILY AND SOCIAL HISTORY

She is a single lady who stays with her sister in Kibera. She is an unemployed form four school leaver.

She does not smoke or drink. There is no family history of chronic illness.

EXAMINATION ON ADMISSION

She was sick looking, clinically afebrile, not jaundiced. She was pale with a blood pressure of 90/50 mmHg, pulse was 102/min weak and of low volume.

ABDOMINAL EXAMINATION

The abdomen was soft with supra pubic tenderness. There was a pelvic mass corresponding to 14 weeks.

VAGINAL EXAMINATION

There was bleeding from the introitus with normal external genitalia. Cervical os was closed with an anterior vaginal wall mass which was bleeding slightly. The cervix was normal with a uterus of 14 weeks gestation. The os was closed with no products of conception felt. Adnexa was free and normal. The other systems were essentially normal.

She was started on intravenous fluids, blood taken for grouping and cross matching. PCV was taken and was found to be 14. She was transfused 3 units of blood.

DIAGNOSIS

An impression of choriocarcinoma was made.

INVESTIGATIONS DONE

- Pelvic scan: - this showed an enlarged uterus with uniform echogenicity with no products of conception seen
  - enlarged ovaries with multiple cysts
- BHCG 10,110miu/ml
- Urea and electrolytes: Na+ -137 mmol/l

K+ -4.8mmol/l

Urea -3.5mmol/l

- Haemoglobin: 7.4g/dl
- Liver function test: normal
- Chest x-ray: no abnormalities detected

MANAGEMENT

She was transfused two pints of blood. Repeat haemoglobin was 10.2g/dl. She was scored as high risk chariocarcinoma and was for triple agent chemotherapy.

TREATMENT

She was started on triple therapy. She received methotrexate 50mg, actinomycin D 50mg and cyclophasphomide 500mg for 5 days from 31/8/02.

Repeat βHCG levels on 9/9/02 was 3,314 iu/l

FOLLOW UP

She was for chemotherapy every alternative week until negative levels of βHCG were found, then for 3 more courses of chemotherapy.

She was follow up βHCG level until one year and effective contraception.

DISCUSSION

A.N. presented above had choriocarcinoma following abortion.

She was started on chemotherapy. Choriocarcinoma is part of a spectrum of neoplasms referred to as gestational trophoblastic disease. The others are hydatidiform mole and invasive mole (1). Gestational trophoblastic disease is one of the rare tumours that can be cured even in the presence of wide spread metastasis. Incidence of choriocarcinoma is rare accounting for 2-5% of all gestational trophoblastic disease (GTD) and occurring in 1 in 40,000 pregnancies (2).

In about ½ of all cases of choriocarcinoma, the antecedent event is molar pregnancy ¼ following term pregnancy and the remainder following abortion (2).

GTD arise from fetal tissue and are associated with 46xx karyotypes, trisomic and triploid chromosomes which are paternal in origin. GTD are associated with low socio-economic status, poor nutrition including dietary deficiencies of folic acid, protein and carotene deficiency. Age is a risk factor with increased risk with age 40 and above (3). There is also a link between blood group and GTD with group A mothers impregnated by O men having a 10 x risk than group A mothers with group A men (3).

Choriocarcinoma is a pure epithelial tumour composed of syncytiotrophoblastic and cytotrophoblastic cells (2).

Patients with Choriocarcinoma normally present with irregular vaginal bleeding following termination of a pregnancy (1). They also have subinvolution or asymetricaly enlarged uterus (1). If infection occurs, they may have vaginal discharge. Choriocarcinoma has a tendency of metastasis which occurs in 4% (1).

The common sites of metastasis are the lung (80%), vagina (30%), pelvis (20%), liver (10%) and brain (10%).

The patient presented had vaginal bleeds and uterine enlargement thus followed abortion at 11 weeks.

Signs and symptoms may rise from metastasis. Staging of choriocarcinoma is based on anatomic and prognostic factor: The FIGO staging is as seen below (5).

Stage 1:	Disease confined to the uterus
1a:	Disease confined to the uterus with no risk factor
1b:	Disease confined to the uterus with one risk factor
1c:	Disease confined to the uterus with two risk factors
Stage II:	GTD extending outside the uterus but limited to the genital structures (adenexa, vagina, broad ligament)
IIa:	with no risk factor
IIb:	with one risk factor
IIc:	with two risk factors
Stage III:	GTD extending to lungs with or without known genital involvment
IIIa:	with no risk factor
IIIb:	with on risk factor
IIIc:	with two risk factors
Stage IV:	All other metastatic sites
IVa:	with no risk factor
IVb:	with one risk factor
IVc:	with two risk factors

Risk factors affecting staging include

1) Human chorionic gonadotrophin > 100,000 miu/ml
2) Duration of disease longer than 6 months from termination of antecedent pregnancy

In addition to staging, World Health Organization has developed a prognostic staging system which reliably predicts drug resistance. Scores of less than 4 are low risk, 5-7 middle risk $\geq$ 8 high risk. High risk should have intensive chemotherapy.

Scoring system based on prognostic factors

	S C O R E			
	0	1	2	4
Age (years)	< 39	> 39		
Antecedent pregnancy	H mole	Abortion	Termination	
Interval between end of pregnancy And start of chemotherapy	< 4	4-6	7-12	. 12
HCG levels (IU/L)	$<10^3$	10^3-10^4	10^4-10^5	$>10^5$
ABO group		O or A	B or AB	
Largest tumour including Uterus (cm)	< 3	3-5	> 5	
Site of metastasis		Spleen Kidney	GIT Liver	Brain
No. of metastasis		1-3	4-8	. 8
Prior chemotherapy			1 drug	>1 drug

Initial evaluation of a patient with GTD involves full examination and history, measurement of βHCG levels, chest x-ray, pelvic scan, hepatic and renal function tests and full blood count (1).

Management of GTD is based on staging. Initial management of low risk involves single agent chemotherapy with or without hysterectomy depending on if the patient wishes to preserve fertility.

Initial drugs used is methotrexate plus follinic acid or actinomycin D. High risk patients are treated with methotrexate, actinomycin D and cyclophsophamide. Other regimes

used include EMA-Co (etoposide, methotrexate, actinomycin D, cyclophosphamide and vincristine).

Follow up of the patient involves the following:

- Weekly βHCG levels until they are negative for 3 weeks
- Monthly βHCG level monthly for 12 months
- Effective contraception for a period of 1 year

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CASE 14

SEXUAL ASSAULT

Name: E.M. Age: 26 years

Sex: Female OP No.: 67074

Date: 8/8/02

PRESENTING COMPLAIN

E.M. came with complains of having been sexually assaulted by persons unknown to her.

HISTORY OF PRESENTING COMPLAIN

She was well until 2 days ago when she went to Gikomba Market to buy socks. She was then drugged and found herself in Thika in a strange house with strange men. They were three.

She also complained of lower abdominal pain but had no discharge or vaginal bleeding. She had no injury elsewhere.

OBSTETRIC AND GYNAECOLOGY HISTORY

She was a Para 0+0, her LMP was on 29/7/02. Her menarche was at 15 years of age and menses are regular lasting 3 to 4 days, minimal in amount and coming after 28 days. There was no history of Pap smear or contraceptive use.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She is single and works as a waiter. She does not smoke cigarettes nor drink alcohol. She lives alone in Kariobangi. No family history of chronic illness.

EXAMINATION

A young lady in emotional distress, crying, clothes not stained, torn or soiled. Her blood pressure was 140/90 mmHg, pulse rate 88/minute and temperature 36.8°C.

CENTRAL NERVOUS SYSTEM

Oriented on time, place and person.

ABOMINAL EXAMINATION

Her abdomen was soft with no organomegally, there was suprapubic tenderness.

VAGINAL EXAMINATION

She had normal external genitalia, the vaginal walls and cervix were normal, there was no obvious discharge but there was a bruise in the anterior fornice, which was not bleeding. A high vaginal swab was taken.

DIAGNOSIS

An impression of sexual assault in a 26-year-old female was made.

She was informed about the investigations to be done and treatment. She was also sent to the counselors for counseling.

INVESTIGATIONS DONE

HIV - negative

VDRL - negative

High vaginal swab- no spermatozoa, no bacteria growth and no trichomonas vaginalis seen

TREATMENT

She was started on prophylactic anti-retrovirals (combivir T BD for twenty eight days) and postinor to repeat after 24 hours.

She was also put on analgesics and sedation and referred to the high-risk clinic.

FOLLOW UP

She was to have repeat HIV test at 6 weeks and 6 months. She was also to continue counseling sessions.

DISCUSSION

E.M. presented above came with complains of sexual assault. She was put on emergency contraception and antiretroviral prophylaxis.

Legal definitions of sexual assault vary from state to state but most definitions include:-

1. Use of physical force, deception, intimidation or the threat of bodily harm
2. Lack of consent or inability to give consent because the survivor is very young or old, impaired by alcohol or drug use, unconsciousness or mentally or physical impaired.
3. Oral, vaginal or rectal penetration with a penis, finger or object (1).

Sexual assault of children and adult women has reached epidemic levels but the incidence is unknown as many cases go unreported (1).

Childhood sexual abuse has profound and potential lifelong effect on the survivor (2). Women who are sexually assaulted tend to be more likely to experience depression, chronic anxiety, anger, substance abuse problems, personality disorders, low esteem and sleep disorders. They are also likely to develop posttraumatic stress disorder (1). 20-25% of women are raped by a complete stranger. Most women are raped by a relative or an acquaintance, this could be a husband, ex-husband, father, step father, boyfriend or ex-boyfriend (3).

Violence against women is present in every country.

The world conference on human rights in Vienna (1993) accepted that women and girl rights are an inalienable, integral and indivisible part of universal human rights (2).

The laws of Kenya state that any person who unlawfully and carnally knows a girl below 14 years is guilty of felony and is liable to imprisonment for 14 years with hard labour together with corporal punishment (4). It is argued that this is not enough punishment. Law on rape is that one is punished to life imprisonment (4). With the current

constitution review going on we only hope that a stronger and more stringent law is enhanced.

Following rape, the victims normally have several concerns which include pregnancy, sexually transmitted infections (including HIV) being blamed for the assault, having their name made public and having friends and family find out about the assault. It is difficult to know how an assaulted person will react. Some develop the rape trauma syndrome, which consists of physical and psychological symptoms (1).

Examination and treatment should be done in a quiet environment and a thorough history obtained due to the legal implications.

The physicians responsibilities include:-

1. Obtaining an accurate gynaecologic history, including recording of the sexual assault
2. Assessing, documenting and treating physical injury
3. Obtaining appropriate cultures (including samples for forensic tests) treating any infection and providing prophylaxis for sexually transmitted diseases
4. Providing therapy to prevent unwanted pregnancy
5. Providing counseling to the patient and her partner and/or family
6. Arranging for medical follow up and counseling
7. Reporting to legal authorities as required by state law.

At Kenyatta National Hospital we offer counseling, HIV prophylaxis, emergency contraception and treatment/prevention of sexually transmitted infection.

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CASE 15

PELVIC ABCESS

Name:	K.S.	Age:	18 years
Sex:	Female	IP no.:	0822297
DOA:	23.9.02	DOD:	9.10.02

PRESENTING COMPLAIN

Patient was admitted through gynaecologic out patient clinic with a right tubo-ovarian mass for laparotomy.

HISTORY OF PRESENTING COMPLAIN

She was well until 6 months ago when she started having lower abdominal pain, which was associated with abdominal swelling. This was progressive but there was no associated per vaginal discharge and no vaginal bleeding.

OBSTETRIC AND GYNACOLOGIC HISTORY

She was a primigravida .Her menarche was at 14 years of age with menses regular lasting 6 days and coming after 29 days. There was no history of contraception use or vaginal discharge. Her LMP was on 3.9.02.

PAST MEDICAL HISTORY

This was not significant

FAMILY AND SOCIAL HISTORY

She is standard six drop out single and stays with her mother, does not smoke cigarettes nor drink alcohol. She is the sixth born in family of six siblings no family history of chronic illness.

EXAMINATION

She was in fair general condition, she was not pale nor jaundiced. Her blood pressure was 120/70 mmHg, pulse rate was 74/minute.

ABDOMINAL EXAMINATION

The abdomen was distended more in the lower abdomen. There was a pelvic mass corresponding to 20 weeks gestation. It was cystic, non tender and fixed.

VAGINAL EXAMINATION

There was normal external genitalia. The cervix os was posterior with bagginess at the fornices.

DIAGNOSIS

An impression of tubo-ovarian mass was made and she was for laparotomy

INVESTIGATIONS

Ultrasound	-	cystic tubo-ovarian mass with normal uterus
Urea and electrolytes	-	urea- 2.3mmol/l
		Na^+ -147 mmol/l
		K^+ -46 mmol/l
Haemogram	-	Hb- 9.2 g/dl
	-	WCC- 9.7 $x10^5$/ml

She was prepared for laparotomy, written consent obtained, blood grouped and cross-matched and atropine 0.6mg ½ hour before theatre.

OPERATION

She was wheeled to theatre and placed in supine position. General anaesthesia induced and abdomen cleaned and draped. The abdomen was opened via sub-umbilical midline incision.

Findings in theatre: right tubo ovarian mass involving the infudibulopelvic ligament and the broad ligament and attached to the uterus. There was a left hydrosalphinyx.

Done: adhensions released around the mass. Small incision made and approximately 1500mls of very thick pus drained. Excision of excess tissue done followed by marsupialization. Pentoneal washing with normal saline and irrigation with rifocin done. Drain inserted and abdomen closed in 3 layers.

POST OPERATIVELY

She was put on IV antibiotics of augmentin and flagyl, IV fluids and nil by mouth. On the first post operative day she was started on oral sips and ambulated and started on light diet on the second day. The drain was removed on the third post operative day.

The wound was exposed on the forth post operative day and she was discharged home on antibiotics for review after 3 weeks.

DISCUSSION

Pelvic abscess is an uncommon complication of chronic or recurrent pelvic inflammation. It may occur as a sequelae to acute pelvic or post-arbortal infection (1).

Abscess formation is frequently associated with organisms other than gonococcus commonly anaerobic species especially Bacteroides.

A patient with pelvic abscess may have any of the signs and symptoms of acute or chronic pelvic inflammation in addition to a flactuant mass filling the cul-de-sac (1). They may also have bowel symptoms including painfull defeacation, severe rectal pain and even backache (1).

The size of the abscess is usually proportionate to the symptoms but occasionally a large pelvic abscess may be asymptomatic (1). K.S. had a large pelvic abscess, which was asymptomatic.

Other conditions that may present as pelvic abscess include tubo-ovarian abscess, ectopic pregnancy, ovarian neoplasm, peri-appendiceal abscess, uterine leiomyoma or diverticulitis.

The pelvic mass usually is as a result of agglutination of pelvic organs (tube, ovary and bowel) causing a palpable mass (2). Ultrasonography is an invaluable tool in the diagnosis of pelvic abscess.

Management of pelvic abscess should initially involve supportive management with fluids and broad spectrum antibiotics (2). Laparatomy should be reversed for patients with ruptured abscess or failed medical treatment. Laparatomy may be used if diagnosis is not certain and prognosis of pelvic inflammatory disease (3).

Surgical management involves posterior colpotomy and drainage of the pus and preferable irrigation with sterile saline solutions every 4 hours. This may negate the need for laparotomy.

If colpotomy is to be done, the abscess must be midline or nearly so, abscess should be adherent to the cul-de-sac and must dissect the rectovaginal septum and is should be flactuant (3). In our unit, colpotomy is not routinely done.

Laparatomy is indicated if the patient's condition deteriorates, or if it ruptures to the peritoneal cavity, bladder or intestines (3).

Prognosis of pelvic abscess is good if the abscess is well localized (2). In case of ruptured abscess, prognosis for fertility is poor and in patients with recurrent infections and loss of reproductive function, total abdominal hysterectomy and bilateral salphingo-oophorectomy with release of adhensions offers the only cure (3).

Bacteriological cultures have been unrewarding with specific organisms being isolated in less than 50% of the cases (3).

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GYNAECOLOGY LONG COMMENTARY

Title:

ABNORMAL CERVICAL CYTOLOGY AMONG WOMEN IN A RURAL KENYAN POPULATION – NAROK DISTRICT

Table of Contents

1. *Abstract*

BACKGROUND. Cervical cancer is a disease of growing clinical and public health importance in developing countries. Nearly 80% of the 0.5 million cases diagnosed each year worldwide are from developing countries. (1) In sub-Saharan Africa, cervical cancer is the commonest female malignancy exceeding breast cancer except for a few countries in North Africa (1,2)

Cervical cancer in Africa has been described as 'tragic' (3) this has been in reference to the high prevalence of the disease, the young age of the victims, delay in diagnosis, absence of treatment facilities and poor treatment results. It is unlikely that, faced with current economic and population pressures, African governments will be in a position to improve cancer treatment facilities or social and economic conditions of the people. A preventive approach to cervical cancer would thus appear most logical. (4) Identification of pre-cancerous cases is therefore important. Cytology, which is an accurate and relatively inexpensive method of cervical cancer screening, is used in the early diagnosis of precancerous lesions. In countries where it is routinely done it has reduced the morbidity and mortality of invasive cancer, by reducing the incidence of the invasive disease as seen in the Scandinavian countries. (4,5)

STUDY DESIGN. This was a cross-sectional quantitative and descriptive study done between the months of March and May 2002.

OBJECTIVE, The aim of the study was to determine the prevalence of abnormal cytology and its associated risk factors in a rural district of Kenya.

METHODOLOGY. The study was done at Narok District Hospital and Ewaso-Nyiro dispensary both situated in Narok District. A total of 96 women were recruited into the study.

RESULTS. Abnormal cervical cytology (epithelial cell abnormalities) was found in 16.7% of the study population.

There was no significant association of abnormal cytology with know risk factors but there was a significant negative association of abnormal cytology with contraceptive use (P=0.024). However there was no association between oral contraceptives and abnormal cytology

CONCLUSION;Ther is need for routine cytological screening within the community.There is need to create awareness among the community on the need of cytological screening

2. *Introduction*

In Kenya, cervical cancer is very common accounting for 70 – 80% of all cancers of the genital tract. Where cancer registries exist, cancer of the cervix represents 37% of all histological proven cancers. (7)

Cervical cancer is a disease that arises most commonly at the squamocolumnar junction of the cervical canal, an area known to undergo squamous metaplastic changes during late fetal life, adolescence and pregnancy. However, squamous metaplasia is not premalignant. (8)

Of these lesions, 85 - 90% are squamous while 5 - 15% are adenocarcinomas. (9)

A continuum of cervical disease is generally recognised, ranging from dysplasia to invasive carcinoma for which Richart coined the term cervical intraepithelial neoplasm. (10)

Age is an important factor in the distribution of the changes:

- mild to moderate (CIN 1-2) is often diagnosed in the early 20'2,
- severe dysplasia/carcinoma in situ (CIN 3) in 30 – 39 year olds, and
- Invasive cancer in a later age group. (11)

During the smear the superficial cell of the ecto and endocervix are obtained.

There is no agreement over the rate of progression or regression of these lesions but it is recognised that milder forms of dysplasia are more likely to regress and vice versa. Richart and Barron showed that the rate of progression from mild to moderate and sever dysplasia was 58, 38 and 12 months respectively. There was a 6% overall regression. (12) A similar study by Johnson on dysplasia in general showed an overall regression rate of 50.4% after follow up for periods of upto 10 years. There was only 1.4% progression to carcinoma over the same period. (13)

When Galvin looked at grades of dysplasia individually they found that in mild dysplasia 53.9% regressed and 16.6% progressed and of severe 17.1% regressed and 65.7% progressed to carcinoma in situ. (14)

It is therefore reasonable to assume that progression through CIN occurs in an incremental fashion starting at CIN 1, CIN 2 and to CIN 3. This however cannot be proven for every case and examples are seen through cases of CIN2 and even CIN 1 developing directly to invasive carcinoma without reaching CIN 3.

Premalignant lesions of cervix (Cervical Intraepithelial Neoplasm)

This includes dysplasia and carcinoma in situ. Diagnosis is made by the presence of dysplastic cells. Dysplasia is characterized by cells, which have abnormal nuclei, increased nuclear: cytoplasmic ratio, hyperchromatism, multinucleation and abnormalities in differentiation.

Classification of CIN

This is divided into 1, 2 and 3 corresponding to mild, moderate and severe dysplasia/carcinoma in situ. (12) This is classified according to epithelial thickness involved.

CIN 1	-	Involves 1/3 of epithelial thickness
CIN 2	-	Involves 2/3 of epithelial thickness
CIN 3	-	Involves whole thickness

A more recent revised classification has been suggested with high grades (CIN 2 and 3) likely to behave as cancer precursors and low grade (CIN 1) with a low progressive potential. (16).

In America, the Bethesda Reporting System has been advocated (17). It consists of adequacy of smear, general categorization, descriptive diagnosis and epithelial abnormalities. It involves the term squamous intraepithelial lesion (SIL) to encompass all

grades of CIN. It is further divided into low grade (CIN 1) and high grade (CIN 2 and 3).

BETHESDA CLASSITICATION

1. Within normal limits
2. Infections(organisms should be specified)
3. Reactive and reparative changes
4. Squamous cell abnormalities
    a. Atypical squamous cells of undetermined significance-ASCUS
    b. Low-grade squamous intraepithelial lesion-LSIL
    c. High-grade intraepithelial lesion-HSIL
5. Squamous cell carcinoma

There are several risk factors that lead to abnormal cervical cytology and this include,

1. Sexual Behaviour

Sexual behaviour is an accepted risk factor to abnormal cervical cytology. In this category, two variables stand out, age at first intercourse and number of sexual partners. (18)

a) Age at first intercourse

It has been shown that cervical cancer and abnormal cervical cytology is more common among married than unmarried women. It is especially high among women marrying at an early age. (19)

In Narok, the Maasai still practice early marriage hence an early age at first intercourse. This therefore puts them at high risk of cervical cancer.

b) Number of sexual partners

Number of sexual partners is a risk factor in cervical cancer. Studies show a 2 – 3 fold increase in women with more than one partner and that women with cervical cancer report multiple sexual partners. (20)

The role of the male partner in abnormal cervical cytology has been increasingly emphasised. (21) This is seen by clustering of penile and cervical cancers.

A study in Kenya showed a polygamy rate of 42.9% in women with cancer of the cervix. (22) Parity is also considered a risk factor with incidence of incidence of abnormal cervical cytology increasing with parity. (22)

Polygamy is also still practiced in Narok hence the sexual behaviour would put them at high risk. Practice of family planning is low with mothers having a high parity.

2. **Sexually transmitted aetiological agents**

In this respect, viral agents have continued to take a center stage. Several agents have been incriminated.

a) Human Papilloma Virus (HPV)

After many years of research, it is now generally agreed that this is a major cause of abnormal cervical cytology. A study in Kenya showed presence of multiple types of HPV in cervical cancer specimens. HPV infection which generally occurs in teenage or early twenties and thirties is a problem that shows cellular changes that lead to abnormal cervical cytology and eventually cancer after 20 or more years. (29) HPV infection and neoplasia depends on certain HPV types and are divided into three categories according to the risk of oneogenesis. (30)

Risk Category	HPV Subtype
High	16, 18, 45, 56
Intermediate	30, 31, 33, 35, 39, 51, 52, 58, 66
Low	6, 11, 42, 43, 44, 53, 54, 55

b) Human Immunodeficiency Virus (HIV)

It has been noted that immunosuppresion is associated with high chance of initiation of tumours and their spread. A study by Rogo showed a HIV prevalence of 1.5% in patients with cervical cancer as compared with 2% in normal population. (26) HIV women are at a higher risk of developing

precancerous lesions than those not infected. (27) Cervical diseases may also progress more rapidly in women with HIV resulting in early progression to cancer. HIV infection is alsoassociated with increased risk of developing cancer of the cervix, presentation as a more advanced disease,metastasis to unusual sites, poorer response to treatment, and inreased incidence of complications following radiotherapy One study in South Africa found that HIV infected women present with invasive cancer almost ten years earlier than HIV negative women. (28)

c) Herpes simplex type 2

Many studies have shown significantly higher antibody levels in those with cancer of the cervix. It is suggested that HSV2 plays the role of the initiating factor. (25)

3. **Non Sexual Characteristics**

a) Smoking is associated with cancer of the cervix through immunosupression or promoting effects of other carcinogens. (23) In Kenya, it is of little effect where smoking among women though rising is still infrequent.

b) Relationship between oral contraceptives and cervical neoplasia have been extensively studied. W.H.O after controlling extensively for all possible aetiological factors put on adjusted relative risk of 1.2 associated with use of the pill, rising to 1.5 for use of 5 or more years (24).Recent studies showed a 3 fold increase of cervical cancer with use of oral contraceptives for more than 5 years.(39)

4. **Social and Biological Factors**

These include race, ethnicity, social class and heredity. In this respect Martin et al divided the Americans into low and high-risk populations. (19) These factors may place someone in a class associated with certain sexual behaviors.

Prevention of Cervical Dysplasia and Cervical Cancer

This is the approach to control cervical cancer. In this respect, two methods of prevention occur.

a) Primary prevention by preventing HPV and other STD infections. This involves barrier contraception, abstinence and/or reduction of sexual partners.

b) Secondary prevention by screening and treatment of precancerous lesions is both feasible and cost effective. Pap smear for many years has been the gold standard and has led to a reduction in incidence of cervical cancer in Europe and North America. (31)

Diagnosis of Cervical Dysplasia and Cervical Cancer: Screening Technique

1. **Cytology Screening**

   a) **Papanicolaou Smear**

   Since its introduction in the 1940s, this has been the gold standard of cervical cancer screening.

   b) **New Technologies**

   In the past few years, researchers have introduced several new cervical cytological techniques that attempt to increase sensitivity and reduce the false negative rate of conventional screening methods. Some of these techniques include:

   Thin prep: This is a fluid-based cytology method. The cervical cells are placed in a fluid media and filtered of blood, mucous and inflammatory cells before they are read. (32)

   Auto pap 300 QC: This is an automated rescreening device. (33)

2. **Visual Inspection**

This involves looking at the cervix for any signs of early cancer (VI) to visual inspection with acetic acid (VIA). (34)

The aviscope (gynoscope) has now been introduced to aid in magnification. (35)

Follow Up of Abnormal Cervical Cytology

Once screening has been done follow up of abnormal cervical cytology is done. This involves several procedures

1. **Colposcopy: This can be used as a screening or diagnostic procedure**

   This involves inspection of the cervix under low power magnification and inspection of the epithelium and capillary systems. Abnormalities which include, white epithelium, moscaism or punctuate lesion of the capillaries are then identified. Any areas that look suspicious are then done biopsy (punch biopsy).

2. **Diagnostic Cone Biopsy**

   This is indicated if the lesion is extensive, in suspected micro-invasive carcinoma or if there is discrepancy between colposcopy and the cytological specimen.
   This is less popular as a diagnostic procedure since the advent of LEEP. This is because it requires hospitalization and general anesthesia. It also bears the risk of cervical incompetence in those who want to bear children.

3. **LEEP (Loop Electrosurgical Excision Procedure)**

   This is done as an outpatient procedure using the colposcope. The transformation zone and any other suspicious lesions are cauterized.
   The procedure is relatively cost effective as compared to cone biopsy and has less complications.

Cytology in Kenya

Cytology in Kenya was introduced in 1969 at Kenyatta National Hospital. In a review of 4909 patients who attended the gynecological clinic, abnormal cervical cytology was found in 2.91%. (36)

- **Characteristics of Cancer Patients in Kenya**

The majority of patients diagnosed were found in the late stages. Stages of cancer of cervix at time of diagnosing at KNH (Ojwang/Mati) are as shown below: (37)

	Percentage of Patients		
Stages	**Kenya**	**Malawi**	**Sweden**
1	10.2	13.7	45.6
2	28.1	31.8	36.3
3	56.0	23.4	11.2
4	5.7	31.1	6.9

Thus more than half of the patients in Kenya were diagnosed in stage 3 and 4 as compared to 18% in Sweden. This late diagnosis is responsible for the high mortality of cancer of the cervix in Kenya. This was confirmed by Rogo et al. (29)

- **Peak Age of Cancer**

32% of patients were diagnosed between ages 30 – 39 and 30% between ages 40 – 49 (Ojwang-Mati) (37)

Age	%
20 – 29	97
30 – 39	32.3

3. Rationale

In Kenya cancer of the cervix is the commonest of all genital cancers accounting for 70-80% of the cancers . Prevalence of abnormal cervical cytology in Narok is still unknown. Cancer of the cervix is still the most common female malignancy in Kenya and the Maasai women, an unscreened population, are probably not an exception.

There are no recent studies in Kenya to determine the prevalence of abnormal cytology. However, the Kenya Cancer Association is currently carrying our a study to determine the prevalence of abnormal cytology in Western Kenya.

This is a community that still follows cultural beliefs i.e. polygamy, high parity and teenage marriages which would place them in a high risk group .

This is a district with relatively low socio-economic status, and the education level is very low, therefore the need to carry out the study and compare with other areas of Kenya.

5. Objectives

Broad Objectives

1. To determine the prevalence of abnormal cervical cytology and possible risk factors among women attending MCH/FP clinic in Narok District.

Specific Objectives

1. To determine the socio-demographic characteristics of the study population.

2. To determine the possible risk factors associated with abnormal cervical cytology among women attending MCH/FP clinic

3. To determine the prevalence of abnormal cervical cytology

6. Methodology

Study design

This was a Cross Sectional Descriptive study.

Study population

Narok district is in Rift Valley province. It is situated to the south of the province. It is a vast district and its climatic regions range from productive high potential to semi-arid. The district has a population of 450,000 inhabitants.

The main inhabitants are the Maasai whose main economic activity is pastrolism although they are slowly changing to subsidiary and small-scale farming. The Masai still uphold their socio-cultural values, which include early age at marriage, early age at first pregnancy and polygamy. The socio-economic status of the community is still poor with low levels enrollment in schools and high unemployment levels.

The district has 8 administrative divisions and communication is poor. Most of the roads are earth roads, which are impassible during the rainy season.

It has one district hospital, 20 health centers and 24 dispensaries. Currently, none of these health facilities offer routine cytological screening. The referral system is poor with the nearest referral center (Rift Valley Provincial Hospital) being approximately 120 km away.

Data collection

The study was carried out in Narok District Hospital and Ewaso Nyiro Dispensary. The dispensary is located approximately 25 km from Narok town.

The nurses were recruited from the hospital and dispensary and only those who were on leave were eligible for recruitment. This was to ensure that there was no conflict of interest.

The nurses were then trained by the Investigator on issues related to counseling, recruitment of participants and collection of the pap smear.

The participants were recruited from maternal child health and family planning clinic. Strict observance of the inclusion and exclusion criteria were applied. Since not all sexually active women attend MCH/FP clinic a significant proportion of the population might have been left out .

Once the patients were recruited, the questionnaires were administered with the help of the trained interviewers, who were able to speak the local dialect.

- **Collection of Pap Smear**

Procedure

The main aim was to obtain cells from the squamocolumnar junction throughout its circumference.

Collection of sample

The smear was done when the woman was not menstruating preferably at mid-cycle. She avoided douching at least 48 hours before the smear. The smear was done before digital examination to avoid trauma. The speculum was then introduced into the vagina with water only being used as a lubricant to avoid contamination of the cell sample. After naked eye inspection of the cervix, the spatula was introduced to the vaginal canal. Sample from the ectocervix was

taken with the wooden spatula (aryes), then the endocervical brush was inserted into the endocervix and rotated through 360^0. The specimen from both the ectocervix and endocervix were then smeared on the labeled glass slide. This was done by applying a thin smear on the glass slide. The smear was then fixed using an alcohol fixative.

The slides were then transported weekly to Nairobi by the investigator for staining and reporting by the cytopathologist.

The cytopathologist reported on the pap smears within two weeks of receipt of the samples.

The participants were therefore given a return date of three weeks to collect the results. Those requiring further treatment or evaluation were referred accordingly to the Nakuru Provincial General Hospital or Kenyatta National Hospital.

Quality Control

- Reading of the pap smears was done by one cytopathologist to ensure standardized reading.
- The reporting of the smear results were done using the bethesda reporting system using a standardized form which is supplied as Appendix 2.

- **Duration of Study**

March 2002 – May 2002

- **Exclusion Criteria**

i) Those women who had prior abnormal pap smear or history of cancer of the cervix.

ii) Those who did not consent

iii) Those who were not attending maternal child health and family clinic

iv) Those who resided[1] outside the study area

- **Inclusion Criteria**

i) Those women who resided[1] in Narok district (i.e. persons who have lived in the area for at least 10 years)

ii) All those who were attending MCP/FP clinic

iii) All those who consented to pap smear examination and filling of questionnaires

iv) Those who came with other gynaecological conditions

[1] **Resident** – a person who has been born and is currently living in Narok district or one who has had permanent residence in Narok for the last 10 years. (average progression of abnormal cytology - about 6 years)

Sample size

Sample Size

n = sample size

z = value which is normal standard deviation

d = difference in presence or estimate

p = prevalence[2]

Using precise d = 5%, z value of 1.96 and prevalence of 2.91% as per study of material

$$n = \frac{z^2 p(1-p)}{d^2}$$

$$= \frac{1.96^2 * (0.029 * (1 - 0.029))}{0.05^2}$$

$$= 43.4$$

$$= 44^1$$

Notes

1 The Investigator increased the sample size to include approximately 100 participants. This was to allow for any movements out of the population during the duration of study and to ensure that any of the results obtained gave a better representation of the study population.

Data Collection

- The pap smears were taken weekly to Nairobi for reporting.
- Questionnaires were filled for each client by the research assistant

Ethical Considerations

- Consent forms were availed and signed by the client prior to the procedure.
- All procedures carried out were standard and patients were counseled.
- Staff were qualified.
- Those who refused were not victimized
- Clients were expected to have benefited from the study because the procedures were not always available
- Data and information was treated with confidentiality.
- Clients with vaginal discharge were treated.
- Results of cytology were given back to the clients and if results indicate abnormality, appropriate medical treatment was given and referral done if required through the normal system.

RESULTS

A total of 96 women were recruited into the study .

Table 1: Socio-demographic characteristics

CHARACTERISTIC	FREQUENCY	PERCENTAGE
Age (years)		
• 10-19	4	4.2
• 20-29	66	68.8
• 30-39	19	19.8
• 40-49	5	5.2
• 50+	2	2.0
Marital status		
• Single	2	2.1
• Married	93	96.9
• Divorced	1	1
Level of education		
• None	25	26.4
• Primary	43	44.3
• Secondary	26	27.1
• University/college	2	2.2
Occupation		
• None	43	45.3
• Self employed	45	47.3
• Formal employment	6	6.3
• Student	1	1.1
Average income per month		
• < 2000	57	62.6
• 2001 - 4000	18	19.8
• 4001 - 6000	6	6.6
• > 6000	10	11.0

Table 1 shows the socio-demographic characteristics, 4 (4.2%) were less than 20 years old, 66 (68.8%) were between 20-29 years old, 19 (19.8%) were between 30-39, 5 (5.2%) were between 40 and 49 years old and 2 were 50 years old and above. 2 (2.1%) of the study women were single 93 (96.9%) were married and only 1 (1%) was divorced.

25 (26%) had no formal education, 43 (44.8%) had received up to primary level of education, 26 (27%) had attained secondary level of education and only 2 (2.1%0 had reached college or university .Majority {45.3 %}were unemployed.

Majority of the study population 57 (62.65) had a monthly income of less than 2000 kshs., 18 (19.8%) earned between 2001 and 4000 kshs, 6 (6.6%) earned between 4001 and 6000 kshs and 10 (11%) earned more than 6000 kshs.

Figure 1: Parity of the study population

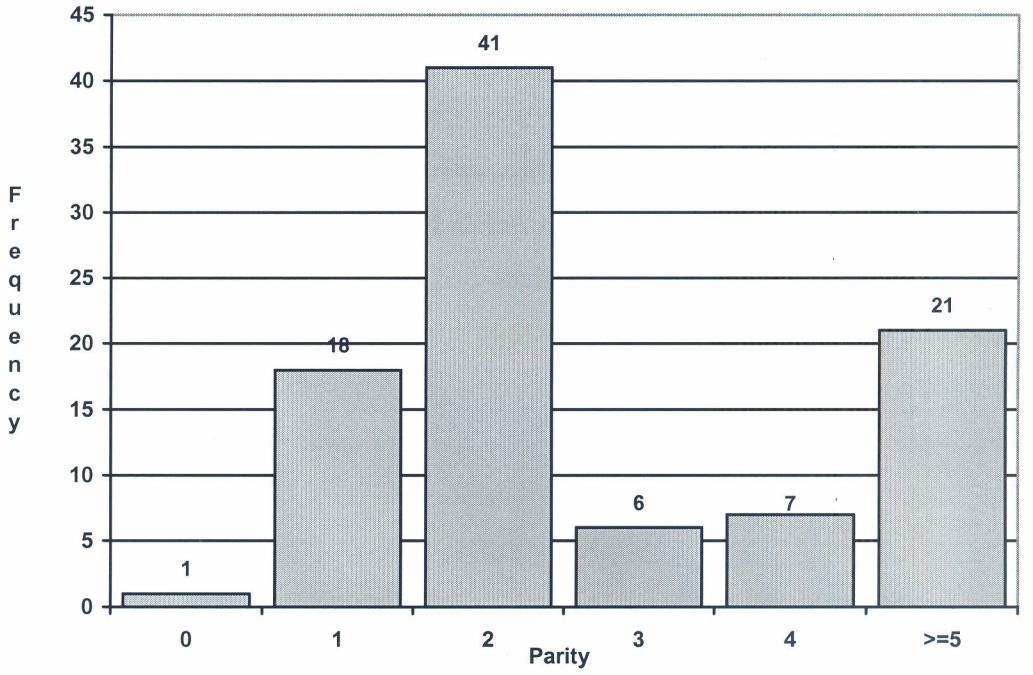


Figure 1 shows the parity of the study population. 2 clients did not indicate their parity, one was a primigravida, 18 (19.1%) were para 1 and 41 (43.6%) were para 2 ,21 (22.3%) were para 5 and above. There was no association between parity and abnormal cytology

Figure 2: Epithelial cell abnormalities versus age at first intercourse

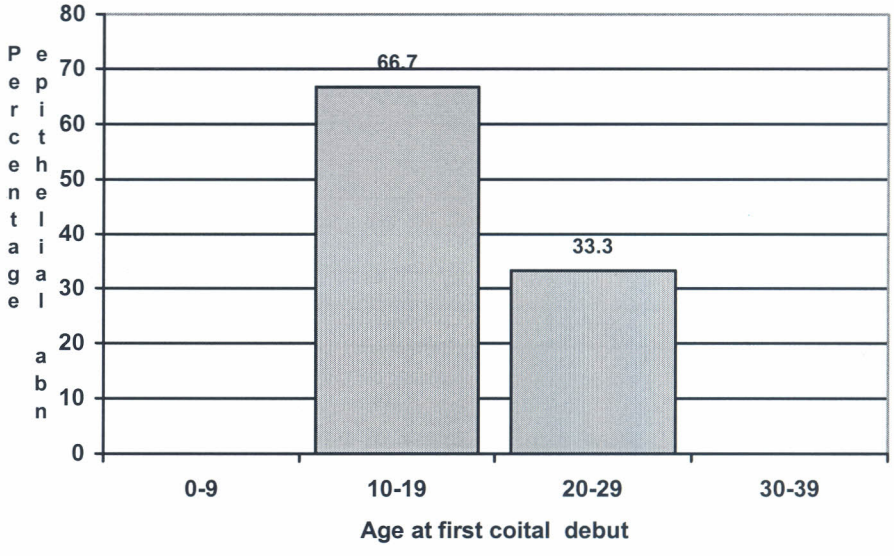


Figure 3 shows age at first intercourse vs epithelial cell abnormalities

66.7% of the women with epithelial cell abnormalities had their first coital debut between the age of 10 and 19 years .33.3% had their first coital debut between 20 and 30 years.The earlier the first sexual debut the higher tha chances of developing premalignant lesions of the cervix.

Table 2: Age at marriage

AGE	NUMBER	PERCENTAGE
15	2	3.1
16	7	10.1
17	14	18.9
18	12	15.9
19	12	15.9
20	6	7.2
21	4	5.9
22	2	3.2
23	7	7.0
24	10	12.8

The table above shows the age at marriage in years. There were 19 missing cases. 2 (3.150 were married at 15 years, 7 (10.1%) at 16 years, 14 (18.9%), 17 years, 12 (15.9%) at 18 years, 12 (15.9%) at 19 years, 6 (7.2%) at 20 years and the remaining 23 (28.9%) above 20 years of age.

Mean age at marriage was 18.8 years and the median age at marriage was 18 years.

Table 3: **Knowledge of pap smear and previous pap smear**

	FREQUENCY	PERCENTAGE
Heard about pap smear		
• Yes	15	16
• No	79	84
Had pap smear done before		
• Yes	2	3.4
• No	92	96.6

15 (16%) had learned about pap smear and 79 (84%) had not been told about pap smear and only 2 (3.4%) had had a pap smear taken before and 92 (96.6%) had not had any taken. 2 did not respond. The patients who had had pap smear before were all familiar with pap smear

Majority of the women were not aware about pap smear,there is need for more information education and advocacy within the study population

Table 4: Vaginal discharge and gross cervical examination

	FREQUENCY	PERCENTAGE
Vaginal discharge		
• None	72	78.3
• White curdly	14	15.2
• Grey white	3	3.3
• Blood stained	3	3.3
Gross examination of cervix		
• Healthy	71	78
• Erosion	20	22

72 (78.3%) had no vaginal discharge, 14 (15.250 had white curd-like discharge, 3(3.3%) had greyish-white discharge while 3 (3.3%) had blood stained discharge. 71 (78%) had healthy looking cervixes and 20 (22%) had cervical erosion. There was no association between cervical gross appearance and vaginal discharge with abnormal cytology.

Table 5: **General categorization of cellular changes**

	FREQUENCY	PERCENTAGE
Within normal limits	37	38.3
Benign cellular changes	43	44.8
Epithelial cell abnormalities	16	16.7

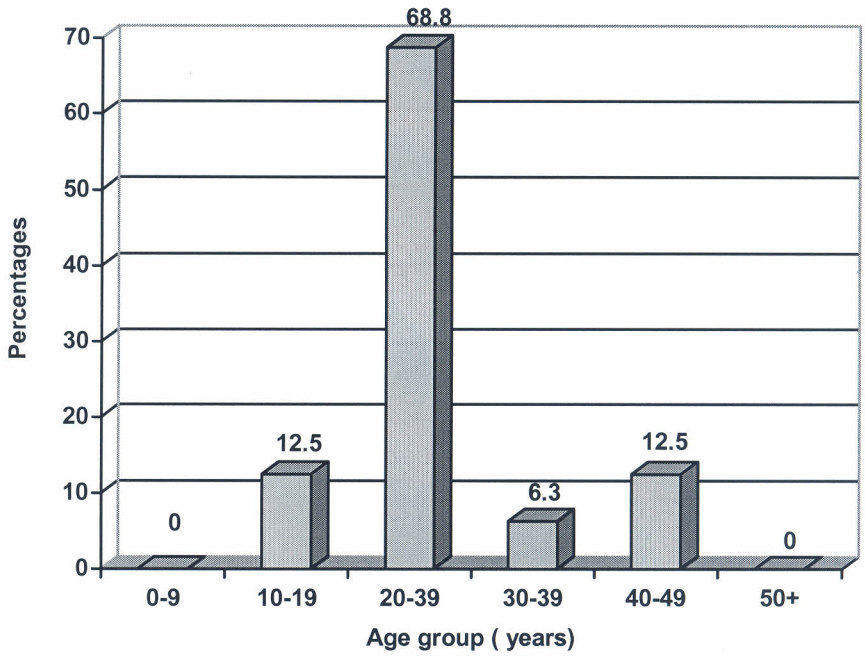
Of the pap smears taken 37 (38.5%) were within normal limits, 43 (44.8%) were benign cellular changes and 16 (16.7%) were epithelial cell abnormalities. Therefore 80 (83.3%) had no epithelial cell abnormalities and hence classified as normal and 16 (16.7%) were abnormal smears.

Table 6: Epithelial cell abnormalities

	FREQUENCY	PERCENTAGE
Squamous		
• **ASCUS**	9	56.2
• **LOSIL**	5	31.4
• **HISIL**	1	6.2
Glandular -AGCUS	1	6.2

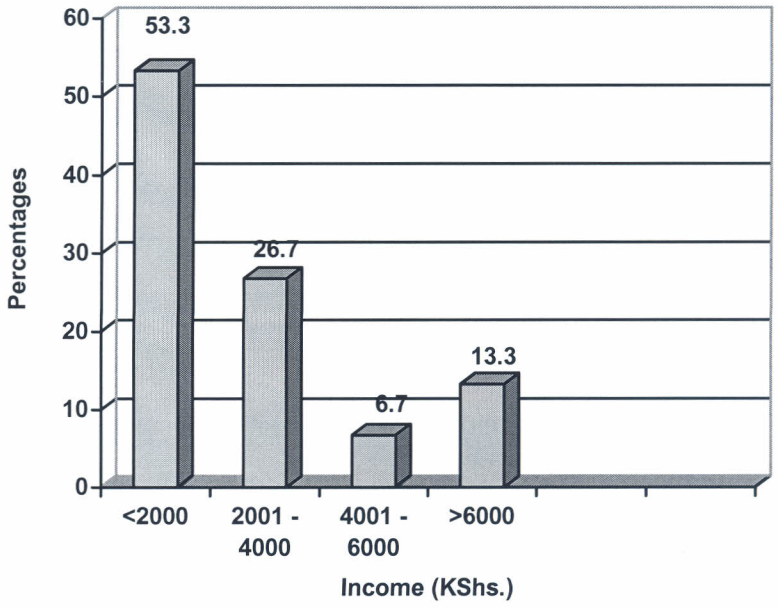
Of those with epithelial cell abnormalities, 9 (56.2%) had atypical cells of unknown significance, 5 (31.4%) had low grade squamous intra-epithelial lesion, 1 (6.2%) had high grade squamous intraepithelial lesion and 1 (6.2%) had atypical glandular cells of unknown significance.

Figure 3: Epithelial cell abnormalities versus age group in years



2 (12.5%) of those with epithelial cell abnormality were between 10-19 years old, 11 (68.8%) were between 20-29 years old, 1 (6.3%) was between 30-39 years old and 2 (12.5%) were between 40 and 49 years old. There was no statistical significance between the normal and abnormal group in age distribution.

Figure 4: Epithelial cell abnormality versus average income per month in Kshs.



The majority, 8 (53.3%) of those with epithelial cell abnormality earned less than 2000 Kshs per month, while only 2 (13.3%) earned greater than 6000 Kshs per month.

Table 7: Epithelial cell abnormalities versus use of contraception

	Use of contraception	
Epithelial cells	**Yes**	**No**
Normal	65 (82.3%)	14 (17.7%)
Abnormal	7 (43.8%)	9 (56.3)

P=0.00254(Chi-square)

Of those with normal smears 65 (82.3%) used contraception and 14 (17.7%) had not used contraception. Of those with abnormal smears, 7 (43.8%) had used contraception and 9 (56.3%) had not used contraception. There was statistical significance between use of contraception and normal smears.

DISCUSSION

Cervical cancer in Africa is described as tragic and in Kenya it is very common accounting for 70-80% of all cancers of the genital tract (1,7) Cytology is an accurate and relatively inexpensive method of cervical cancer screening and where it has been availed to the general population, it has reduced the incidence of invasive cervical cancer (4,5). The study was done at Narok District Hospital and Ewaso-Nyiro Dispensary both in Narok District. A total of 96 women were recruited into the study

In our study, the abnormal cytology was seen in 16.7% of the study population which is higher than the 2.91% reported by Mbugua and Ndavi in 1994 at Kenyatta National Hospital. In their study Mbugua and Ndavi used the CIN reporting system but in our study we used the Bethesda reporting which explain the high prevalence we found. Those with epithelial cell abnormalities 6.2% had atypical glandular cells of undetermined significance,

Abnormal cytology is usually found in the early age groups of 20's and 30's with invasive cancer in the later age groups (11). In our study population, the peak age group was 20-29 years (68.8%) and majority of the abnormal cytologies (68.8%) were found in the age groups of 20-29 years. There was no statistical difference in the abnormal and normal cytology in terms of age distribution .The population did not have an even age distribution meaning that we could be missing the severe dysplasias seen in the older age groups.

Cervical cancer is associated with several risk factors ,which include sexual behavior ,non-sexual characteristics ,sexually transmitted infections and social and biological factors

Sexual behavior is an accepted risk factor and age at first intercourse stands out(19). 46.2% of those with abnormal cytology in the study population had their first sexual intercourse by the age of 17 years, as compared to 15.6% in those who had intercourse

after the age of 20 years. 82.2% of the study population had their first sexual intercourse by the age of 20 years which is higher than the 44% national figures (40). Number for sexual partners particularly the role of the male partner is also recognized (20,21).

Parity is considered a risk factor with incidence of abnormal cervical cytology increasing with parity. This could be due to cervical trauma during parturition and hormonal or nutritional influences (22). Apart from parity the frequency and interval of the pregnancies playing a major role with increasing prevalence of abnormal cytology with increased frequency of vaginal delivered pregnancies. 60% of the population had a parity of 2 or less but there was no significant association between high parity and abnormal cytology. The study design did not look into the frequencies and intervals of the pregnancies.

Early age at first pregnancy is associated with high prevalence of abnormal cytology more so as they are likely to have more pregnancies and start intercourse at an early age. In our study 62.5% of the women had their first pregnancy by the age of 20 years which is higher than the 20.9% reported in the 1998 Kenya Demographic Health Survey (40)

Social and biological factors that increase the risk of cervical cancer include low socio-economic class ,race and ethnicity In our study 44.8% had attained primary education and 26% had no formal education ,but there was no association between level of education and abnormal cytology .

There was no association between occupation and abnormal cytology as shown by the study. 45.3% were unemployed and 45% self employed with only 6.3% formerly employed.

In our study 53.3% of those with abnormal cytology had an income of 2000 kshs or less per month, emphasizing the higher risk with low socio-economic status (19).This was not sastisticaly significant.

The social and biological factors may influence the risk of abnormal cytology independently or they may place someone in a class associated with certain sexual behaviors

Use of oral contraception is associated with a 3 fold increase in cervical cancer with use of more than five years (39). The increase in prevalence of cervical is associated with the recency of the oral contraceptive use.

In our study, 43.8% with abnormal cytology had history of contraceptive use as compared to 56.3% with abnormal smears who had no history of contraceptive use. This was significant (P=0.00254) this showing protective nature of contraception. However there was no significant association between oral contraceptives and normal cytology.
This could be due to the association of low parity and high usage of contraception with 75.8% of the women using a contraceptive method.

Regular pap smear is associated with reduced risk of pap smear and for pap smears to be taken knowledge about the need of pap smear is mandatory.

In our study population, only 16% had heard about pap smears and only 2.1% had had a pap smear taken before. This is lower than 35% of the women in Machackos who had heard about pap smear(6). The knowledge about pap smear among the population is still low and further information counseling and advocacy is required.

Sexually transmitted agents continue to take a center stage in the aeitiology of cervical dysplasia with viral agents being incriminated, The agents incriminated are HPV,HIV and Herpes simplex type –2(29) being carried out. In our study 10% of the women had history of a sexual transmitted disease(i.e. vulval ulcers and vaginal discharge). However there was no association between sexually transmitted diseases and abnormal cytology. This may be because the incriminated viral agents are asymptomatic, currently screening for HPV is being carried out as screening procedure for cervical cytology(30).

SUMMARY

This study has shown that abnormal cervical cytology is higher in this community as compared to other areas and we may soon see higher prevalence of cancer of the cervix in this population unless interventions are carried out.

CONCLUSIONS AND RECOMMENDATION

Routine screening reduced the chances of getting invasive cancer. In our, the prevalence of abnormal cytology was high and routine screening should be introduced.

The knowledge and information about pap smear was low. There is need for advocacy, information, education and counseling about the same.

Abnormal cytology is associated with human papilloma virus and human immunodeficiency virus. This was not looked into and further studies should be undertaken.

There was association of use of contraception and normal cytology. Further studies need to be done standardizing other risk factors

The role of the male factor is recognized, this was not looked into and further studies are required

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Appendix 1 - Questionaire

(i) Age

a) 10 - 19
b) 20 - 29
c) 30 - 39
d) 40 - 49
e) 50+ [ ]

(ii) Marital Status

a) Single
b) Married
c) Divorced
d) Separated
e) Widowed [ ]

(iii) Level of Education

a) None
b) Primary
c) Secondary
d) University/College [ ]

(iv) Occupation

a) None
b) Self employed
c) Formal
d) Student [ ]

(v) Average Income per month (K Shs)

a) < 2,000
b) 2,001 – 4,000
c) 4,001 – 6,000
d) > 6,000 [ ]

(vi) Parity

a) 0
b) 1
c) 2
c) 3
e) 4
f) Above 4 [ ]

(vii) Age at first intercourse

a) 0-9
b) 10 – 14
c) 15 – 19
d) 20 – 24
e) 25 – 29
f) 30+ [ ]

(viii) Number of sexual partners

a) 1
b) 2
c) 3
d) 4
e) 5+ [ ]

(ix) Age at 1st pregnancy

a) < 10
b) 10 – 19
c) 20 – 29
d) 30 – 39
e) 40 - 49 [ ]

(x) Use of contraception

a) Yes
b) No [ ]

If Yes, go to (xi)
If No, skip to (xiii)

(xi) Type of contraception

a) Oral pills
b) Injection
c) Norplants
d) Intra Uterine Devices
e) Natural methods
f) None [ ]

(xii) Duration of contraception use

a) < 1 year
b) 1 – 3 years
c) > 3 years [ ]

(xiii) **History of STD i.e. rashes, discharge, ulcers, pimples**

a) Yes
b) No [ ]

(xiv) Heard about pap smear

a) Yes
b) No [ ]

If Yes, go to (xv)
If No, skip to (xvii)

(xv) If Yes, from which source

a) Health worker
b) Media
c) Material
d) Other [ ]

(xvi) Has pap smear been done before

a) Yes
b) No [ ]

(xvii) When was last normal menstrual period (LNMP)? [ ]

Physical examination

(xviii) Pallor

a) None
b) Mild
c) Moderate
d) Severe [ ]

(xix) General physique

a) Good
b) Fair
c) Poor [ ]

(xx) Vaginal discharge

a) None
b) White curdly
c) Grey white
d) Yellow
e) Blood stained [ ]

(xxi) Vaginal discharge smelly

a) Yes
b) No [ ]

(xxii) Vulva ulcers

a) Yes
b) No [ ]

(xxiii) Cervix: gross examination

a) Healthy
b) Erosion
c) Growth [ ]

(xxiv) On taking sample does cervix bleed
a) Yes
b) No

Appendix 2 - Cytology Report

Appendix 2 - Cytology Report

Serial Number : _____

Date of Specimen Collection : _____

Specimen Adequacy

1. Satisfactory for evaluation [.....]

2. Satisfactory for evaluation but limited by

   (i) **Too much blood or pus** [.....]
   (ii) No endocervical cells [.....]
   (iii) Not enough cellular material [.....]
   (iv) Other (specify) [.....]

3. Unsatisfactory for evaluation [.....]

General Categorisation

1. Within normal limits [.....]

2. Benign cellular changes [.....]

3. Epithelial cell abnormality [.....]

Descriptive Diagnosis

1. Benign cellular changes

   (i) Infections

   - Bacterial [.....]
   - Gardenela [.....]
   - Candida [.....]
   - Herpes Simplex [.....]
   - Actinomyces [.....]
   - Other (specify) [.....]

(ii) Reactive changes

- Metaplasia [.....]
- Inflammatory changes [.....]
- Others (specify) [.....]

2. Epithelial cell abnormalities

(i) Squamous cells

- ASCUS [.....]
- LO SIL [.....]
- HI SIL [.....]
- Sq. Cell Carcinoma [.....]

(ii) Glandular cells

- Endometrial cells cytologically benign [.....]
- AGCUS [.....]
- Adenocarcinoma [.....]
- Other malignant neoplasm's (specify) [.....]

Comments

.....

.....

Reported by : .....

Appendix 3 - Consent Form

Appendix 3 - Consent Form

I freely consent to the pap smear examination and to the subsequent testing and analysis of the sample obtained.

I freely consent to completing the questionnaire and to the analysis of the same

I understand that the results of my tests will be kept confidential except for disclosure of any reactive results to the resident doctor at the hospital of referral (if necessary).

I have received adequate counseling about what the test results mean.

I understand that I have the right to request and receive a copy of this form.

Full Name of Client : .....

Address : .....

.....

.....

Signature : .....

.....

Witness : .....

.....

Tel.: 726300/726450/726550
Fax: 725272
Telegrams: "MEDSUP", Nairobi

KENYATTA NATIONAL HOSPITAL
P.O. Box 20723, Nairobi

Ref. KNH-ERC/01/1265

Date 11 February 2002

Dr. Kigen Bartilol
Dept. of Obs/Gynae
Faculty of Medicine
University of Nairobi

Dear Dr. Bartilol,

RE: **RESEARCH PROPOSAL** "ABNORMAL CERVICAL CYTOLOGY AMONG WOMEN IN A RURAL KENYAN POPULATION - NAROK DISTRICT" (P74/7/2001)

This is to inform you that the Kenyatta National Hospital Ethical and Research Committee has reviewed and **approved** the revised version of your above cited research proposal.

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

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

Thank you.

Yours faithfully,

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

c.c. Prof. K.M. Bhatt,
Chairman, KNH-ERC,
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