

LONG OBSTETRIC COMMENTARY

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ANAEMIA IN PREGNANCY AT COAST

PROVINCE GENERAL HOSPITAL (CPGH),

MOMBASA : A DESCRIPTIVE STUDY

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INTRUDUCTION:

Nutritional anaemia is defined by W.H.O. as, "A condition in which the haemoglobin concentration of blood is below the accepted normal value, due to a deficiency of one or more nutrients essential for erythropoiesis, regardless of the cause of the deficiency" (1). The materials essential for erythropoiesis, deficiencies of which are responsible for anaemia in pregnancy anywhere in the world, are, broadly iron and folic acid, and occasionally vitamin B12 (2).

The importance of anaemia as a leading cause of morbidity and mortality at the coastal regions of Kenya has been well documented (3-8). Malaria (9) and hookworm infection (10) being endemic in these areas, would undoubtedly play a major role in the aetiology of anaemia in pregnancy. This study was undertaken to evaluate the part played by these two parasites plus other determinants of anaemia in pregnancy at the coast.

OBJECTIVES:

This study had the following objectives:

1. To define the incidence of anaemia in pregnancy at CPGH.
2. To define the individual importance of the different types of nutritional anaemias - e.g. - microcytic hypochromic anaemia, macrocytic anaemia, dimorphic anaemia, haemolytic anaemia, etc.
3. To define the determinants or possible determinants of the anaemia.

4. To look at the management of the patients and the consequences of the anaemia to the patients and their pregnancies.
5. To advance possible solutions regarding future care of pregnant women in this area vis-a-vis anaemia in pregnancy.

MATERIALS AND METHODS:

This study was done at Lady Grigg Maternity Hospital (LGMH), the maternity unit of CPGH. LGMH is reputed to be the second busiest maternity hospital in Kenya - second only to Pumwani maternity hospital. It serves patients mainly from Mombasa district, and referrals from district hospitals and health centres in Coast Province.

Mombasa has a hot and humid climate with an annual rainfall ranging from 40 to 50 inches. It is the second biggest town in Kenya and its principal port. Mombasa is a cosmopolitan town and almost all the tribes of Kenya are represented there.

This study took 10 weeks from the 14th September, 1983 to 23rd November, 1983. During this period all women who attended LGMH with a haemoglobin concentration of less than 9.0gm/dl. were included in this study. Each of these patients was assessed and investigated as follows:

1. Gave answers to the questions detailed in the proforma (Index 1).
2. Had a thorough physical examination with special attention to Pallor, Jaundice, Oedema, Blood pressure, Temperature, Respiratory system, Cardiovascular system and Abdominal system.
3. 2cc. of venous blood were taken in a sequesterine bottle and sent to the Laboratory of CPGH for haemoglobin concentration, peripheral blood film, sickling test plus or minus haemoglobin concentration.

- 3.1. Haemoglobin concentration was done using the Coulter Machine
 - 3.2. Peripheral blood films were stained with standard Leishman's stains and then examined for morphology of red and white blood cells.
 - 3.3. Sickling test was done using freshly prepared sodium metabisuphite. Haemoglobin electrophoresis was done only on specimens with positive sickling test.
 - 3.4. Haematocrit was done using the microhaematocrit centrifuge method.
4. 5cc of venous blood was taken in a plain bottle and sent to the Laboratory for total bilirubin estimation using the Lathe and Ruthven method.
 5. Thick blood smears, two for each patient, were stained with field's stains and examined for malaria parasites.
 6. A Stool specimen was collected in plastic stool containers and analysed for ova and cysts using the formol - ether concentration method.
 7. Finally the management of these patients was scrutinised, and the outcome of the pregnancies complicated by anaemia was looked into.

DEFINITION:

For purposes of this study, anaemia in pregnancy was defined as:

A PREGNANT WOMAN WITH A HAEMOGLOBIN CONCENTRATION OF LESS THAN 9.0 GM/DL.

R E S U L T S1. INCIDENCE OF ANAEMIA IN PREGNANCY IN CPGH:

During the 10 weeks of study, 142 patients were admitted to LGMH with a haemoglobin concentration of less than 9.0gm/dl. Because of occasional lack of specimen bottles and other constraints, 118 patients were studied in detail. All these 118 patients were interviewed and examined by the author who at the same time took the necessary specimens from them.

In the same period, there were 1670 deliveries in the Obstetric Unit. The incidence of anaemia in pregnancy was, therefore, 8.5 per 100 deliveries. }

2. POINT PREVALENCE OF DISEASES IN ANTENATAL WARDS:

On 19.10. 1983 (the mid point of the study period) all patients in the Antenatal wards were scrutinised and their principal diagnoses are shown in TABLE 1.

Thus, about two out of every five beds in the Antenatal wards were occupied by patients with anaemia in pregnancy.

TABLE 1:

POINT PREVALENCE OF DISEASES IN ANTENATAL WARDS:

DIAGNOSIS	NO.	%
1. ANAEMIA IN PREGNANCY	38	43.7
2. HYPERTENSIVE DISEASE IN PREGNANCY	12	13.8
3. BAD OBSTETRIC HISTORY	10	11.5
4. MALARIA IN PREGNANCY	5	5.7
5. PREVIOUS UTERINE SCAR(S)	4	4.6
6. FALSE/LATENT LABOUR	4	4.6
7. MULTIPLE PREGNANCY	3	3.4
8. ANTEPARTUM HAEMORRHAGE	3	3.4
9. CARDIAC DISEASE IN PREGNANCY	2	2.3
10. POST-DATISM	2	2.3
11. MEDICAL DISEASE	2	2.3
12. INTRA UTERINE DEATH	1	1.1
13. BREECH PRESENTATION	1	1.1
TOTAL	87	100

3. HAEMOGLOBIN, P C V AND M C H C CHARACTERISTICS:

3.1 HAEMOGLOBIN CONCENTRATION

118 patients were studied in detail. Their haemoglobin concentrations ranged from 2.2gm/dl. to 8.9gm/dl., with a mean of 5.7gm/dl. The haemoglobin concentrations were further grouped into 4 arbitrary classes and the results are shown in TABLE 2.

As can be seen, 28.8% of the patients studied were either "severely" or "very severely" anaemic. These were patients who needed urgent and prompt attention. 80.5% of the patients had haemoglobin concentration of less than 7.0gm/dl.

3.2 PACKED CELL VOLUME (PCV):

This ranged from 6% to 31% with further breakdown shown in TABLE 3.

3.3 M C H C

This was calculated from the haemoglobin concentration and the PCV using the standard formula:
$$\text{MCHC} = \frac{\text{HB} \times 100}{\text{PCV}}$$

The results obtained were put into three categories - i.e. - below 32gm%, 32-36gm% and above 36gm%. This was an attempt to classify the anaemias into hypochromic microcytic, normochromic normocytic, and normochromic macrocytic respectively. It should be pointed out here that the results of the MCHC were, more often than not, at complete variance with the peripheral blood pictures. Possible reasons for this discrepancy will be mentioned in the discussion.

The results of the MCHC are shown in TABLE 4.

TABLE 2

HAEMOGLOBIN CONCENTRATION

HB. CONCENTRATION	CLINICAL PICTURE	NO.	%
LESS THAN 3.0gm/dl.	VERY SEVERE ANAEMIA	6	5.1
3.0 - 4.9 gm/dl.	SEVERE ANAEMIA	28	23.7
5.0 - 6.9 gm/dl.	MODERATE ANAEMIA	61	51.7
7.0 - 8.9 gm/dl.	MILD ANAEMIA	23	19.5
TOTAL		118	100

TABLE 3

P C V

P C V RANGE	NO.	%
0 - 9%	9	7.6
10 - 19%	64	54.3
20 - 29%	43	36.4
30% AND ABOVE	2	1.7
TOTAL	118	100

TABLE 4

M C H C

M C H C	NO.	%
BELOW 32 gm%	58	49.2
32 - 36 gm%	32	27.1
ABOVE 36gm%	28	23.7
TOTAL	118	100

4. SOME POSSIBLE DETERMINANTS OF ANAEMIA IN PREGNANCY IN CPGH:

4.1. AGE DISTRIBUTION:

TABLE 5 shows the age distribution of the 118 patients with anaemia in pregnancy when compared to all the mothers who delivered in LGMH during the period of this study.

More than half of the patients with anaemia in pregnancy were aged 20 years or less, while 36% of the mothers who delivered during the same period were aged 20 years or less. This difference is statistically significant ($Z = 3.3 : P < 0.01$). Thus, anaemia in pregnancy is predominantly a disease of younger women.

4.2. PARITY DISTRIBUTION

This is shown in TABLE 6 with comparison figures drawn from the total number of mothers who delivered during the same period.

33.1% of anaemic mothers were primigravidae compared to a slightly lower figure of 28.5% all the mothers. The difference, however, was not statistically significant. The rest of the parity groups were fairly well comparable.

TABLE 5

AGE DISTRIBUTION:

AGE	ANAEMIC PATIENTS		ALL MOTHERS	
	NO.	%	NO.	%
15 YEARS AND BELOW	2	1.7	21	1.3
16 - 20 YEARS	59	50.0	580	34.7
21 - 25 YEARS	33	28.0	627	37.5
26 - 30 YEARS	16	13.6	339	20.3
31 - 35 YEARS	5	4.2	77	4.6
36 YEARS AND ABOVE	3	2.5	26	1.6
TOTAL	118	100	1670	100

*STATISTICALLY SIGNIFICANT DIFFERENCE
($P < 0.01$)

TABLE 6

PARITY DISTRIBUTION: (ABORTION IGNORED)

PARITY	ANAEMIC PATIENTS		ALL MOTHERS	
	NO.	%	NO.	%
0 + 0	39	33.1	475	28.5
1 + 0	26	22.0	355	21.3
2 + 0	18	15.3	298	17.8
3 + 0	14	11.9	184	11.0
4 + 0	7	5.9	127	7.6
5 + 0	4	3.4	89	5.3
6 + 0 AND ABOVE	10	8.5	142	8.8
TOTAL	118	100	1670	100

4.3 TRIBAL DISTRIBUTION:

This is shown in TABLE 7; again drawing comparisons between all the mothers delivered during that period.

The Mijikenda tribes, nine in total, are grouped together because they share very similar social and cultural values and beliefs. Not only do they live in extreme poverty but they also still ardently believe in traditional norms of doing things; pertinantly here, traditional medical care. They will only, therefore, seek modern medical care if progressive symptoms have shown the futility of the traditional medicines. It is hence not surprising that although the Mijikenda tribes are indigenious at the Coast, only 24.2% of them delivered at LGMH; at the same time they consituted 62.7% of all the anaemic patients. This difference is highly statistically significant ($Z = 8.4 : P < 0.001$).

4.4 ANTENATAL CARE AND LEVEL OF EDUCATION:

These variables are shown in TABLE 8 (a + b).

83.9% of the patients studied had no formal or only rudimentary (STD. 1 - 4) education. Therefore, although 94.9% had some form of antenatal care, their level of assimilating what is required of them is questionalbe. Furthermore, because of the perennial shortages and the ever-increasing over-crowding, the care offered in most of the antenatal clinics is, to say the least, inadequate.

TABLE 7

TRIBAL DISTRIBUTION:

TRIBE	ANAEMIC PATIENTS		ALL MOTHERS		*
	NO.	%	NO.	%	
MIJIKENDA	74	62.7	403	24.2	
TAITA	12	10.2	156	9.3	
KAMBA	10	8.5	303	18.2	
LUO	10	8.5	332	19.9	
LUHYA	5	4.2	201	12.0	
KIKUYU	3	2.5	126	7.5	
OTHERS	4	3.4	149	8.9	
TOTAL	118	100	1670	100	

* THE DIFFERENCE IS HIGHLY STATISTICALLY SIGNIFICANT ($Z = 8.4$: $P < 0.001$)

TABLE 8(a): LEVEL OF EDUCATION:

LEVEL OF EDUCATION	NO.	%
NONE	54	45.8
LOWER PRIMARY (STD. 1 - 4)	45	38.1
UPPER PRIMARY (STD. 5 - 7)	6	5.1
LOWER SECONDARY (FORM 1 - 2)	7	5.9
UPPER SECONDARY (FORM 3 - 4)	6	5.1
TOTAL	118	100

TABLE 8(b) : ANTENATAL CARE

ANTENATAL CARE	NO.	%
SOME CARE	112	94.9
NO CARE	6	5.1
TOTAL	118	100

4.5. MARITAL STATUS AND OCCUPATION:

Of the 118 patients studied, 106 (89.8%) of them were married. 9 were single and 3 were divorced. The significance of this in the aetiology of anaemia in pregnancy is not clear, but could be related to the sudden responsibility required of these young women in running a home and raising a family. This, however, is only conjectural.

The majority of the patients studied were grouped under that ubiquitous occupation of "house-wife" (108 = 91.5%). 3 were doing salaried work, 3 were peasant farmers, 2 were self-employed and 2 were casual workers.

The occupations of their husbands or fathers (for those who were not married) is shown in TABLE 9. The divisions are arbitrary; nevertheless, it is hoped that they give a rough picture of the family income.

Only 31.3% of these patients' supporters did reasonably-paying work (moderate and high-salaried work). The income of the rest was precarious.

4.6 AVERAGE DAILY DIET

The patients studied were each asked by the author what they "normally" eat for breakfast, lunch and supper. The responses given were then categorised into 4 groups - i.e. - MAINLY CARBOHYDRATES, CARBOHYDRATES AND SOME GREEN VEGETABLES, CARBOHYDRATES AND SOME PROTEINS, and BALANCED DIET. The results obtained are given in TABLE 10. These categories are arbitrary. 64.4% of the cases in this study had a diet composed of mainly carbohydrates and carbohydrates and some green vegetables. This was considered an inadequate diet. 35.6% ate what was considered an adequate diet - i.e. - a diet composed of carbohydrates and some proteins, and a balanced diet.

TABLE 9

HUSBANDS' / FATHERS' OCCUPATION

OCCUPATION	NO.	%
1. NONE	6	5.1
2. CASUAL WORK	16	13.6
3. SMALL BUSINESS (e.g. Hawker, Fisherman) Magician, Peasant Farmer, Mason, etc.)	30	25.4
4. LOW-SALARIED (e.g. Cook, Attendant, waiter, watchman etc.)	29	24.6
5. MODERATE - SALARIED (e.g. Seaman, clerk, Mechanic etc.)	18	15.3
6. HIGH-SALARIED (e.g. Teacher, Accountant, Salesman etc.)	19	16.0
TOTAL	118	100

TABLE 10

AVERAGE DAILY DIET

DIET	NO.	%
MAINLY CARBOHYDRATES	10	8.5
CARBOHYDRATES AND SOME GREENS	66	55.9
CARBOHYDRATES AND SOME PROTEINS	21	17.8
BALANCED DIET	21	17.8
total	118	100

5. PHYSICAL EXAMINATION

The results obtained are summarised in TABLE 11. Clinically, all patients studied were pale, with varying degrees of pallor. 38.1% of the patients were clinically jaundiced and 43.2% had varying grades of splenomegaly. From these clinical findings, haemolysis seems to be an important cause of anaemia in pregnancy. This haemolysis is presumed to be caused by malaria.

11 patients were in congestive cardiac failure (CCF) or in imminent CCF. These patients were treated promptly and vigorously.

6. LABORATORY RESULTS:

These are given in TABLE 12.

63.6% of the patients had positive smears for malaria parasites. 73.7% had serum bilirubin levels of over 0.8mg%. These results further strengthen the impression of the importance of malarial haemolysis in the causation of anaemia in pregnancy in this area.

43.2% of the patients had Hookworm ova in stool, and 18.6% had ova of *Trichuris trichura*.

16 patients had positive sickling tests; all except one had HBAS.

Dimorphic picture was the commonest peripheral blood picture (70 patients), followed by Iron deficiency anaemia picture (43 patients). The difference between these two was statistically different ($Z = 3.6 : P < 0.001$).

The picture of dimorphic anaemia shows both features of Iron deficiency anaemia (Hypochromia and microcytosis) and features of macrocytic anaemia (macrocytosis, normochromia, varying degrees of anisocytosis and poikilocytosis, plus or minus hypersegmented neutrophils. Almost all these patients showed, in addition, features of haemolysis (polychromasia)

TABLE 11: PHYSICAL EXAMINATION:

SIGN	PALLOR		JAUNDICE		PYREXIA		SPLENOMEGALLY		HEPATOMEGALY		CCF OR IMMINENT CCF	
	+ VE	- VE	+VE	-VE	+ VE	- VE	+ VE	- VE	+ VE	- VE	+ VE	- VE
NO.	118	0	45	73	15	105	51	67	24	94	11	107
%	100	0	38.1	61.9	12.7	87.3	43.2	56.8	20.3	79.7	9.3	90.7

TABLE 12: LABORATORY RESULTS

TEST	MPs		SERUM BILIRUBIN		PERIPHERAL BLOOD PICTURE				STOOL EXAMINATION				SICKLING TEST		
	+VE	-VE	0.8mg%	0.8mg%	I.D.A.	D.P.	M.P.	H.P.	H.W.		T.T.		+ VE		-VE
									+VE	-VE	+VE	-VE	HBAS	HBSS	
NO.	75	43	31	87	43	70	2	3	51	67	22	96	15	1	102
%	63.6	36.4	26.3	73.7	36.4	59.3	1.7	2.3	43.2	57.8	18.6	81.4	12.7	0.8	86.4

← * →

KEY:
 MPs = MALARIA PARASITES
 H.W. = HOOKWORMS
 T.T. = TRICHURIS TRICHURA
 I.D.A. = IRON DEFICIENCY ANAEMIA PICTURE

D.P. = DIMORPHIC ANAEMIA PICTURE
 M.P. = MACROCYTIC PICTURE
 H.P. = HAEMOLYTIC PICTURE
 * = STATISTICALLY SIGNIFICANT DIFFERENCE

MATERNAL AND FETAL OUTCOME

There was one maternal death which, most likely, was due to anaemia in pregnancy. This was a 19- year old patient who had just delivered a set of twins at home then collapsed. She was rushed to hospital but before any resuscitatory measures could be instituted her weakened heart stopped beating.

Relevant history from accompanying relatives was that she was married and had had antenatal care in a municipal council clinic. Her labour had been short and uneventful and she was delivered by a traditional midwife. She had not bled much postpartum.

On examination, there was paper-white pallor, tinge of jaundice and grade 1 splenomegaly. The uterus was well contracted. Relatives declined to have post mortem done on the deceased.

The rest of the patients were managed with blood transfusion (102 patients; a total of 255 pints) ferrous sulphate, folic acid and chloroquine (all patients). Alcopar was only given to patients with hookworm ova in stool.

All the studied patients spent a total of 1356 days in hospital (Range: 3 - 51 day; Average: 11.5 days).

Of the 118 patients studied, only 56 eventually delivered in LGMH. There were 4 stillbirths (One was macerated, and 3 were fresh), and 52 babies were born alive - 12 of these died in the first week of life. The perinatal mortality rate of this group was, therefore, 285.7 per 1,000. This compares to a perinatal mortality of the unit during the period of study of 172 per 1,000.

Out of the 56 babies delivered in LGMH, 25 were below 2,500 grams and 31 were above or equal to 2,500 grams. The low birth weight rate was thus 44.6%.

DISCUSSION

A. INCIDENCE AND PREVALENCE OF ANAEMIA IN PREGNANCY IN CPGH:

An incidence of anaemia in pregnancy of 8.5 per 100 deliveries was recorded in this study. Anaemia in pregnancy was the leading reason for admission to the antenatal wards - with a figure similar to that recorded by Mtimavalye et al in Dar-es-Salaam (12). These figures in themselves bring out the undisputed importance of anaemia in pregnancy in this region; but remembering that only about 4-5% of patients in East Africa seek medical attention (13), the true prevalence of anaemia in pregnancy in this region must be a colossal, staggering and frightening problem.

These results concur well with the observations of Lawson (2) and with the WHO Division of Family Health Report of 1979 (14). This report states, inter alia ... "At any point in time every sixth woman aged 15 to 45 years living in a developing country, excluding China, is pregnant, compared to one in seventeen such women in developed countries. From the information collected it would seem that about half the non-pregnant women and nearly two thirds of the pregnant women have haemoglobin concentration below those laid down by WHO as indicative of anaemia; making a total of some 230 million "anaemic women."

Watson and Murray in 1969 (15) studied 187 women attending antenatal clinic at Kenyatta National Hospital (KNH) for the first time, and found that 9% of them had haemoglobin concentration of less than 10gm%. Mati and associates in 1971 (16) showed that one out of every 23 admissions to the Obstetric Unit of KNH had a haemoglobin concentration of less than 10gm%. More recently, Fomulu (17) recorded an incidence of 5.4% in the same unit. Turner, 1962 (6) reviewed medical records of CPGH of 1960 and found that 21% of the admissions had severe anaemia with a haemoglobin concentration of less than 7.4gm%. Macgregor in 1961 (5) in Mombasa found an incidence of 29.6% with a haemoglobin concentration of less than 9gm%.

It would appear, therefore, that anaemia is more prevalent in CPGH than in KNH, and, on a more encouraging note, things seem to be improving since the early days of Turner and Macgregor.

B. DETERMINANTS OF ANAEMIA IN PREGNANCY IN CPGH:

1. AGE:

Anaemia in pregnancy in this area is a disease of relatively young women (more than half of the patients with anaemia in pregnancy were aged 20 years or less as compared to 36% of the mothers who delivered in LGMH during the period of this study). This determinant per se could be an indirect reflection of the importance of malaria as the main cause of anaemia in pregnancy in this area (2, 16).

2. PARITY:

Anaemia in pregnancy in this region does not show any predilection to any parity group. This finding contrasts with that of Ong, 1974 (18) who showed that high parity was a major contributing factor in the aetiology of anaemia in pregnancy due to a repeated drainage of iron reserves in the body.

3. TRIBAL DISTRIBUTION:

This was the strongest single determinant of anaemia in pregnancy at CPGH. 62.7% of the patients with anaemia came from the Mijikenda tribes - a conglomeration of nine tribes indigenous at the Coast who have similar social and cultural values and beliefs. This compares to 37.3% of all the other tribes, although these tribes contributed 75.8% of all the mothers who delivered during the period of study.

This observation is most likely a surrogate variable to poor socio-economic status.

4. SOCIO-ECONOMIC FACTORS:

Lack of adequate formal education (83.9% of patients with anaemia in pregnancy had nor or only rudimentary education), poor socio-economic status (68.7% of the patients' supporters had no means of income or only marginal means of income), and poor diet (64.4% of the patients with anaemia in pregnancy ate a diet composed of mainly carbohydrates or carbohydrates with some greens) all seem to work in concert to create an atmosphere conducive to the genesis of anaemia in pregnancy. Their individual importance is, however, difficult to gauge.

Levy in his study (8) noted that diet may vary amonth the tribes studied but could not be correlated specifically with haemoglobin values, and no dietary difference was noted among anaemic and non-anaemic members of the same tribe. Latham et al (II) showed that many of the roadworkers in Kwale District of Coast Province had evidence of undernutrition as judged by anthropometry.

The position of poverty in the aetiology of anaemia can be looked at in the broader sence of diseases in developing countries. Maurice King (19) pointed out that the main determinants of the pattern of medical care in developing countries is poverty, rather than a warm climate.

5. MALARIA:

Malaria is holoendemic at the Coastal region of Kenya (9). People living in these areas are re-infected repeatedly throughout their lives. If they survive their first few years of life they develop a steadily increasing immunity (2.9). This acquired immunity (called premunition) is nevertheless precarious and tends to decline under conditions of stress such as pregnancy. This breakdown in immunity is more marked in first pregnancies for reasons which are as yet obscure (2). *The decline in immunity occurs also in parous women but with less severity in higher parity group (2).*

In this study, 63.6% of the patients had positive thick blood smears for malaria parasites. Other evidence of the importance of malaria as the major cause of anaemia in pregnancy in this area are:

1. Evidence of haemolysis (38.1% of the patients were clinically jaundiced and 73.7% had serum bilirubin of 0.8mg% or more), and
2. Splenomegaly in 43.2% of the patients studied.

In pregnancy, malaria may cause the following complications: Premature onset of labour, stillbirths and anaemia; apart from the other known complications of malaria. Anaemia is primarily of haemolytic type, but repeated haemolyses may lead to secondary folic acid deficiency and thence megaloblastic anaemia (2, 16, 20).

Finally, it has been observed that malaria disturbs iron metabolism in the body (21).

6. INTESTINAL HELMINTHS:

Most of the work done at the coast of East Africa has demonstrated that the commonest type of anaemia is iron deficiency anaemia (3, 5, 6, 7, 8, 22, 23, 24). The central thesis from these studies has been that this anaemia is caused by hookworm infestation.

That hookworm cause chronic loss of blood from the gut is an undisputable fact; the amount of blood loss has been estimated to be in the region of 0.03-0.05 mls. per worm per day, with *Ankylostoma duodenale* causing somewhat more blood loss than *Necator Americianus* (2,22, 25). What has, however, not been established with the same certainty is the significant worm load. Working in Msambweni and using radio-isotope studies, Foy and Kondi (22) demonstrated that hookworm loads greater than 1000 worms were associated with significant iron deficiency.

Lyrise and Roche (26) in a review of literature found that a relationship exists between hookworm load of over 2,000 eggs per gram of faeces and iron deficiency anaemia. To resolve this controversy Lawson (2) emphasized the point that the hookworm load that would cause iron deficiency anaemia would, to a large extent depend on iron stores in the body. If the iron stores are precarious then even a small worm load would precipitate iron deficiency anaemia.

Miller, (10) found that the prevalence of hookworm infestation in parts of East Africa varies seasonally. The highest prevalence is in rainy seasons with 16 - 85% parasitization. Other workers have recorded different prevalence values: Levy (8), 35%; Latham et al, 69%; and Waruingi et al, 51%. In this study the prevalence was 43.2%.

Trichuris trichura was the second commonest intestinal herminth isolated in this study (18.6%). This worm also causes chronic blood loss from the gut, although the amount is about 30 times less than that caused by hookworm (25).

7. HAEMOGLOBINOPATHIES:

Kasili (27) working in Western Kenya found that the commonest cause of anaemia there was sickle cell disease. This was not the finding in this study of the patients studied, 15 had HBAS and only one had HBSS.

C. TYPES OF ANAEMIA (FROM PERIPHERAL BLOOD PICTURE):

This section will be discussed with some caution and reservations simply because a peripheral blood film is a poor index of the type of anaemia (28).

All the same, it is rather surprising that the results we obtained in this study are at complete variance with the findings of earlier workers (3, 4, 5, 6, 7, 8, 22,23,24), who all showed that the commonest type of anaemia is dimorphic anaemia (59.3%) followed by iron deficiency anaemia (36.4%), haemolytic anaemia, and lastly macrocytic anaemia.

1. DIMORPHIC ANAEMIA:

This type of anaemia shows both features of iron deficiency anaemia and macrocytic anaemia. It is exceedingly difficult to make a diagnosis of dimorphic anaemia from a peripheral blood film. Apart from a peripheral film being a poor index of the type of anaemia, ingestion of haematinics can modify a macrocytic picture, iron deficiency picture or haemolytic picture to that of dimorphic anaemia (28).

All constraints aside, however, if this observation is true, it will perhaps not be so surprising considering the many and varied factors involved in the pathogenesis of anaemia in pregnancy in this area. In my "CENTRAL THESIS" I will also try to logically justify this finding.

2. IRON DEFICIENCY ANAEMIA

This is assumed to be caused independently or interdependently, by hookworm infestation, poor dietary contents of iron, sweating, and failure to absorb iron from the gut due to a variety of reasons some of which are related to the high contents of phytates in the diet (29).

3. HAEMOLYTIC AND MACROCYTIC ANAEMIA:

It is interesting that only 5 patients in this study showed evidence of pure haemolytic and pure macrocytic anaemia. In an area holoendemic for malaria, this figure would have been expected to be higher. In the study done by Mati and associates in 1971 (16) it was found that the commonest type of anaemia of pregnancy in Nairobi was Megaloblastic anaemia followed by iron deficiency anaemia, dimorphic anaemia and haemolytic anaemia in that order.

They also showed that nearly half of the cases of megaloblastic anaemia were associated with malaria with strong evidence of haemolysis. These cases were primarily haemolytic anaemia with secondary megaloblastic changes due to consumption of folic acid.

Maybe the low incidence of macrocytic anaemia in this study could be explained by the findings of Foster (7). Foster studied 216 cases of severe anaemia in Mombasa in 1962 - 1963. Of these, 43 had megaloblastic anaemia from bone marrow studies - 40 were females and 3 males. He showed that megaloblastic anaemia had seasonal variations with the highest incidence in the months of November through to April, thereafter the incidence fell progressively until August, and the lowest incidence was in August, September and October, then started rising. The highest incidence corresponded to the dry season with low rains and therefore no vegetables. This study was in September, October and part of November - Foster's season of low incidence of megaloblastic anaemia.

In my "CENTRAL THESIS" I will bring in another aspect to account for the low recorded incidence of macrocytic anaemia in this study.

D. MATERNAL AND FETAL OUTCOME

There was one maternal death most certainly caused by anaemia in pregnancy. Mtimavalye et al (12) found that anaemia in pregnancy was the third leading cause of maternal mortality in Dar-es-Salaam. That no mother died once she had arrived in LGMH even in CCF is highly commendable. Due credit, must, therefore, go to the doctors, nurses and all the medical staff who worked tirelessly and diligently to make this possible.

Maternal morbidity was difficult to gauge. Anaemia in pregnancy however, exerts a considerable strain on this hospital in terms of bed occupancy (Roughly two out of every five beds in antenatal wards are occupied by patients with anaemia in pregnancy), blood consumption (the 118 patients with anaemia in pregnancy used a total of 255 pints of blood), and hospital stay (the average stay of each anaemic patient was 11.5 days) This, of course, does not include medical, investigational and other related amenities.

Fetal outcome was as expected with high fetal and neonatal wastage (the perinatal mortality of this group was 285.7 per 1000 compared to the unit's perinatal mortality of 172 per 1000 recorded during the period of study). Most of the babies with low birth weight were premature.

E. "CENTRAL THESIS":

I will discuss this part by drawing on the findings from earlier studies done in this area then relating them to what is known about anaemia in pregnancy and finally and logically try to justify our findings in this study.

Studies done at the Coast from as early as 1935 to as late as 1980 are all in agreement that the commonest type of anaemia in this area is iron deficiency anaemia (4 - 8, 22 - 24). Most of these studies, except the one by Waruingi et al (24) were conducted on the general population - i.e. - they were not specific for pregnant women.

Malaria is known to cause haemolysis and if this goes unchecked could lead to folic acid depletion; transforming a haemolytic type of anaemia to a megaloblastic type.

Malaria is holoendemic at the coast, and because of the known phenomenon of decline in immunity during pregnancy, malaria was expected, and was eventually shown, to be an important determinant of anaemia in pregnancy in this area.

From the two facts outlined above, I propose that most women enter pregnancy with marginal or borderline anaemia mainly due to iron deficiency. Once pregnant and with the breakdown of immunity, malarial haemolysis and consequent folic acid depletion then supervene transforming a predominantly iron deficiency anaemia into a dimorphic type picture. This, in my view, is the basic reason why the majority of the patients in this study exhibited a dimorphic type of anaemia.

F. RECOMMENDATIONS:

This study has brought out three pertinent aspects of anaemia in pregnancy in this area - viz:

- 1. The high prevalence of the condition, and more so in the younger members of the community who are married and are, therefore, expected to shoulder substantial responsibilities in running their own homes.
- 2. The severity of the condition
- 3. The multiplicity of its aetiological factors.

To combat this menace the approach must, therefore, be a multi-pronged attack. The old cliché of prevention being better than cure will repeatedly be emphasized in the following recommendations:-

- 1. There should be an increased awareness that anaemia in pregnancy is prevalent at the Coast and its magnitude is colossal. Anaemia in pregnancy must, therefore, be looked for in all patients. In this connection, it is encouraging to note that the majority of patients admitted to LGMH had had some form of ANC.

These antenatal clinics should be strengthened so that they are in a position to do haemoglobin concentration on all patients and not on only those who are clinically pale, as is the common practice. This has its short-comings, of course: over-crowding, shortage of staff, shortage of equipment, shortage of money. But in peripheral clinics a simple method like the use of Talquist papers or Spencer haemoglobinometer could be adopted.

Improvement of socio-economic conditions: This is the ultimate goal. Being a slow process, it would be quite a while before its benefits can be realised.

Health and Nutritional education: This should be given the emphasis it deserves.

Public Health measures, like personal hygiene, wearing of shoes and use of latrine should be emphasized. Other measures like control of mosquitoes also take rather a long time to accomplish.

Family Planning: We have shown in this study that anaemia in pregnancy is a problem of young women of relatively low parity. Family Planning would be pertinent here in postponing the age at which the first child is born and subsequently in spacing of the children.

Chemoprophylaxis: For now, chemoprophylaxis, although of short-term value, seems to be the only feasible way of checking the ravages of anaemia in pregnancy.

- 6.1. Iron and Folic Acid: These should be taken from as early in pregnancy as possible and then throughout pregnancy and the puerperium. Because this population is composed of women with no or only marginal educational status, it is our contention that a combined tablet taken once a day could greater improve compliance.
- 6.2 Anti-malarials: Should also be taken throughout pregnancy and the puerperium. This period is short and there should be no fear of loss of premunition (2,9). Reports of chloroquine-resistant malaria should be appreciated by medical personel and appropriate alternatives used.
- 6.3 Antihelminthics: Should be given to all pregnant women as early in pregnancy as possible, and then repeated towards the end of pregnancy. In this connection, it is noteworthy that alcopar (Bephenium hydroxymaphthoate) is inferior to vermox (Mebendarole) in the treatment of *Necator americanus*, the commoner and more ubiquitous worm in this area (30).
- 6.4 Fortification of commonly eaten foods by iron and folic acid. This has been tried with varying degrees of success in other countries (14). This is recommended because certainly anaemia in pregnancy is a reflection of low haematinic stores in the whole population of this area.

APPENDIX (PROFORMA)ANAEMIA IN PREGNANCY AT CPGH, MOMBASA

NAME

HOSP. NO.

STUDY NO.

GENERAL INFORMATION:

1. AGE 2. TRIBE 3. PARITY
4. OCCUPATION 5. EDUCATION
6. MARITAL STATUS
7. HUSBAND'S/FATHER'S OCCUPATION
8. AVERAGE DAILY DIET

PHYSICAL EXAMINATION:

1. PALLOR 2. JAUNDICE 3. OEDEMA
4. TEMPERATURE 5. CHEST 6. SPLENOMEGALY
7. HEPATOMEGALY 8. PATIENT IN CCF?

INVESTIGATIONS:

1. HB 2. PCV 3. MCHC
4. PERIPHERAL FILM
-
-
5. SICKLING TEST
- HB. ELECTROPHORESIS
6. SERUM BILIRUBIN
7. STOOL EXAMINATION

MANAGEMENT AND OUTCOME :

- 1. MANAGEMENT
.....
- 2. OUTCOME (PATIENT AND PREGNANCY)
.....

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CASE NO. 1

* * * *

INCOMPLETE ABORTION : EVACUATION OF THE UTERUS

INCOMPLETE ABORTION : EVACUATION OF THE UTERUS

<u>NAME</u>	: G. W. G. (Mrs.)	<u>L.M.P.</u>	: 1.9.1982
<u>UNIT NO.</u>	: 530277	<u>ADMISSION</u>	: 7.12.1982
<u>AGE</u>	: 28 years	<u>AMENORRHOEA</u>	: 14 weeks
<u>TRIBE</u>	: Kikuyu	<u>EVACUATION</u>	: 8.12.1982
<u>PARITY</u>	: 2+0		

PRESENTING HISTORY:

The patient was admitted to ward 6 through casualty on 7.12.1982 with a one-day history of profuse vaginal bleeding and lower abdominal pains. Her last menstrual period was on 1.9.1982; therefore, the period of amenorrhoea was 14 weeks.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

Menarche occurred at 16 years. She had regular menstrual periods. The cycle was 26 days and the duration 5 days.

She was par 2+0. Her first delivery was in 1971 and second in 1973. Both were full-term vaginal deliveries. She had used an intrauterine contraceptive device since her last delivery until Mid 1982.

PAST MEDICAL AND SURGICAL HISTORY:

This was not relevant.

FAMILY AND SOCIAL HISTORY:

She was a married house-wife. Her husband was a shop-keeper in Muranga town. There was no family history of chronic medical diseases.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She was not pale and had no jaundice cyanosis or peripheral oedema. Her vital signs were within normal limits.

Cardiovascular, respiratory and central nervous systems were essentially normal. Abdominal examination revealed a fundal height of 14 weeks. The abdomen was soft and slightly tender.

VAGINAL EXAMINATION:

The vulva was normal. The cervix was 2cm. dilated and products of conception could be felt through the os. The uterus was 14 weeks size and the adnexæ were free.

A diagnosis of incomplete abortion was made. She was prepared for evacuation of the uterus under general anaesthesia as described in the introduction.

EVACUATION OF THE UTERUS:

General anaesthesia was induced and maintained as described in the introduction. The patient was placed in lithotomy position. The vulva, vagina and perineum was swabbed with hibitane solution then the area was draped and she was catheterised.

Examination under anaesthesia confirmed the findings described above. Bulky products of conception were now digitally removed. An Auvard's speculum was then inserted into the vagina to expose the cervix whose anterior lip was held with a volsellum forceps. Gentle sharp curettage was then carried out until the uterus was empty. Ergometrine 0.5mg. was given intravenously. Total blood loss was about 200mls.

POST-OPERATIVE CARE:

Routine post-operative observations were taken. She was started on tetracycline capsules (500mg 6-hourly for 7 days). Six hours after the evacuation she was fully awake and was up and about. She was discharged to continue her medication at home.

COMMENT:

Aggarwal and Mati (1) reported that the leading indication for admission to the acute gynaecological ward in Kenyatta National Hospital was abortions, the majority of these being incomplete abortions. They also showed that the number was increasing over the years. Incomplete abortion is a clinical category of abortions where some products of conception, usually the fetus, have been expelled and others, commonly the placenta and/or the membranes are retained in utero (2). The uterus is then not well contracted and haemorrhage can be quite severe. Another important complication of incomplete abortion is sepsis. The organisms involved are *Escherichia coli*, anaerobic streptococci, haemolytic streptococci, staphylococci, *Clostridium welchii* and *Clostridium tetani* (2).

In the acute stage, sepsis can head to endotoxic shock and maternal mortality (3,4). According to Makokha (4), 43.4% of the maternal mortality at Kenyatta National Hospital during the period 1972-1977 were due to sepsis, and half of these were post-abortal. Even in developed countries, septic abortion is a major cause of maternal mortality (2).

Long term complications of septic abortion are chronic pelvic inflammatory disease leading to secondary infertility and ectopic pregnancy, and pelvic abscess (3). Habitual abortions and premature deliveries may also follow incomplete abortion especially if the abortion was induced (2).

To avoid these debilitating sequelae of incomplete abortion, this condition should be treated vigorously. The treatment involves aseptic evacuation of the uterus as was done in this case. In our unit, evacuation of the uterus is then followed by a course of broad-spectrum antibiotics.

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CASE NO. 2

* * * *

RIGHT BARTHOLIN'S GLAND ABSCESS : MARSUPIALIZATION

RIGHT BARTHOLIN'S GLAND ABSCESS : MARSUPIALIZATION

<u>NAME</u> : M.W.M. (Miss)	<u>PARITY</u> : 1 + 0
<u>UNIT NO.</u> : 531006	<u>L.M.P.</u> : 24.11.1982
<u>AGE</u> : 20 years	<u>ADMISSION</u> : 11.12.1982
<u>TRIBE</u> : Kikuyu	<u>OPERATION</u> : 13.12.1982

PRESENTING HISTORY

The patient presented in casualty on 11.12.1982 with a two-day history of a painful vulval swelling. She gave no history of vaginal bleeding. Her last menstrual period was on 24.11.1982.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at 15 years. Her menstrual periods were regular occurring every 28 days for 3 days. She was para 1 + 0. This delivery was in 1981 but the baby died one month later due to protracted diarrhoea and vomiting. She had never used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

This was non-contributory.

SOCIAL AND FAMILY HISTORY

She was single and unemployed. She lived with her mother in Nairobi.

PHYSICAL EXAMINATION

Her general condition was fair. She had no pallor, jaundice, peripheral oedema or lymphadenopathy. Her blood pressure was 110/60 mmHg., pulse was 84 per minute, and temperature was 36.4°C.

The cardiovascular, respiratory and abdominal systems were essentially normal. Vulval inspection revealed an inflamed, tender and cystic swelling on the right postero-lateral aspect of the vulva. The swelling measured about 4cm. by 3 cm. in size and distended the right labia majus and minus.

A diagnosis of a right Bartholin's gland abscess was made. She was to be treated by Marsupialization under general anaesthesia.

MARSUPIALIZATION

The vulva was shaved and she was premedicated with 0.6 mg. of atropine sulphate. General anaesthesia was induced and maintained as described in the introduction.

The patient was placed in lithotomy position. The vulva, vagina and perineum were cleaned with savlon solution and the area draped with sterile towels. Vulval examination confirmed the findings described above. The cervix was firm and closed, and the uterus was normal size. Both adnexae were free.

A curved incision along the whole length of the abscess was made with a scalpel through the labial skin just outside the hymenal ring. The incision was deepened into the abscess cavity and foul-smelling pus drained out. Some of the pus was collected on a serum swab for culture. A finger was inserted into the abscess cavity to break up the loculi and ascertain that all the pus had drained out. The abscess cavity was then irrigated with warm saline.

The walls of the abscess were now everted and stitched to the incised vulval skin with interrupted, sutures of No.00 chromic catgut on an atraumatic needle. There was minimal bleeding. A sufratulle gauze was left in-situ.

POST-OPERATIVE CARE

Her vital signs were observed half-hourly until she was fully awake. She was given tetracycline capsules; 500 mg. 6-hourly for seven days. The sufratulle gauze was removed after 24 hours. She was advised on perineal toilet with warm saline solution twice daily and to keep the perineum clean and dry. She was then discharged for follow up in the gynaecology clinic after 6 weeks. She did not, however, turn up for review in the clinic.

PUS SWAB (AEROBIC CULTURE)

This did not grow any bacteria on culture.

COMMENT

The Bartholin's glands, also known as the major vestibular glands, are a pair of compound racemose glands situated on either side of the vaginal orifice. They secrete a mucoid alkaline fluid during sexual excitation for lubrication. The duct on either side opens in the vestibule between the labia minus and the hymenal ring.

The lesions of these glands are either inflammatory or neoplastic; the former extremely common, the latter rare (1). Inflammatory conditions cause blockage of the duct, usually near its opening, with consequent accumulation of fluid in the duct and the gland. Although such blockage often results from infection, scarring due to trauma may also be an aetiological factor. In repair of a medio-lateral episiotomy or perineal tear and in posterior colporrhaphy sutures may injure or even ligate the duct (2).

Historically, gonococcus has been incriminated as the commonest organism causing acute Bartholinitis and Bartholin's gland abscess because this is one of the areas in the genital tract specifically affected by this organism. Studies, however, have shown that this is not so. Oliphant and associated (2) isolated *N. gonorrhoeae* in only 3.5% of their patients, while in Lee et al's study (3) this figure was 11.8%. The commonest organisms from both these studies were Gram negative bacilli. The pus swab from this patient did not grow any bacteria on culture; but this may be because anaerobic culture and culture for *N. gonorrhoeae* were not done.

The treatment of acute Bartholinitis in its initial stage is antibiotics, analgesics and bed rest. But once an abscess has formed then surgery is mandatory. Simple incision and drainage has very high recurrence rates (2). Marsupialization, first described by Jacobson (4), is a technically simple procedure which has low recurrence rates. The objective of this operation is to create a new meatus for the secretions of the Bartholin's gland.

Oliphant and associates (2) listed the following advantages of Marsupialization:-

- (i) Mucous secretion is maintained.
- (ii) The procedure is technically simple with minimal blood loss and no injury to surrounding tissue.
- (iii) Has no or minimal post-operative discomfort and morbidity, therefore, hospital stay is short.

As was done in this patient, marsupialization is the operation of choice in our unit. This is then followed by a course of broad-spectrum antibiotics.

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CASE NO. 3

* * * *

CONCEPTION WITH AN INTRA-UTERINE DEVICE IN-SITU:

RIGHT TUBAL PREGNANCY - LAPARATOMY AND RIGHT

SALPINGECTOMY

CONCEPTION WITH AN INTRAUTERINE DEVICE IN-SITU :RIGHT TUBAL PREGNANCY - LAPARATOMY ANDRIGHT SALPINGECTOMY

<u>NAME</u>	: T.N.M. (Miss)	<u>L.M.P.</u>	: 25.11.1982
<u>UNIT NO.</u>	: 492036	<u>ADMISSION</u>	: 19.2.1983
<u>AGE</u>	: 23 years	<u>AMENORRHOEA</u>	: 12+ Weeks
<u>TRIBE</u>	: Kikuyu	<u>OPERATION</u>	: 20.2.1983
<u>PARITY</u>	: 2 + 0	<u>DISCHARGE</u>	: 27.2.1983

PRESENTING HISTORY

The patient was admitted through casualty to the gynaecological emergency ward on 19.2.1983. She gave a two-month history of vaginal spotting and lower abdominal pains. Her last normal menstrual period was on 25.11.9182; therefore, the period of amenorrhoea was 12+ weeks.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at the age of 14 years. She had regular menstrual periods coming every 30 days and lasting for 4 days.

She was para 2 + 0. Both her deliveries, in 1978 and 1980, were uncomplicated vaginal deliveries. After her last delivery, she started using an intrauterine contraceptive device which was removed on 29th January 1983, because of the symptoms mentioned above.

PAST MEDICAL AND SURGICAL HISTORY

She had bronchial asthma for which she was attending the medical clinic.

FAMILY AND SOCIAL HISTORY

She was divorced and lived with her children in Ngong town. She owned a small business in this town.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She had no pallor, oedema or jaundice. Her vital signs were within normal levels.

The chest was clear and the cardiovascular system was normal. The abdomen was not distended. There was slight tenderness and guarding in the hypogastrium. There were no palpable abdominal masses and shifting dullness and fluid thrill signs were negative.

VAGINAL EXAMINATION

The vulva was normal. The cervix was firm and closed. The uterus was normal size and was pushed to the left by a soft very tender right adnexal mass. The mass measured about 6 cm. by 6 cm. Excitation sign was positive, more so on moving the cervix to the right.

An impression of a right tubo-ovarian mass was made. A decision to do a laparotomy was taken and the patient was appropriately prepared as described in the introduction. Two units of compatible blood were booked and made ready.

LAPARATOMY AND RIGHT SALPINGECTOMY

She was premedicated with 0.6 mg of atropine sulphate and 50 mg of pethidine intramuscularly half an hour before the operation. In theatre general anaesthesia was induced and maintained as described in the introduction. She was then catheterised aseptically.

Examination under anaesthesia confirmed the pelvic findings described above. The abdomen was now swabbed with hibitane solution followed by spirit and the area draped with sterile towels. Through a mid-line subumbilical incision the abdomen was opened in layers as described in the introduction.

There were no pelvic adhesions. The uterus was normal size. There was a round slightly bleeding ectopic gestation occupying the ampullary region of the right fallopian tube. The left tube and both ovaries appeared healthy and normal. There was haemoperitoneum of clotted blood estimated to be 300 mls.

Using two curved artery forceps the proximal end of the right tube was clamped and divided. The mesosalpinx was now clamped in a series of bites parallel to the tube and cut between the clamps until the fimbrial end. The tube with the ectopic gestation was removed and submitted to the laboratory for histopathology. The mesosalpinx and the tube were now transfixed with No.1 chromic catgut.

Blood clots were evacuated from the peritoneal cavity. After ascertaining that haemostasis had been achieved, the abdomen was closed in layers as described in the introduction. Total blood loss was about 500 mls.

POST-OPERATIVE CARE

The patient made uneventful recovery from anaesthesia. She received routine post-operative care as described in the introduction. Post-operative haemoglobin concentration was 11.5 gm/dl. She was discharged in good condition on 27.2.1983 after removal of all stitches.

HISTOLOGY REPORT (NO.1152):

Histology shows extensive haemorrhage with necrosis and degenerating chorionic villi with the fallopian tube. These features are those of tubal pregnancy.

FOLLOW-UP

She was seen in the gynaecology clinic on 24.3.1983. She had no complaints and was not anaemic. The abdominal scar was well healed and the abdomen was soft and not tender. Pelvic examination revealed an anteverted freely mobile uterus and clear non-tender adnexae.

She was again seen on 4.8.1983 with an amenorrhoea of 9 weeks. Pelvic examination and ultrasonography confirmed an intrauterine pregnancy. She was hence referred to the antenatal clinic for follow-up.

COMMENT

Presented in this paper is a 23 year old para 2 + 0 lady who conceived with an intrauterine contraceptive device (IUCD) in-situ. The ovum implanted in the ampulla of the right tube. About one month after her last normal menstrual period she developed vaginal spotting and lower abdominal pains. These symptoms persisted for two months before the definitive diagnosis was made. In the meantime the IUCD was removed, thinking it was the cause of her symptoms, without any relief.

In some tropical countries, ruptured tubal pregnancy is the commonest surgical emergency among women.(1). In Kenyatta National Hospital, Makokha (2) found that ectopic pregnancy was an important cause of maternal mortality; with a rate similar to those in the western more affluent countries (3,4).

There are certain factors which are known to predispose to ectopic gestation. Leading among these is pelvic inflammatory disease (PID) caused by either gonorrhoea, puerperal or post abortal sepsis, tuberculosis, or appendicitis (1,3,4). Treatment of PID on the other hand may mean that pregnancy could subsequently occur in tubes which would otherwise have been totally blocked (1,4). Other predisposing factors include operations on the tubes or any other pelvic surgery, endometriosis, late fertilization, transperitoneal migration of the ovum, and presence of an IUCD.

At laparotomy, the pelvic cavity of this patient was clear without any evidence of PID. The left tube appeared healthy and normal. It is probable, therefore, that conception with an IUCD in-situ predisposed to the ectopic pregnancy in this case.

Lehfeldt et al (5) in estimation of the probable number of fertilized ova among women wearing IUCDs, suggested that the devices reduces uterine implantation by about 99.5%. tubal implantation by 95% and ovarian implantation not at all. These workers concluded that IUCDs do not cause ectopic pregnancy in general or ovarian pregnancy in particular.

This patient had a slowly leaking ectopic pregnancy - the so-called "chronic ectopic". The diagnosis of a slowly leaking ectopic pregnancy is puzzling and is frequently missed, often being mistaken for a chronic pelvic abscess or an adnexal tumour (1). Here the symptoms differ from the sudden, dramatic and crippling symptoms of an acute ruptured ectopic pregnancy. The most constant features, as were exhibited in this case, are chronic pelvic pain and irregular uterine bleeding (1). Pelvic tenderness is not very marked and a mass may or may not be palpable (1). This patient had a tender right adnexal mass.

Once the diagnosis of ectopic pregnancy is made surgery is the treatment of choice. This should not be delayed especially in the life-threatening acute ruptured variety. Stewart (1) succinctly summarised the management of ectopic pregnancy : "open quickly, clamp quickly, transfuse quickly, remove the tube and get out quickly.

Whether salpingectomy or salpingo-oophrectomy should be done is still controversial (4). In our unit, salpingectomy is the surgical treatment that is almost exclusively employed. In areas with shortage of blood, auto-transfusion is life saving (1).

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CASE NO. 4.

* * * * *

TORTION OF RIGHT SEROUS CYSTADENOMA AND LEFT DERMOID CYST:

BILATERAL OOPHORECTOMY.

TORSION OF RIGHT SEROUS CYSTADENOMA AND
LEFT DERMOID CYST : BILATERAL OOPHORECTOMY

<u>NAME</u> : B.T.M. (Mrs.)	<u>L.M.P.</u> : 22.12.1984
<u>UNIT NO.:</u> 661093	<u>ADMISSION</u> : 27.12.1984
<u>AGE</u> : 26 years	<u>OPERATION</u> : 3.2.1985
<u>TRIBE</u> : Luhya	<u>DISCHARGE</u> : 11.2.1985
<u>PARITY</u> : 2+1	

PRESENTING HISTORY:

The patient was admitted to the non-emergency gynaecological ward on 27.12.1984 as a referral from the gynaecology clinic. She gave a 6-month history of progressive abdominal swelling, dull abdominal pains and low backache.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

Menarche occurred at the age of 14½ years. She had regular menstrual periods - the cycle was 26-28 days and the duration 3 days. Her last menstrual periods was on 22.12.1984

She was Para 2+1. Both deliveries were full-term spontaneous vaginal deliveries and the children were alive and well. Her last delivery was in 1983. The abortion was in 1981 at 4 months gestation. Evacuation of the uterus was not done. She had never used any modern methods of contraception.

PAST MEDICAL AND SURGICAL HISTORY:

This was non-contributory.

FAMILY AND SOCIAL HISTORY:

She was a married housewife who neither smoked nor consumed alcohol. The couple and their children lived in an estate in Nairobi. There was no relevant family history.

PHYSICAL EXAMINATION

She was in a satisfactory general condition. She had no pallor, jaundice, oedema or peripheral Lymphadenopathy. The vital signs were within normal levels. Her cardiovascular, respiratory and central nervous systems were essentially normal.

ABDOMINAL EXAMINATION:

The abdomen was uniformly distended with a tense non-tender mass which corresponded to a 30-weeks uterine pregnancy. The mass was smooth, cystic, mobile, dull to percussion, and arose from the pelvis. The liver and spleen were not palpable.

PELVIC EXAMINATION:

The vulva and vagina were normal. The cervix was firm, parous and closed. The uterus was normal size, anteverted and mobile. The mass described above had its origin from the right adnexa. The left adnexa had a soft non-tender mass measuring about 8 cm. in diameter.

DIAGNOSIS AND MANAGEMENT

A diagnosis of bilateral ovarian cysts was entertained. Several investigations were done and the results are shown below

RESULTS OF THE INVESTIGATIONS:

Haemoglobin : 10.7 gm/dl
 Haematocrit : 29.2%
 Sodium : 132 mmol/l
 Potassium : 4.7 mmol/l
 B.U.N : 6.6 mmol/l
 M.S.S.U. : No Bacterial growth on culture.
 Pap Smear : Class I
 Ultrasound : There is a large cystic mass arising from the pelvis
 This is most likely an ovarian cyst.

A laparotomy was planned for her but due to various constraints this could not be done as soon as planned. On the night of 2nd-3rd February, 1985 she complained of sudden onset of acute lower abdominal pains. This was associated with nausea and vomiting. On examination, she was found to be in a distressed condition. Her pulse was 110 per minute and temperature was 37.5°C . The abdominal mass was now 34 weeks size, tense and tender. An impression of torsion of the pedicle was made. She was given 100mg of intramuscular pethidine for analgesia and an intravenous drip of 5% dextrose was set up. Blood for grouping and crossmatching was taken then she was prepared for emergency laparotomy as described in the introduction.

LAPARATOMY:

In theatre general anaesthesia was induced and maintained as described in the introduction. The bladder was catheterised aseptically. Examination under anaesthesia confirmed the findings described above.

The abdomen was now cleaned with hibitane and draped. Through a right paramedian incision the abdomen was opened in layers as described in the introduction. A huge right ovarian cyst was found which measured about 30cm. in diameter and which was freely mobile. It had a long pedicle which had twisted three times. The surface of the cyst was smooth and the fluid underneath was serous.. There was an oval mass in the left ovary measuring about 8cm. in its biggest diameter. It had cystic and firm areas. Both tubes appeared healthy and the uterus was normal size.

Without untwisting the pedicle of the right ovarian cyst, the cyst was delivered through the abdominal incision. The pedicle was then doubly clamped with two curved artery forceps then cut between the forceps. The proximal stump of the pedicle was then transfixed with No.2 chromic catgut.

The left ovarian mass was now lifted from the pelvis. The infundibulo-pelvic ligament together with the ovarian ligament were doubly clamped with Koch clamps. Both ligaments were then divided between the clamps and transfixed with No.2 chromic catgut. The ovarian mass was removed and on bisecting it

yellow greasy material oozed out. There were also hairs and what looked like cartilage in the cyst. An operative diagnosis of right serous cyst and left dermoid cyst was made. Both specimens were submitted to the laboratory for histological examination.

After ensuring haemostasis the abdomen was closed in layers. Total blood loss was about 300mls.

POST-OPERATIVE CARE:

The patient's vital signs were observed half-hourly until she was fully recovered from anaesthesia. She was maintained on intravenous fluids for the first 24 post-operative hours. Pethidine 100mg was given every 6 hours for analgesia for 48 hours.

Recovery from anaesthesia was smooth and uneventful. On the second post-operative day she had passed flatus and bowel sounds were established. She was thus started on oral sips of water and was mobilized from bed. Post-operative haemoglobin estimation done on the third day showed a haemoglobin concentration of 8.9gm/dl. Because of this, she was transfused with two units of compatible blood. Alternate and all abdominal stitches were removed on the sixth and seventh post-operative days respectively. The wound was clean and well healed. She was then discharged to be reviewed in the gynaecology clinic in 6-weeks time.

GYNAECOLOGICAL REVIEW:

She attended the clinic on 28.3.1985. She complained of weakness, insomnia and hot flushes. Examination showed mild pallor. Her vital signs were within normal limits. The abdomen was soft and the scar well healed. Pelvic examination revealed a uterus which was normal size and clear adnexae.

The nature of her disease, the operation which was done and the consequences thereof were explained to her in detail. She was given haematinics and diazepam and will be reviewed again in 3 months.

HISTOLOGY REPORT - NO. 1390.

Two specimens received. One shows partially infarcted unilocular cyst whose histology is in keeping with serous cystadenoma of the ovary. The second specimen is a bisected mass containing whitish gelatinous material and hair. Histology shows ovarian tissue containing hair, cartilage, bone and smooth muscles. This is a benign cystic teratoma.

COMMENT:

This patient presented with two of the most common tumours of the ovary i.e. serous cystadenoma and benign cystic teratoma (dermoid cyst). From literature, serous cystadenoma^{is} said to comprise 20-40% of all benign ovarian neoplasms and dermoid cysts constitute 10-15% of ovarian tumours (1,2). In Kenyatta National Hospital, Ojwang (3) found that 45.1% and 21.1% of all ovarian tumours were serous cystadenomas and dermoid cysts respectively. While Grech and Lewis (4) studying ovarian tumours in Ugandan Africans found that the commonest tumours were dermoid cysts (23.2%), and serous cystadenomas occurred in only 9.2% of the 387 cases that they analysed.

As was exemplified in this case, benign tumours of the ovary commonly present with a cystic pelvic or abdominal mass and/or abdominal pains (1,2,3). Most of these cystic masses are, however, physiological rather than pathological especially if they are small and are found in a woman who is in the reproductive period of her life (1,2). The two commonest nonneoplastic cysts of the ovary are Follicular cysts and corpus luteum cysts (1,2). These are important differential diagnoses of benign neoplastic ovarian cysts. Marked ascites may simulate a large ovarian cyst. Percussion is important to differentiate between the two. An ovarian cyst is characteristically dull to percussion anteriorly and resonant in the flanks. The reverse is the case with ascites. Other conditions which may mimic an ovarian cyst, or vice versa, are pregnancy, tuberculous peritonitis, uterine fibroids and obesity (1,2). Ultrasound, as was done in this case, and laparoscopy may be indicated in doubtful cases.

Once the diagnosis of "Ovarian cyst" has been made the next question will be whether or not to operate. If one suspects that one is dealing with a nonneoplastic cyst, then a period of expectant observation is justified because the majority of the functional cysts regress spontaneously (1,2). Benign neoplastic cysts rarely regress spontaneously; in fact they tend to increase in size. This, together with the ever-present risk of torsion of the pedicle as well as the more serious risk of malignant change negate procrastination (1,2).

In this patient, both cysts were of considerable size; with the serous cystadenoma corresponding to 30 weeks gestational size of a uterus and the dermoid cyst measuring about 8cm. in diameter. She also gave a 6-month history of progressive abdominal swelling. Clinically, therefore, both cysts in this case were thought to be pathological and she was scheduled for operation. While waiting for the elective surgery the larger of the two cysts underwent torsion of its pedicle. Torsion of the pedicle is the commonest complication of an ovarian cyst (1,2). As occurred in this case, this complication is associated with severe pain, nausea and vomiting, tense rigidity in the lower abdomen, tachycardia and moderate pyrexia. All these features are consistent with acute appendicitis, and not infrequently this is the preoperative diagnosis (2). In this patient, the diagnosis of torsion of the pedicle was strongly suspected. As was done in this case, once the diagnosis of torsion of the pedicle is made then surgery should not be delayed to avoid the cyst becoming gangrenous. During surgery for torsion of an ovarian cyst, care must be taken not to untwist the pedicle before clamping it in order to prevent toxic matter entering the circulation.

Other complications of ovarian cysts include: Rupture of the cyst, suppuration, haemorrhage into the cyst, and malignant change (1,2). Malignant change is said to complicate about 25% of serous cysts and less than 3% of dermoid cysts (1,2). Benign serous cysts exhibit a wide spectrum of gross external appearance - from simple unilocular cysts to multilocular cysts with papillomatous or solid ingrowths. Clinically, the latter are not unlike malignant tumours. Surgery for unilocular cystomas, as was the case in this patient, involves unilateral cystectomy or oophorectomy with conservation of the uterus and the uninvolved ovary (2). In the presence of extensive papillomatous growths and in the case of any neoplastic cyst occurring in a postmenopausal woman, the safer and wiser operation is total hysterectomy and bilateral salpingo-oophorectomy (2). In this patient the other ovary could not be preserved because it had a dermoid cyst.

Histogenetically, serous cystadenomas arise from the surface epithelium of the ovary (2). The origin of dermoid cysts is still controversial. Benign cystic teratomas are composed of mature histologic structures of ectodermal, mesodermal and endodermal origin. Using cytogenetic and biochemical studies, Linder and associates (5) convincingly showed that benign cystic teratomas are parthenogenic tumours that arise from a single germ cell after the first meiotic division.

Sometimes a cystic teratoma contains tissues from specialized glands. Considerable amounts of thyroid tissue (struma ovarii) may occur causing thyrotoxicosis or thyroid malignant degeneration. Another example is argentaffinoma causing the carcinoid syndrome which is characterised by flushing, cyanosis and abdominal cramps due to high levels of circulating serotonin.

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CASE NO. 5

* * * *

SCHISTOSOMIASIS OF THE CERVIX : MEDICAL TREATMENT

SCHISTOSOMIASIS OF THE CERVIX : MEDICAL TREATMENT

<u>NAME</u> : Z.Z.A (Mrs.)	<u>PARITY</u> : 0 + 0
<u>UNIT NO.</u> : 508672	<u>L.M.P.</u> : 2.8.1982
<u>AGE</u> : 16 Years	<u>ADMISSION</u> : 3.8.1982
<u>TRIBE</u> : Pokomo	<u>DISCHARGE</u> : 14.8.1982

PRESENTING HISTORY

This patient was referred from Garissa Provincial Hospital on 3.8.1982 because of a suspicion of cervical carcinoma. She gave a two-year history of abdominal pains, and a two-month history of a sensation of a vaginal mass.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at 14 years. She menstruated regularly for 3 days every month. Her last menstrual period was on 2.8.1982. She was nulliparous and had not used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

She did not give any relevant past medical and surgical history.

SOCIAL AND FAMILY HISTORY

She was married. Her husband was a hawker. The couple lived along the banks of Tana River. There was no family history of chronic medical diseases.

PHYSICAL EXAMINATION

She was a young lady of satisfactory general condition. She had no pallor, jaundice, peripheral oedema or lymphadenopathy.

Her cardiovascular, respiratory and central nervous systems were essentially normal. The abdomen was soft with no ascitis or hepato-splenomegally.

VAGINAL EXAMINATION

The vulva and vagina appeared healthy and normal. Speculum examination revealed the cervix which had multiple pale polypoidal growths all around it. Each of these growths was about 2-3 cms. long and about 0.3 cm. in diameter, and they were firm on touch. The uterus was axial and normal size, and the parametria were clear on bimanual examination.

An impression of chronic granulomatous cervicitis was made. Using an artery forceps one of the cervical growths was twisted and removed then submitted to the laboratory for histopathology. While awaiting the results of the histology several investigations were done.

RESULTS OF THE INVESTIGATIONS

Haemoglobin : 12.9 gm/dl.
 Haematocrit : 40.5%
 B.U.N. : 4.6 Mmol/l.
 Stool : No ova or cysts seen.
 Urine : No ova of *S. haematobium* seen.
 Cervical Biopsy : Friable fragments received. Microscopy reveals marked (No.1315/82) pseudo-epitheliomatous hyperplasia. Numerous schistosome ova and adult worms seen. Features are consistent with schistosomal infestation of the cervix. No evidence of malignancy.

After receiving the histology report the patient was commenced on oxaminiquin (vansil) tablets (1.5 mg per Kg. body weight in two divided doses). She was then referred back to Garissa hospital for follow-up

COMMENT

Schistosomiasis may produce a variety of lesions in any part of the female genital tract, from the vulva to the ovary. These may simulate cancer, venereal diseases or tuberculosis and so demand accurate diagnosis (1,2)

The main species which infect man are schistosome haematobium, *S. mansoni* and *S. japonicum*. *S. haematobium* and *S. mansoni* are endemic in Kenya with *S. haematobium* being far more prevalent and widely distributed (3). This patient lived along Tana River, one of the highly endemic areas in Kenya (3).

The adult worms of the *S. haematobium* species lives in the venous plexus around the bladder and *S. mansoni* in the mesenteric veins. There is anastomosis between vaginal and vesical plexus and between vaginal and haemorrhoidal plexus. By this means ova or worms get lodged in the vagina. The uterine plexus anastomoses with ovarian plexus above and the vaginal plexus below. Through these anastomotic channels the ova or worms can spread to the uterus and adnexae. In the pre-pubertal age group genital schistosomiasis is mainly confined to the vulva and lower part of the vagina, while in the adult the commonest sites of involvement are the cervix, vulva, vagina, ovaries, fallopian tubes and corpus uteri in that order (1,2,4,5).

Cervical schistosomiasis causes multiple papillomatous sessile or pedunculated growths which ulcerate easily leading to purulent discharge and contact bleeding (1,2). Other symptoms are those of pelvic inflammatory disease, infertility, and those of urinary and intestinal schistosomiasis (1). This patient presented with a two-year history of lower abdominal pains and a two-month history of a sensation of a mass in the vagina. She did not give any history of vaginal discharge or contact bleeding. With this history and the pelvic findings as were shown in this patient, definitive diagnosis can only be made by histopathological findings.

That urinary and genital schistosomiasis are precancerous is still very much controversial. In Egypt, where extensive work has been done in this regard, schistosomiasis has been strongly associated with carcinoma of the bladder, vulva, vagina and cervix (1,2). In other areas the position is still equivocal (4).

The management of genital schistosomiasis involves administration of anti-schistosomal drugs. This eradicates active schistosomiasis. Chronic ulceration of the cervix usually requires cauterization. This patient received anti-schistosomal treatment but was not cauterized. It would have been advisable to review her later - say six to twelve months after the treatment, but this was not feasible because of the distance from Garissa to Nairobi.

This case emphasizes the importance of cervical biopsy before commencing treatment in any patient who presents with a cervical growth. It is also interesting as a differential diagnosis of cervical lesion.

Medical treatment of schistosomiasis in patients who come from endemic areas perhaps serves only a limited and short-term purpose. The ultimate goal is the eradication of the spread of schistosomiasis; as detailed by Magdi (2).

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CASE NO. 6

* * * *

RUPTURED TUBO-OVARIAN ABSCESS:

LAPARATOMY AND LEFT SALPING-OOPHORECTOMY

RUPTURED TUBO-OVARIAN ABSCESS : LAPARATOMY
AND LEFT SALPINGO-OOPHRECTOMY

<u>NAME</u> : F.B.L. (Miss)	<u>PARITY</u> : 0 + 0
<u>UNIT NO.:</u> 539940	<u>L.M.P.</u> : 23.1.1983
<u>AGE</u> : 20 Years	<u>ADMISSION</u> : 2.2.1983
<u>TRIBE</u> : Mganda	<u>OPERATION</u> : 2,2,1983

PRESENTING HISTORY

The patient was admitted to the gynaecological emergency ward on 2.2.1983 with a history of severe abdominal pains for two days. The pains initially started in the left iliac fossa but had now spread to the whole abdomen. There was no history of vaginal bleeding and her last menstrual period was on 23.1.1983 for four days.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at the age of 13 years. She menstruated regularly for 4 days after every 24 days. She was nulliparous and had not used any contraceptives. She gave no history of sexually transmitted diseases.

PAST MEDICAL AND SURGICAL HISTORY

This was non-contributory.

FAMILY AND SOCIAL HISTORY

She was single, unemployed and lived with friends in Pumwani Majengo - a slum area of Nairobi.

PHYSICAL EXAMINATION

Her general condition was poor. She was sick-looking, weak, febrile and dehydrated. She, however, had no pallor, cyanosis, jaundice or peripheral oedema.

VITAL SIGNS

Blood Pressure	: 100/80 mmHg
Pulse Rate	: 120 per minute regular with small volume
Temperature	: 38.5°C
Respiration	: 22 per minute.

CARDIOVASCULAR AND RESPIRATORY SYSTEMS

Both were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was not distended. There was generalized abdominal tenderness, guarding, rigidity and rebound tenderness. The liver and spleen were not palpable.

Paracentesis was negative.

VAGINAL EXAMINATION

The vulva was normal. The cervix was firm nulliparous and closed. The pouch of Douglas was full and very tender. There was bilateral adnexal tenderness and the excitation sign was positive bilaterally. It was impossible to define pelvic organs because of the exquisite tenderness.

An impression of a pelvic abscess with a differential diagnosis of a ruptured ectopic pregnancy was made. The patient was quickly prepared for emergency laparotomy as described in the introduction. Intravenous 5% dextrose was started and a blood specimen was taken for urgent grouping and crossmatching. She was premedicated as described in the introduction.

LAPARATOMY AND LEFT SALPINGO-OOPHERECTOMY

In theatre general anaesthesia was induced and maintained as described in the introduction. She was then catheterised aseptically. Examination under anaesthesia revealed a nulliparous closed cervix, normal - sized uterus and a left adnexal soft boggy mass measuring about 4 cm. in diameter. The pouch of Douglas was full.

The abdomen was swabbed with hibitane solution then draped. Through a midline subumbilical incision the abdomen was opened in layers. The pelvic cavity had dense moderate adhesions. The uterus was normal size. There was a left tubo-ovarian abscess which had ruptured releasing about 600 mls. of pus in the peritoneal cavity, mainly in the pouch of Douglas. The right tube was thickened and blocked terminally, but the right ovary appeared grossly normal.

Using a syringe and needle some of the peritoneal pus was aspirated. After expelling air from the syringe, the needle was bent double on itself. This was submitted to the laboratory for anaerobic culture. The left tube was now doubly clamped with curved artery forceps near its cornual end and divided. The mesosalpinx was then doubly clamped parallel to the tube and cut between the clamps. The infundibulo-pelvic ligament was also doubly clamped and divided. The tubo-ovarian abscess was now removed in-toto and sent for histopathology.

The infundibulo-pelvic ligament was transfixed with No.2 chromic catgut and the mesosalpinx together with the stamp of the tube were ligated with No.1 chromic catgut. Haemostasis was achieved.

The pelvic adhesions were gently released by blunt finger dissection.. Peritoneal wash-out was now done using 500 mg of Rifocin in warm saline. A corrugated drain was left in-situ and passed out of the peritoneal cavity through an incision in the left iliac fossa. It was secured to the skin with a silk stitch and a safety pin. The abdomen was then closed in layers as described in the introduction.

POST-OPERATIVE CARE

Recovery from anaesthesia was uneventful. She received intravenous fluids for 48 hours. She was given intravenous ampicillin (one gram 6-hourly) and metronidazole (500 mg 6-hourly) for 48 hours. After this she was continued on oral ampicillin (500 mg 6-hourly) and Flagyl (400 mg 6-hourly) for seven days. Intramuscular pethidine (100 mg 6-hourly) was given for 48 hours for analgesia.

By the second post-operative day her general condition was satisfactory. She was afebrile, not pale and had bowel sounds. Intravenous fluids were discontinued and she was started on oral sips of water and was gradually mobilized from bed. The drain was shortened and eventually removed on the fourth day.

Her post-operative haemoglobin concentration was 10.5 gm/dl. and the W.B.C. count was $8.3 \times 10^9/L$. She made steady and satisfactory recovery. Alternate and all abdominal stitches were removed on the sixth and seventh post-operative days respectively. She was then discharged to be reviewed in the gynaecology clinic after 6 weeks.

PUS CULTURE (Anaerobic Isolate)

Bacteroides species isolated. Sensitive to Metronidazole
(among other drugs).

HISTOLOGY (NO. 787/83)

Histology shows a thickened fallopian tube with necrotic material in the lumen. There is transmural acute inflammatory cell infiltrate of the tube. The ovary shows acute and chronic inflammatory cell infiltrate.

These features are in keeping with tubo-ovarian abscess.

GYNAECOLOGICAL FOLLOW-UP

She was seen in the clinic on 23.4.1983. Her general condition was good. The abdomen was soft, non-tender, and the scar was well healed. Pelvic examination revealed a retroverted normal-sized uterus and clean adnexae.

COMMENT

Acute and chronic pelvic inflammatory disease (P.I.D.) is one of the three leading causes of admission to Kenyatta National Hospital (1). A similar situation is found in most parts of the tropics (2). This is partly due to poor care and hygiene during and following delivery and abortion, and partly due to the high prevalence of venereal diseases (2). Gonorrhoea, puerperal sepsis and post-abortal sepsis are the commonest causes of P.I.D. (3). The other causes are appendicitis and tuberculosis, and the use of the intrauterine contraceptive device is a known predisposing factor (3).

All these conditions properly and adequately treated in their acute stages should prevent their disabling complications. Unfortunately, chemotherapy is seldom used in the right way, at the right stage of the disease, and in the right dosage; chronic pelvic infection then becomes an inevitable sequelae (2,3). Once the chronic stage is reached, other organisms, mainly anaerobes then invade the diseased pelvic organs (2,3,4). If the disease is left unchecked large pyosalpinges and tubo-ovarian and pelvic abscesses will develop.

This patient was admitted with a left tubo-ovarian abscess. She was nulliparous and denied any history of sexually transmitted diseases. But from her socio-economic background, the initial infection can be assumed to be gonococcal or post-abortal.

Once the diagnosis of tubo-ovarian or pelvic abscess is made then surgery is the treatment of choice (5). Initially, if the patient's condition is not very bad, this can be proceeded by a course of parenteral broad-spectrum antimicrobials - for 24 to 48 hours (2,3). But if the patient is critically ill or if the abscess has ruptured, as had occurred in this case, then temporizing is uncalled for (3,5).

Although most authorities recommend radical surgery to avoid recurrences (2,3), the extent of the surgery should nevertheless be individualised. Mickal and associates (5) found that drainage and antibiotics alone had very high mortality rate. They performed total hysterectomy and bilateral salpingo-oophrectomy for the majority of their patients, but in a few cases they did the quick and more conservative unilateral salpingo-oophrectomy. This latter operation was reserved for the critically ill patients, for the young patients, and for the patients of low parity who desired more children. This patient who critically ill, was young and was nulliparous; thus the decision to do unilateral salpingo-oophrectomy.

At the stage of chronic P.I.D. with abscess formation, polymicrobial is the status quo. These patients should, therefore be treated with broad-spectrum antimicrobials. Fomulu (4) found that Tetracyclines alone or in combination with Metronidazole or Gentamycin was the suitable treatment at this stage. This patient was treated with ampicillin and Metronidazole and did very well. The anaerobic pus culture taken during the operation grew bacteroides sensitive to Metronidazole.

Chronic pelvic infection is an important cause of chronic pelvic pain, with dyspareunia and secondary dysmenorrhoea, of infertility due to tubal obstruction, and of menstrual upsets usually in the form of menorrhagia and polymenorrhoea (3). These patients overcrowd out-patient and gynaecological clinics, while others present with diverse psychosomatic disorders. The immediate problem is the proper management of pelvic infection at whatever stage it presents. The ultimate goal is prevention, by better obstetric care and by control of the social and epidemiological factors which favour the spread of infections especially venereal diseases.

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Ruptured Tubo-Ovarian Abscess.

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CASE NO. 7

* * * *

VESICO-VAGINAL FISTULA : SUCCESSFUL REPAIR

VESICO-VAGINAL FISTULA : SUCCESSFUL REPAIR

<u>NAME</u>	: L.C.S. (Miss)	<u>L.M.P.</u>	: 23.4.1982
<u>UNIT NO.</u>	: 417451	<u>ADMISSION</u>	: 3.5.1982
<u>AGE</u>	: 23 Years	<u>REPAIR</u>	: 10.6.1982
<u>TRIBE</u>	: Kalenjin	<u>DISCHARGE</u>	: 2.7.1982
<u>PARITY</u>	: 1 + 0		

PRESENTING HISTORY

The patient was admitted to ward 4 on 3.5.1982 with a history of incontinence of urine since her last delivery in 1980.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at the age of 16 years. She menstruated regularly; the cycle was 26 days and the duration 3 days. Her last menstrual period was on 23.4.1982.

She was para 1+0. This delivery was in 1980 at Nakuru General Hospital. She was in labour for about 48 hours after which a difficult vacuum extraction was done and a female fresh still birth weighing 6 Kg. was delivered. Incontinence of urine developed 5 days after delivery. She was then referred to Kenyatta National Hospital where a diagnosis of a large circumferential vesico-vaginal fistula was made. She underwent repair on 6.3.1981 but 8 days later she was noticed to be leaking urine although much less than before. Post-operative examination under anaesthesia (E.U.A.) showed a small residual fistula in the left angle of the vaginal vault.

PAST MEDICAL AND SURGICAL HISTORY

This was not relevant.

SOCIAL AND FAMILY HISTORY

She was single and lived with her parents in Eldoret. Her formal education ended in form IV and she was undergoing a secretarial training when she became pregnant in 1979.

PHYSICAL EXAMINATION

She was an obese lady whose general condition was good. She was not clinically anaemic or jaundiced. Her vital signs were within normal limits and her respiratory, cardiovascular and abdominal systems were essentially normal.

VAGINAL EXAMINATION

There was slight excoriation of the vulval and perineal skin. Urine was observed leaking per vaginam. On speculum examination the vagina and cervix looked healthy and normal. The urine was leaking from a fistula high on the anterior vaginal wall. Bimanual examination revealed a normal sized uterus which was axial. Both adnexae was free and non-tender. The vagina was of good capacity and there was minimum fibrosis at the site of the fistula.

DIAGNOSIS AND MANAGEMENT

A diagnosis of residual vesico-vaginal fistula (V.V.F.) was made. She was admitted for work-up before pre-operative E.U.A. and subsequent repair.

RESULTS OF INVESTIGATIONS

Haemoglobin : 14.7 gm/dl.
Haematocrit : 42.8%
Urea : 15 mg%
Sodium : 144 mmol/l.
Potassium : 4.6 mmol/l.
M.S.S.U. : No growth obtained on culture.
Pap Smear : Class I.

PRE-OPERATIVE E.U.A.

This was done on 21.5.1982. She was prepared and premedicated as described in the introduction. Anaesthesia was induced with thiopentone sodium and maintained with oxygen and nitrous oxide.

The patient was placed in lithotomy position. The vulva and vagina were cleaned with 1% hibitane solution and the area draped. Examination showed a high V.V.F. at the vault. The V.V.F. was about 1 cm. in diameter and there was a lot of free tissue around with minimum fibrosis. The vagina was about 2½ cm. long and was of good capacity.

Methylene blue dye was instilled through the urethral catheter and it was visualized leaking through the fistula. No other fistulae were seen. A decision was taken to repair the fistula vaginally in lithotomy position.

REPAIR OF THE V.V.F.

The repair was done on 10.6.1982. Two units of compatible group "A" (Rh) D positive blood were obtained. In theatre anaesthesia was induced and maintained as described in the introduction.

The patient was placed in lithotomy position. The vulva and vagina were cleaned with 1% hibitane solution and the area draped. The labia were retracted and fixed wide open with stitches to the thighs. The bladder was catheterised with a Nelaton's catheter which was left in place.

Inspection confirmed the findings at E.U.A. Saucerization was done by paring and excising the avascular margins of the fistula obliquely, stopping short of the bladder mucosa. The area was kept dry intermittent suction and mopping with a swab soaked in 1:1000 adrenaline. Good dissection was achieved. The fistula was now repaired in three layers: The bladder wall using two layers of interrupted No.2 "0" extra-chromic catgut, the vaginal skin using interrupted No.2 "0" chromic catgut. Haemostasis was achieved.

Methylene blue dye was instilled into the bladder and inspection of the repaired areas showed no leakage. The Nelaton's catheter was now stitched in place with a silk stitch to the labia majora.

POST-OPERATIVE CARE

Recovery from anaesthesia was uneventful. Intravenous fluids comprising normal saline and 5% dextrose were given alternately - 500 mls 4-hourly for the first 24 hours. Thereafter she was asked to take plenty of oral fluids. Analgesia was provided with 100 mg. of intramuscular pethidine 6-hourly for the first 24 hours. The catheter was connected to a urine bag which was emptied 4-hourly to ensure adequate urine output and that the catheter was not blocked. Continuous bladder drainage was maintained for 14 days. She was given septin (2 tablets twice daily) for 14 days.

The patient was reviewed daily. She was continent of urine and the catheter was not blocked at any time. Her recovery was uneventful. Post-operative haemoglobin was 12.5 gm/dl. and catheter specimen of urine on three occasions did not grow any bacteria on culture.

POST-OPERATIVE E.U.A.

This was done on 1.7.1982, the 22nd day after repair. The E.U.A. revealed an intact repair site with no leakage of methylene blue instilled in the bladder. This was, therefore, considered a successful fistula repair.

She was discharged on 2.7.1982 with strong advice to avoid sexual intercourse for at least 3 months. She was given an appointment to be reviewed in the gynaecology clinic in 3 months.

FOLLOW-UP

She was seen in the clinic on 28.9.1982. She had no leakage and her general condition was good. She was discharged from the clinic and told that her next delivery must be by elective caesarean section.

COMMENT

Acquired vesico-vaginal and allied fistulae are still a common occurrence in gynaecological practice in developing countries (1,2,3). The true incidence is difficult to assess, but Gunaratne and Mati (3) reviewed 245 cases dealt with in five years in Kenyatta National Hospital. Unrelieved obstructed labour is the usual cause of V.V.F. in developing countries (1,2,3). This has been shown to occur commonly in young women of low parity who have received no or minimum antenatal and intrapartum care. Other causes of genital fistulae in developing countries include direct trauma during operative vaginal deliveries, rupture of the uterus, caesarean section, abdominal or vaginal hysterectomy, Manchester repair or colporrhaphy, radiation and infections - for example lymphogranuloma venereum (1). In contrast, fistulae in developed countries result from pelvic surgery or following irradiation (4).

During labour, the bladder is displaced upwards in the abdomen; the bladder base and the urethra being compressed by the presenting part and the posterior surface of the symphysis pubis. Unrelieved obstructed labour causes the soft tissues to be devitalised by ischaemia. These tissues then slough off to create the fistula (1). This patient had obstructed labour and delivery was achieved by a difficult vacuum extraction. The baby who was delivered weighed 6 Kg. (a big size by any standards!) and was a fresh still birth - the usual outcome (2,3). That this patient developed a large circumferential fistula could be related to the fact that she had a difficult vacuum extraction in the presence of already devitalized tissues.

VVF is preventable, but only if the maternity services are improved as a short term measure and childhood malnutrition eliminated as a long term measure (5). For cases which arrive in hospital already in obstructed labour, this should be relieved immediately by the most appropriate method for the particular case.

Continuous bladder drainage is then recommended for a period of upto ten days (1). This, coupled with antibiotics, has been shown to effect closure of some fistulae and to reduce the size of others (1). These prophylactic measures were not accorded to this patient.

If the patient is still incontinent of urine despite these measures she then needs surgical repair of the fistula. An interim period of at least three months is advocated to improve the nutritional status of the patient, treat any intercurrent illnesses, and to allow for complete revitalization of the tissues (1,2). Planning for the repair then follows. In our unit preliminary E.U.A., as was done in this patient, is performed to ascertain size, site and number of fistula(e), laxity of surrounding tissues, presence of fibrosis and fixity to nearby structures, and the best position for repair.

The patient presented had a small residual fistula at the vault of the vagina. The surrounding tissues were lax and there was minimum fibrosis. The lithotomy position was chosen as the best position for repair. The principles of repair are adequate exposure of the fistula, wide excision of the avascular margins of the fistula and accurate closure without tension. Because of previous surgery in the area in this case, saucerization was chosen as the best technique for repair.

Successful VVF repair does not depend only on the size and type of the VVF or on the experience of the surgeon, but more so on meticulous post-operative care (1,2,3,). As was demonstrated in this case, these patients need adequate hydration, continuous bladder drainage for 14 days, prophylactic antibiotics, and daily review by the doctors. After this, if there is no leakage of urine then the patient should abstain from sexual intercourse for at least 3 months and her next delivery must be by elective caesarean section.

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CASE NO. 8

* * * *

MULTIPLE UTERINE FIBROIDS:

TOTAL ABDOMINAL HYSTERECTOMY

MULTIPLE UTERINE FIBROIDS :
TOTAL ABDOMINAL HYSTERECTOMY

<u>NAME</u>	: G.W.W. (Miss.)	<u>PARITY</u>	: 0 + 0
<u>UNIT NO.:</u>	452707	<u>L.M.P.</u>	: 30.3.1982
<u>AGE</u>	: 35 Years	<u>ADMISSION</u>	: 13.9.1982
<u>TRIBE</u>	: Kikuyu	<u>OPERATION</u>	: 29.9.1982

PRESENTING HISTORY

Miss. G.W.W. was referred from the gynaecology clinic to the non-emergency gynaecological ward on 13.9.1982 for myomectomy or failing which, for total abdominal hysterectomy. She gave a two-year history of progressive abdominal swelling, menorrhagia and primary infertility.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at the age of 15 years. Her menstrual periods were regular but very heavy. The menstrual cycle was 30 days and the duration 7-8 days. She was nulliparous and had never used any contraceptives. She gave no history of sexually transmitted diseases.

She had been followed up in the gynaecology clinic since December 1981, because of the above-mentioned symptoms. While in the clinic the following investigations were done:-

RESULTS OF THE INVESTIGATIONS

Pap Smear : Class I.

Hysterosalpingogram : Uterine cavity is dilated near the internal os and a filling defect is also seen consistent with a fibroid. Both uterine tubes are not demonstrated.

PAST MEDICAL AND SURGICAL HISTORY

This was not relevant.

SOCIAL AND FAMILY HISTORY

She was single and worked as Prison's Warden at Langata Women's Prison.

PHYSICAL EXAMINATION

She was in a satisfactory general condition. She had no pallor, jaundice, cyanosis or peripheral oedema. Her vital signs were within normal limits. Her cardiovascular, respiratory and central nervous systems were all essentially normal.

ABDOMINAL EXAMINATION

The abdomen was enlarged with multiple, firm, non-tender masses arising from the pelvis which were equivalent to 20 weeks gestation. There was no ascities, and liver and spleen were not palpable.

PELVIC EXAMINATION

The vulva and vagina were normal. The cervix was nulliparous, firm and closed. The uterus was enlarged to 20 weeks size and was firm, irregular and mobile. The pouch of Douglas and both adnexae were free and not tender.

DIAGNOSIS AND MANAGEMENT

A diagnosis of multiple uterine fibroids was made. Myomectomy was decided upon as the treatment of choice because she was anxious to have children. If this could not, technically or otherwise, be done then total abdominal hysterectomy would be performed. The patient was informed of the decision and she gave her consent.

PRE-OPERATIVE RESULTS OF INVESTIGATIONS

Haemoglobin	:	11.5 gm/dl.
Haematocrit	:	35.8%
M.S.S.U.	:	No bacterial growth on culture.
Urea	:	15 mg/dl.
Sodium	:	145 Mmol/l.
Potassium	:	4.4 Mmol/l.

TOTAL ABDOMINAL HYSTERECTOMY

Because of shortage of blood the operation was delayed until on 29.9.1982. On this day two units of compatible blood were obtained for her. She was prepared and premedicated as described in the introduction.

In theatre, general anaesthesia was induced and maintained as described in the introduction. She was catheterised aseptically and the catheter left in-situ. Examination under anaesthesia confirmed the earlier findings. The vagina was now thoroughly swabbed with hibitane solution then painted with Bonney's blue solution.

Abdominal toilet was then done and after draping the abdomen was opened in layers through a midline sub-umbilical incision. The pelvis was found to have flimsy adhesions. The uterus had numerous fibroids. Both tubes were thickened and blocked terminally but the ovaries appeared healthy and normal.

Because of these pelvic findings it was considered futile to attempt myomectomy then tuboplasty. A decision was taken to proceed straight away with hysterectomy. Using two tagged abdominal packs the intestines were pushed well away from the operating area. The uterus was then delivered through the abdominal incision. The right round ligament was now doubly clamped and divided. The distal stamp was ligated with No.1 chromic catgut. This procedure was repeated on the left side. This opened the two leaves of the broad ligament. The anterior leaf was incised and the bladder bluntly separated from the uterus and pushed down.

The tube and the ovarian ligament of both sides were doubly clamped, divided and transfixed with No.2 chromic catgut. The posterior leaf of the broad ligament was then incised and dissected bluntly downwards with a swab on a finger. The uterine vessels of both sides were now doubly clamped using angled Kochers and straight clamps and then excised with a scalpel. The vessels were then doubly transfixed with No.2 chromic catgut. The cardinal ligaments on either sides were then clamped, divided and ligated.

Amputation across the vaginal vault, as close to the cervix as possible, was now done. The four quadrants of the vaginal vault were held with straight clamps. The vault was then closed with figure - of - eight sutures. Haemostasis was achieved. The pelvic peritoneum was closed over the vaginal vault with continuous No.0 chromic catgut, carefully burying the round and cardinal ligaments and suspending the vault.

Inspection of the abdominal viscera revealed no abnormalities. The abdomen was closed in layers as described in the introduction. Total blood loss was about 500 mls. She was transfused with 2 units of whole blood.

Before being sent for histopathology the uterus and some of the larger fibroids were opened. The uterine cavity had a few submucous fibroids but looked, otherwise, healthy and normal. The fibroids were firm, had the whorl-like arrangements of the muscle, and were pinkish-white and glistering in colour.

POST-OPERATIVE CARE

The patient's vital signs were observed half-hourly until she was fully awake. She made uneventful recovery from anaesthesia. After blood transfusion she was kept on intravenous fluids until bowel movements were established. She was given 100 mg. of intramuscular pethidine six-hourly for 48 hours.

She made satisfactory and smooth recovery. Post-operative haemoglobin concentration was 14.2 gm/dl. Alternate and all abdominal stitches were removed on the sixth and seventh post-operative days respectively. She was then discharged to be reviewed in the clinic after six weeks.

HISTOLOGY REPORT

The fibroids show typical features of leiomyomata. The endometrium is proliferative type and the endocervix exhibits non-specific inflammation.

GYNAECOLOGIC REVIEW

She attended the gynaecology clinic after six weeks. She was well and had no complaints. Her abdomen was soft and the scar had healed well. The vaginal vault was intact.

She was explained about the operation and advised to adopt children if she so desired. She was then discharged from the clinic.

COMMENT

Uterine fibroids are the commonest tumours of the uterus in particular and female pelvis in general (1,2,3). Wanjala (4) showed that two-thirds of all the hysterectomies done at Kenyatta National Hospital were due to fibroids. Fibroids are benign tumours of smooth muscles with a variable amount of fibrous tissue, and are therefore more accurately described as fibroleiomyoma (1,2).

The true incidence of uterine fibroids is by and large unknown because many are symptomless and remain undiagnosed. Novak, Jones and Jones Jr. (1) estimated that about 20% of women over the age of 35 years have fibroids, while at postmortem examination an incidence of 50% is frequently quoted (3).

Fibroids are more common in the later half of the reproductive life, in black women where they tend to occur earlier, and in nulliparous or relatively infertile women (1,2,3). Their growth is said to be oestrogen dependant, although this view is contested by others (2).

In our environment, as was exemplified by this patient, there is a strong association between fibroids, infertility and pelvic inflammatory disease (4). The exact mechanism of this association is largely unknown and remains in the relms of the riddle of "the hen and the egg".

The symptoms of uterine fibroids depend on their number, size, location and presence or absence of complications. The common symptoms include abdominal swelling, menorrhagia and/or other menstrual upsets, infertility, pressure symptoms, vaginal discharge, and pain (1,2). This patient had abdominal swelling, infertility and menorrhagia.

Uterine fibroids have a number of complications, none of which occurred in this patient. These are :

- (i) various types of degeneration; hyaline, cystic, red, fatty, calcaneous and malignant. Red degeneration occurs commonly in pregnancy, and malignant or sarcomatous degeneration is a rarity - occurring in about 0.3-0.5% of the cases (1,2,3).

- (ii) Infection and necrosis.
- (iii) Impaction; which may cause urinary retention.
- (iv) Intra-peritoneal haemorrhage following a rupture of a vein on the tumour surface.
- (v) Torsion of a pedunculated fibroid.
- (vi) During pregnancy fibroids may cause abortion or premature labour, undergo red degeneration, cause obstruction of labour or postpartum haemorrhage due to uterine atony.

Small symptomless fibroids need no treatment apart from close and expectant follow-up. Large fibroids and those with symptoms need treatment. In practical terms the choice lies between hysterectomy and myomectomy. Myomectomy is reserved for young patients who desire children and where other causes of infertility have been carefully ruled out. At laparotomy this patient was found to have thickened and blocked tubes and it was considered far-fetched desperation to attempt myomectomy and tuboplasty although she desired to have children. Both ovaries appeared healthy and were preserved.

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CASE NO. 9.

* * * * *

PRIMARY INFERTILITY : INVESTIGATIONS AND

TUBAL SURGERY.



PRIMARY INFERTILITY : INVESTIGATIONS AND
TUBAL SURGERY

<u>NAME</u> : H.N.N. (Mrs.)	<u>PARITY</u> : 0+0
<u>UNIT NO.</u> : 577855	<u>L.M.P.</u> : 11.12.1984
<u>AGE</u> : 30 years	<u>ADMISSION</u> : 6.1.1985
<u>TRIBE</u> : Kikuyu	<u>SURGERY</u> : 4.2.1985

PRESENTING HISTORY:

This patient was admitted to the non-acute gynaecological ward on 6.1.1985. She was referred from the gynaecology clinic for tubal surgery because of primary infertility caused by tubal factors.

PAST MEDICAL AND SURGICAL HISTORY:

She did not give any relevant past medical and surgical history.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

Her menarche occurred at 13 years. She had regular menstrual periods; the cycle was 28-30 days, the duration 5-6 days and the flow moderate.

She had been followed up in the gynaecology clinic since 13.10.1983 because of inability to conceive since she married in 1981. The couple lived together and their sex-life was reported to be normal.

Physical examination on that first day in the clinic revealed normal systemic findings. Several investigations were then ordered and the results are shown below:

Haemoglobin	: 13.2gm/dl.
Haematocrit	: 39.7%
Pap Smear	: Class I
Hysterosalpingogram	: Uterine cavity is normal. Both tubes outlined and show terminal loculations possibly due to adhesions.
Semenalysis	: Volume - 1.5 mls. Count - 79 million/mm ³ . Appearance - Majority are normal.

- Laparascopy : Fimbrial occlusion noted bilaterally with no hydrosalpinx. Dye flowed easily under pressure. Flimsy peritubular adhesions present. Uterus and both ovaries clinically normal with a corpus luteum noted on the left ovary. Tubal surgery recommended.
- Endometrial Histology : Moderate pale currettings show secretory phase endometrium.
- TB Culture : Mycobacterium tuberculosis not isolated.

After obtaining all these results the patient was referred to the gynaecology ward for tubal surgery.

PHYSICAL EXAMINATION

Her general condition was good. She was afebrile and was not clinically anaemic. The vital signs were within normal limits.

RESPIRATORY AND CARDIOVASCULAR SYSTEMS:

Both were essentially normal.

ABDOMINAL EXAMINATION:

The abdomen was soft and non-tender. There were no abnormal masses. The liver and spleen were not palpable.

VAGINAL EXAMINATION:

The vulva and vagina were normal. The cervix was nulliparous and closed. The uterus was normal size, anteverted with moderate mobility. Both adnexae were free and not tender.

DIAGNOSIS AND MANAGEMENT

A diagnosis of primary infertility due to tubal factors was made. Blood samples were taken for haemogram and urea and electrolytes, and a mid-stream specimen of urine (M.S.S.U) was taken for culture and sensitivity.

RESULTS OF THE INVESTIGATIONS:

Haemoglobin : 15.7 gm/dl
 Sodium : 135 mmol/l
 Potassium : 4.3 mmol/l
 B.U.N. : 3.6 mmol/l
 M.S.S.U. : No growth on culture.

Because of various constraints the operation was not done until 4.2.1985. With two units of compatible blood ready for her, she was prepared and premedicated as outlined in the introduction.

LAPARATOMY : SALPINGOSTOMY AND SALPINGOLYSIS:

In theatre general anaesthesia was induced and maintained as outlined in the introduction. She was then catheterised aseptically and the catheter left in place. Examination under anaesthesia confirmed the findings stated above.

Abdominal toilet was now done and the area draped with sterile towels. Through a Pfannenstiel incision the abdomen was opened in layers. The uterus was normal size. Both tubes were found to be blocked terminally and the left tube had a terminal hydrosalpinx. There were flimsy peritubular adhesions mainly anteriorly. Both ovaries were, however, normal.

The peritubular adhesions were gently lysed with scissors until both tubes were freed from the surrounding structures. The fimbrial end of the right tube was now opened, the edges everted and the mucosa stitched to the peritoneum with interrupted No. 6"0" nylon sutures. This procedure, termed cuff salpingostomy, was repeated on the right tube. Any bleeding points were carefully understitched with figures-of-eight sutures until haemostasis was achieved.

Passing a probe revealed that both tubes were now patent. This was confirmed by hydrotubation.

Peritoneal wash-out was now done using warm normal saline. The abdomen was then closed in layers as described in the introduction. Total blood loss was estimated to be about 400mls.

POST-OPERATIVE CARE:

The patient's vital signs were observed half-hourly until she was fully awake from anaesthesia, then they were charted 4-hourly. She was maintained on intravenous fluids for 24 hours, and was started on intramuscular ampiclox which was changed to oral ampiclox once she started taking oral fluids. She was given pethidine for analgesia for the first 48 post-operative hours.

Her post-operative recovery was uneventful. She remained afebrile throughout. Her post-operative haemoglobin concentration was 13.4gm/dl with a haematocrit of 38.9%. The sub-cuticular skin suture was removed on the 7th post-operative day. The wound was clean and had healed by primary intention. She was then discharged to be followed up in the gynaecology clinic after 6 weeks.

FOLLOW UP:

She was reviewed in the clinic on 18.3.1985. She was well and had no complaints. She had menstruated normally on 8.3.1985. The abdominal wound was well healed. She was advised about having sex during the fertile days of her cycle and will be reviewed again after 6 months.

COMMENT:

It is ironical in a country with one of the highest birth rates in the world like Kenya that infertility would pose such a major gynaecological problem. But this is the case; for example it has been estimated that about two-thirds of the gynaecology clinic time in Kenyatta National Hospital (KNH) is spent on seeing cases of infertility (1).

Causes of infertility are many, but these can be broadly classified into: Male factors, cervical factors, tubal factors, defects of ovulation, and defects in implantation (2). In developing countries, the commonest cause of infertility is tubal blockage caused by pelvic inflammatory disease (1,3,4). The three leading causes of Pelvic inflammatory disease (PID) are gonorrhoea, post-abortal sepsis and puerperal sepsis (4). Mati and associates in 1973 (1) showed that 73.1% of women with primary infertility had tubal occlusion. In 1981 the situation was no better (3).

As was stressed by Mathews et al (3) routine infertility investigations should involve both partners. The minimal investigation in the male, after history and physical examination, should be examination of a semen specimen. In this case semen analysis was considered normal.

In the female, investigations should include tests to assess patency of the tubes and tests for ovulation. In our unit hysterosalpingography and/or laparoscopy are used to demonstrate the patency of the tubes, and premenstrual endometrial curettage is used to document ovulation. In this patient, ovulation was presumed from the regularity of her periods and confirmed by seeing a corpus luteum at laparoscopy and finding secretory endometrium on histology of the endometrium. Hysterosalpingogram (HSG) demonstrated tubal pathology which was confirmed at laparoscopy - the much more accurate investigation (5).

Mati and associates (1) suggested the following criteria for selection of cases that might benefit from tubal surgery:

1. Minimal involvement of tubes with no masses.
2. Few peritubular adhesions showing kinking of tubes.

This patient satisfied the above criteria and tubal surgery was recommended for her. This was carried out with restoration of the patency of the tubes. Success at tubal surgery is reported to be 25-30% (2). With badly damaged tubes, however, the success is very poor (1, 3, 4). The only hope in these cases is in-vitro fertilization.

The management of an infertile couple presents a challenging problem always, a disappointing one often and a rewarding one sometimes. Prevention of PID offers the only long term solution in this country (3). This should be directed towards prevention and adequate treatment of sexually transmitted diseases, improvements of obstetric care and prevention of abortions especially septic abortions.

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CASE NO. 10

* * * *

GRANDMULTIPARITY : LAPAROSCOPIC FALOPE

RING TUBAL LIGATION

GRANDMULTIPARITY : LAPAROSCOPIC FALOPERING TUBAL LIGATION

<u>NAME</u> : R.G.K. (MRS.)	<u>PARITY</u> : 6+0
<u>UNIT NO.:</u> 479338	<u>L.M.P.</u> : 29.6.1982
<u>AGE</u> : 36 Years	<u>ADMISSION</u> : 22.7.1982
<u>TRIBE</u> : Kikuyu	<u>DISCHARGE</u> : 22.7.1982

PRESENTING HISTORY:

The patient was admitted to the Laparoscopic ward on 22.7.1982 for tubal ligation because the couple did not desire to have more children.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

Menarche occurred at 16 years. She had regular menstrual periods coming every 25 days and lasting for 4 days.

She was Para 6+0. All her deliveries of 5 girls and 1 boy were full-term spontaneous vaginal deliveries and the children were alive and well. Her last delivery was on 22.2.1982. She used an intrauterine contraceptive device shortly after this delivery until the time she had tubal ligation.

She was reviewed in the T.L. (Tubal Ligation) clinic on 25.6.1982 where the couple requested for permanent sterilization. Adequate explanation was given about the operation and the fact that it was irreversible/ and the couple signed an informed consent. Blood for haemogram estimation was taken and a cervical smear for cervical cytology obtained.

RESULTS OF THE INVESTIGATIONS:

Haemoglobin	: 12.8gm/dl
Haematocrit	: 36.8%
Pap smear	: Class I

SOCIAL AND FAMILY HISTORY:

She was a married housewife. The couple with their children lived in Rironi. There was no family history of chronic medical diseases.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She was afebrile and was not clinically anaemic. Her vital signs, respiratory and cardiovascular systems were essentially normal. Her abdomen was soft and not tender. Liver and spleen were not palpable.

Vaginal examination revealed normal vulva and vagina. The Cervix was firm, parous and the internal os was closed. The uterus was normal size, antverted and freely mobile. Both adnexae were clear and not tender.

DIAGNOSIS AND MANAGEMENT

A diagnosis of Grandmultiparity was made. She was admitted and prepared for abdominal operation under general anaesthesia as described in the introduction.

In theatre general anaesthesia was induced and maintained as described in the introduction. The patient was now placed in Trendelenburg tilt and her legs supported on padded supports. Simultaneous vulvo-vaginal and abdominal cleaning was done. Draping was then done. The bladder was emptied using a metal catheter. Pelvic examination confirmed the earlier findings. The intra-uterine contraceptive device was removed and a uterine elevator inserted through the cervical os.

A stab incision was made just below the umbilicus. This was deepened to below the rectus sheath. A verres needle, already tested for patency, was now inserted through the stab incision by lifting up the abdominal skin between the thumb and the forefinger. The direction of insertion was oblique *to the abdominal wall* The needle was connected to a carbon dioxide supply source and the gas introduced until a pneumoperitoneum of 2½ litres was achieved. After this the verres needle was removed. The incision was enlarged slightly

and a trocar and cannula introduced into the peritoneal cavity at an angle of 45° . To facilitate insertion the abdominal wall was held on either side by the surgeon and his assistant. The trocar was now removed and a Laproscator Laparoscope already loaded with one falope ring introduced through the cannula. A cold light source was connected to the laparoscope and a good view of the pelvis was obtained. The uterus, fallopian tubes and ovaries all appeared clinically normal. There were no pelvic adhesions and both tubes could be visualized upto the fimbrial ends.

By manipulating the uterus using the uterine elevator the right tube was brought into good view. This tube was grasped with the tongs of the laparoscope about 3cm. from the cornu. A knuckle of the tube was pulled into the laparoscope tube and the falope ring slipped over it. On releasing the tongs the loop of the tube blanched white as the blood supply was cut off. The laparoscope was now removed and a second falope ring installed. The same was repeated on the left tube.

After occluding both tubes, the abdominal and pelvic organs were inspected and found to be free of any injuries. The laparoscope was now removed. The pnemoperitoneum was released. The trocar was reinserted and then withdrawn with the cannula. The abdominal incision was then closed with two Michelle clips.

POST-OPERATIVE CARE:

General anaesthesia was reversed and the patient wheeled down to the recovery ward for routine post-operative observations. Her vital signs remained stable and 5 hours later she was discharged home accompanied by her sister. She was asked to attend the T.L. clinic after 7 days for removal of the clips.

She had no complaints and the clips were removed on the 7th post-operative day. She was reviewed again after 3 months, on 9.9.1982. She had no complaints. Her periods were regular as before with no dysmonorrhoea. Her L.M.P. was on 10.8.1982. Pelvic examination revealed normal pelvic organs.

She was very happy about the sterilization and was hence discharged from the clinic.

COMMENT:

Voluntary sterilization is a surgical operation for permanent contraception. In women, the sterilization operation involving ligating and/or cutting both fallopian tubes (1). Tubal ligation, which has emerged as one of the most popular methods of contraception, can be performed immediately after delivery, after an abortion or at any point between pregnancies (interval tubal ligation). At present there are a vast array of techniques for tubal ligation. The approach may be abdominally (through a laparotomy or more commonly a minilaparotomy or laparoscopy), vaginally (colpotomy or culdoscopy) or transcervically utilizing hysteroscopy (2). Occlusion of the tubes may be accomplished by ligation and division - the Pomeroy and Parkland procedures; ligation, division and burying the medical stump - the Irving procedure; Kroener fimbriectomy technique; electrocauterization of a segment of the tube; and mechanical occlusion using clips, bands or rings (1,2).

From all these methods, minilaparotomy and laparoscopy have had the widest appeal worldwide. Aubert et al (3) reviewed a large number of sterilizations done worldwide and showed that 38% were by interval minilaparotomy, 35% were by laparoscopy, and 18% were by postpartum minilaparotomy. The major advantages of these two approaches are (1,4):

1. The procedures can be done on an outpatient basis and hospitalization is seldom necessary. This is very important in areas like ours where hospital beds are in high demand.
2. Both procedures can be done under local anaesthesia thus minimizing the risks inherent in general anaesthesia.
3. The procedures are short and complications are few. In the past electrocautery was used but this has since been abandoned in most centres because of the dangers of burns to the viscus.

Tubal ligation in general should be considered permanent and irreversible. It is, therefore, the best form of contraception for couples who do not desire more children or for couples who, for medical reasons, should not have more

children. In the case presented, the couple considered their family complete and did not want any more children. Tubal ligation has several advantages that add to its popularity (1):

1. It is more effective than any other method of contraception. Failure rates are quoted as less than 1 per 100 woman years.
2. The operation is easy to perform and carries only a one-time-risk of complication, as opposed to the ongoing risks of other methods of contraception.
3. It is relatively safe with low mortality rate - infact much lower than that of pregnancy.

The important complications which are associated with tubal ligation are: anaesthetic complications, burns of viscus, pulmonary embolism, haemorrhage, and predisposition to ectopic gestations. None of these complications occurred in this patient.

Sterilization must be considered permanent and irrevesible. In our unit, the couple desiring a permanent method of contraception, which invariably means tubal ligation, are counselled thorough by the medical personnel, specifically regarding the irreversibility of the procedure, then both husband and wife sign a consent. If unforeseen circumstances develop then reversal of the tubal ligation can be attempted. Even under the best of hands using microsurgical techniques success rate at reversal is no more than 50-70%; This is not to mention that these reversal operations require speciazed training and expensive equipment, and developing countries can ill-afford them (1). Therefore, there is no substitute for thorough, clear and complete counselling of the couple before the procedure is contemplated.

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CASE NO. 11

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GENITAL PROLAPSE : MANCHESTER REPAIR OPERATION

GENITAL PROLAPSE : MANCHESTER REPAIR OPERATION

<u>NAME</u>	: A.Y.M. (Mrs.)	<u>L.M.P.</u>	: 20.1.1983
<u>UNIT NO.</u>	: 481375	<u>ADMISSION</u>	: 25.1.1983
<u>AGE</u>	: 32 Years	<u>OPERATION</u>	: 10.2.1983
<u>TRIBE</u>	: Mkamba	<u>DISCHARGE</u>	: 18.2.1983
<u>PARITY</u>	: 3 + 0		

PRESENTING HISTORY

The patient was admitted to the non-emergency gynaecological ward on 25.1.1983 with a three-year history of a mass coming down and out of the vagina. She also complained of dragging lower abdominal pains and low back pains.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at 16 years. Her menstrual periods were regular. The cycle was 30 days, the duration 3-4 days and the flow was moderate.

She was para 3 + 0. All these deliveries, in 1971, 1975 and 1979, were full-term vaginal deliveries. The children, two girls and one boy, were alive and well. She had never used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

She had a laparotomy in December, 1981 because of intestinal obstruction. She did not give any history of chronic chest or other medical diseases.

SOCIAL AND FAMILY HISTORY

She was a married housewife with no formal education. Her husband was a peasant farmer and the couple lived in Machakos.

PHYSICAL EXAMINATION

She was a middle-aged slim lady who had no pallor, jaundice, cyanosis or peripheral oedema. Her blood pressure was 110/60 mmHg., pulse rate was 80 per minute regular, and temperature was 36.2°C.

Her cardiovascular, respiratory and central nervous systems were essentially normal. The abdomen had a left paramedial scar, it was soft and not tender. The liver and spleen were not palpable.

VAGINAL EXAMINATION

The vulva was normal. There was uterine prolapse with the cervix and *part of the corpus uteri hanging out of the introitus. The cervix appeared healthy with no evidence of infection.* On straining a cystocoele and a rectocoele were demonstrable.

DIAGNOSIS AND MANAGEMENT

A diagnosis of **third** degree uterine prolapse with a cystocoele and a rectocoele was made. Several investigations were done pre-operatively.

RESULTS OF THE INVESTIGATIONS

Haemoglobin	:	14.1 gm/dl.
Haematocrit	:	41.1%
Blood Urea Nitrogen	:	4.2 Mmol/l
Sodium	:	136 Mmol/l
Potassium	:	4.0 Mmol/l
M.S.S.U.	:	No bacterial growth.
Pap Smear	:	Class II with non-specific inflammatory changes.

Manchester repair operation was decided upon as the treatment of choice. The patient was informed about the decision and she gave her consent. Two units of blood were obtained and she was prepared for the operation as described in the introduction.

MANCHESTER REPAIR OPERATION

The patient was premedicated with 0.6 mg. of atropine sulphate and 50 mg of pethidine intramuscularly half an hour before the operation. In theatre general anaesthesia was induced and maintained as described in the introduction.

She was placed in lithotomy position and vulvo-vaginal and perineal toilet done. The area was then draped with sterile towels and she was catheterised and the catheter left in-situ.

Examination under anaesthesia confirmed the earlier findings. Standard dilatation was done upto Hegar dilator No.'8'. Sharp curettage obtained normal - looking pale curettings which were sent for histopathology.

Four small Kocher's forceps were placed to the Fothergill's points: one immediately below the urethral meatus, one posterolateral to the cervix on both sides, and the fourth in the midline of the posterior fornix. Using a scalpel the four points were joined by an incision through the thickness of the vaginal skin. Starting from the urethral meatus the vaginal skin was reflected off the bladder from the urethra towards the cervix. This reflection was extended to the cervicovesical ligament which was divided. The bladder was now dislocated upwards until the uterovesical pouch was identified. The incised vaginal skin was mobilized upwards to expose the cardinal ligaments. These were clamped in angled Kocher's forceps and transected then transfixed with No.1 chromic catgut. Amputation of the cervix was now done at the level of the internal os. The Fothergill's suture was now inserted starting from the left lateral Fothergill's point through the vaginal skin, through the divided cardinal ligament and through the mid-point of the anterior lip of the amputated cervix, from without inwards into the canal. The needle was then passed in a reverse direction from within outwards and the process exactly repeated on the right side. This suture of No.2 chromic catgut anchored the lateral sides of the vagina and the stumps of the cardinal ligaments in front of the cervix. The amputated cervix was now covered with vaginal skin using mattress sutures of No.0 chromic catgut.

The anterior incised vaginal skin was excised. The pubocervicovesical fascia was tightened by a series of horizontally placed interrupted sutures of No.0 chromic catgut. The vaginal skin was then united with interrupted sutures of No.0 chromic catgut. This is anterior colporrhaphy.

The posterior vaginal wall was ~~now~~ bluntly separated from the rectum then a V-shaped redundant tissue excised. The vaginal skin was stitched using interrupted No.0 chromic catgut. The levator ani muscles were approximated by four stitches of interrupted No.1 chromic catgut firmly tied. The superficial perineal muscles were then sutured together to cover the united levators. Finally, the skin was restored with interrupted No.0 chromic catgut sutures. This is posterior colpoperineorrhaphy.

After the operation the vagina could accommodate two fingers. The catheter was left in place. Total blood loss was minimal.

POST-OPERATIVE CARE

Recovery from anesthesia was uneventful. She was put on intravenous fluids of normal saline alternating with 5% dextrose for 24 hours. She was started on septrin prophylactically and was instructed on perineal toilet using warm saline twice daily and after opening bowels. The urethral catheter was removed after 24 hours.

She had a smooth post-operative period. She remained afebrile throughout and had no problems in passing urine. Post-operative haemoglobin concentration was 13.4 gm/dl. and urine culture on two occasions grew no bacteria. She was discharged in good condition on 18.2.1983.

HISTOLOGY OF ENDOMETRIAL CURETTING AND CERVICAL SPECIMEN

These are moderate pale curettings. Histology shows normal secretory endometrium.

The cervical specimen shown features of mild chronic cervicitis. No evidence of malignancy.

FOLLOW-UP

The patient was seen in the gynaecology clinic after two months. She was well and had no complaints. She had menstruated normally once since discharge from hospital. The vulva, vagina and cervix appeared healthy and normal. The uterus was anteverted and normal sized, and the adnexae were clear. She was, therefore discharged from the clinic.

COMMENT

Genital prolapse is rare in Africa when compared to Western countries (1,2). In Kenya, Cox and Webster (1) showed that genital prolapse was common among the Pokot and rare in Central Kenya. Mwalali (3) found an incidence of 0.1% for Kenyatta National Hospital (K.N.H.).

Genital prolapse is a consequence of failure of ligamentous supports of the uterus. The causes of this include congenital tissue abnormality, child-bearing, menopause with consequent atrophy of the ligamentous supports, and chronic elevation of intra-abdominal pressure (4). It was the considered opinion of Cox and Webster (1) that the high incidence of prolapse among the Pokot is related to their large pelves which allow the head to descend before full cervical dilatation. Premature bearing down and fundal pressure by local midwives would then accentuate the strain on the uterine supports. To support this view they showed that in areas with contracted pelves, where assisted deliveries are common, the prevalence of genital prolapse was low.

In western countries, genital prolapse is a disease of elderly highly parous patients (4). This is not so in Africa (1,2). The patient under discussion bears this out. She was 32 years old and was Para 3 + 0. All these deliveries were at home. The cause of genital prolapse in this case was not clear, possibly this was related to circumstances surrounding her previous deliveries.

The leading symptom in genital prolapse, as was in this patient, is something coming down (2,3,4). Other symptoms include low back pains, vaginal discharge (if there is ulceration of the cervix), and various urinary and rectal symptoms (4). On examination, Mwalali (3) found that 40.6% of the patients in KNH/ had third degree prolapse, while 26.6% had second degree prolapse. This patient ^{had} a third degree prolapse with a cystocoele and a rectocoele.

Once the diagnosis of genital prolapse is made and there are symptoms to warrant intervention then surgery is the mode of treatment. Currently the choice lies between vaginal hysterectomy and Manchester repair operation. Controversy still rages on as to which is superior to the other (4). Scott (4) was of the opinion that, everything being equal, whichever method is chosen is irrelevant because the important thing is the efficiency with which the vaginal vault is supported by shortening the cardinal and the uterosacral ligaments. Once this important point is realised then the individual surgeon's preference will tilt the balance towards one or the other of the operations.

Nevertheless, there are other considerations which should militate the surgeon to do either of the operations. These include whether there are other symptoms (e.g. irregular uterine bleeding due to dysfunctional uterine bleeding or presence of small fibroids), age and parity of the patient and whether the patient wants more children (4). Manchester repair operation is preferred to vaginal hysterectomy in our patients because menstruation is still so strongly associated with femininity (2). Absence of other symptoms, low age and parity, and desirability of more children are other considerations in favour of Manchester repair operation.

All the factors were considered carefully before finally deciding on Manchester repair in this case.

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CASE NO. 12.

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CHORIOCARCINOMA : CHEMOTHERAPEUTIC MANAGEMENT.

CHORIOCARCINOMA : CHEMOTHERAPEUTIC MANAGEMENT

<u>NAME</u> :	N.W.N. (Mrs.)	<u>PARITY</u> :	9+1
<u>UNIT NO.</u> :	654382	<u>ADMISSION</u> :	5.11.1984
<u>AGE</u> :	40 years	<u>DISCHARGE</u> :	12.3.1985
<u>TRIBE</u> :	Kikuyu		

PRESENTING HISTORY:

The patient was admitted to the acute gynaecological ward on 5.11.1984 as a referral from Thika District Hospital. She gave an 8-months history of intermittent vaginal bleeding, hypogastric pains, nausea and vomiting; and a 3-month history of chest pains, productive cough and haemoptysis. The initial symptoms followed evacuation of the uterus for incomplete abortion in February, 1984.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

She could not remember the date of her menarche. Her periods were regular coming every 28 days and lasting for 3 days. She was para 9+1. All these deliveries were full-term vaginal deliveries at home. The last delivery was in 1980. In February, 1984 she had spontaneous abortion at 10 weeks gestation. Evacuation of the uterus was subsequently done at Thika District Hospital a day later. She, however, continued to bleed vaginally and dilatation and curettage was performed two months later at the same hospital. This had no amelioration on her condition. At one time the vaginal bleeding was heavy enough necessitating transfusion of two units of blood.

Three months prior to admission to Kenyatta National Hospital she developed chest pains, productive cough and haemoptysis. She was treated for chest infection without any appreciable improvement. It was only after a pregnancy test was done and found to be positive that a diagnosis of choriocarcinoma following the abortion was entertained. She was then referred to Kenyatta National Hospital.

PAST MEDICAL AND SURGICAL HISTORY:

There was no relevant past medical and surgical history.

SOCIAL AND FAMILY HISTORY:

She was married and lived with her family in Muranga District. There was no family history of chronic medical diseases.

PHYSICAL EXAMINATION

This was an elderly lady who was in a poor general condition. She was wasted and had mild pallor. The vital signs were within normal limits. The abdominal and cardiovascular systems were essentially normal.

RESPIRATORY SYSTEM:

The trachea was central. The chest was symmetrical and moved with respiration. Both lung bases were dull to percussion and had reduced air entry on auscultation. There were, however, no crepitations or rhonchi.

VAGINAL EXAMINATION:

The vulva and vagina were clinically normal. The cervix was parous, firm and closed. The uterus was bulky. Both adnexae and the Pouch of Douglas were free and not tender. There was no active bleeding per vaginam.

DIAGNOSIS AND MANAGEMENT

An impression of choriocarcinoma with possible pulmonary metastases was made. Several investigations were done.

RESULTS OF THE INVESTIGATIONS:

- | | | |
|-------------------|---|--|
| 1. Haemoglobin | : | 10.1gm/dl |
| 2. Haematocrit | : | 33% |
| 3. WBC count | : | $7.1 \times 10^{12}/l$ |
| 4. Platelet count | : | Adequate |
| 5. Pregnancy Test | : | Positive. HCG levels > 256 I.U./Ml. but < 512 I.U./Ml. |
| 6. Chest X-ray | : | Bilateral rounded opacities with left lower lobe effusion |

7. Sodium	: 138 mmol/L
8. Potassium	: 4.4 mmol/L
9. BUN	: 3.6 mmol/L
10. Alkaline Phosphatase	: 25.0 K.A.
11. Albumin	: 22 gm/L
12. SGPT	: 24 K.S.

After getting all these results a definitive diagnosis of chorio-carcinoma with secondaries to the chest was made. The haematological parameters, liver and renal function tests were considered within acceptable levels for commencement of chemotherapy. Because of her age, initial HCG levels, and the time which had elapsed since the abortion, the patient was considered to be in a high-risk group.

She was transferred^d to the non-acute gynaecological ward and her first course of chemotherapy was started on 13.1.1984. This was composed of:

1. Methotrexate : 50mg in 500mls of 5% dextrose which ran over 24 hours.
2. Cyclophosphamide : 150mg intravenously given once daily for 5 day
3. 6-Mercaptopurine : 200mg - tablets given three times daily for 5 days.

After her first course of Triple therapy blood specimens were taken for full haemogram, renal and liver function tests. Urine was submitted for pregnancy test in dilution and a chest x-ray was done.

All results were normal except the following:

1. Haemoglobin : 7.7 gm/dl
2. WBC count : $5.8 \times 10^{12}/L$
3. Chest x-ray : Bilateral rounded opacities consistent with secondaries.
4. Pregnancy test : Positive. HCG levels > 64 I.U./ml. but < 128 I.U./ml

She was transfused with two units of blood and a second course of triple therapy was started on 4.12.1984. After this course the haematological parameters were within normal limits. HCG levels were reported to be >4 I.U./ml. but <8 I.U./ml. and the pulmonary metastases were reported to be resolving.

The third course of chemotherapy was started on 18.12.1984. After this course all the relevant investigations were done. The pregnancy test was negative and the chest x-ray was reported as normal. All the other investigations were normal. Her general condition had also improved drastically and she was putting on weight adequately.

As is the policy in our unit, the patient was given three more courses of chemotherapy after the first negative pregnancy test. These were given from 9.1.1985, 11.2.1985, and 27.2.1985. After each course she was investigated adequately before the next course. The pregnancy test persistently remained negative. After the last course of chemotherapy she was discharged.

Because of long distances, this patient will be followed up in Muranga District Hospital, which is her nearest hospital. This will involve fortnightly pregnancy tests for 3 months, monthly upto two years since completion of treatment. To avoid another pregnancy, she was started on, and was to continue using contraceptive pills during this period of follow-up.

COMMENT:

A case of choriocarcinoma following a spontaneous abortion at 10 weeks gestation in a 40-year old highly parous patient is presented. This extremely malignant form of trophoblastic neoplasia is a carcinoma of chorionic epithelium although in its growth and metastasis it often behaves as a sarcoma (1). Morphologically an important diagnostic feature of choriocarcinoma, in contrast with hydatidiform mole and invasive mole, is absence of a villous pattern. What is seen is a core of pleomorphic cytotrophoblast surrounded by a rim of syncytium with extensive areas of haemorrhage (2).

Choriocarcinoma can follow normal pregnancy, non-molar abortion, ectopic pregnancy, or hydatidiform mole (2). In the patient presented, this followed a non-molar abortion. Although in other areas the incidence of choriocarcinoma is said to be 1000 times more common after hydatidiform mole than after normal pregnancy (2), the study by Makokha and Mati (3) found that in Kenyatta National Hospital (KNH) the commonest antecedent pregnancy was non-molar abortion

Choriocarcinoma in particular and all gestational trophoblastic diseases in general are reported to be commoner in developing countries especially South East Asia and Latin America than in North America and European countries (2,4). Of the other predisposing factors, Makokha and Mati (3) found high age and parity to be associated with the development of choriocarcinoma in KNH. This was considered to be related to the overall weakened immunological response due to aging and repeated pregnancies. The concept of increased fetal malformation with increasing age was another factor that could play a part in the causation of malignant development.

The patient presented was 40 years old and was para 9+1. These two factors could have predisposed her to the development of choriocarcinoma.

Clinically, a patient with choriocarcinoma commonly presents with abnormal bleeding per vaginam(1,3). This could be in association with other symptoms. In view of the variety of presentation, a high index of suspicion is needed by

the medical practitioner. Thus, Dyspnoea, persistent cough (with or without haemoptysis), signs of intra-cranial haemorrhage, raised intra-cranial pressure, hemiparesis or paraplegia, or unusual gastrointestinal symptoms, especially in association with a history of irregular vaginal bleeding or previous molar pregnancy, should suggest the possible diagnosis of choriocarcinoma (5).

This patient presented with features which were very suggestive of choriocarcinoma. She gave a protracted history of intermittent vaginal bleeding following an abortion. This was later followed by chest pains, ~~productive~~ cough and haemoptysis as the disease spread to the lungs. With a high index of suspicion, the proper diagnosis could have been made much earlier; thus making prospects of cure much more favourable (4,6). This patient had, in the meantime, uterine curettage. This procedure was considered futile and gross mismanagement by Makokha and Mati (3).

Makokha and Mati (3) used the following criteria as indicative of choriocarcinoma:

1. A positive pregnancy test outside pregnancy.
2. A positive pregnancy test with irregular vaginal bleeding not associated with any type of abortion.
3. Metastases in the chest and/or vagina with or without a positive pregnancy test.
4. Rising titres of HCG after abortion or hydatidiform mole.
5. Histological reports of biopsies of the endometrium and/or vaginal metastases or other areas.
6. Postmortem reports.

Bagshawe and Begent (4) state that evidence for the presence of trophoblastic tumour more than 6 months following a hydatidiform mole or more than 2 months after any other pregnancy constitutes prima facie evidence of choriocarcinoma.

The diagnosis of choriocarcinoma in this patient did not pose any problems. The history of irregular vaginal bleeding and chest symptoms was

highly suggestive, pregnancy test done 8 months after spontaneous abortion was positive with very high HCG levels, and the chest x-ray showed unequivocal signs of pulmonary metastases.

There are certain factors which influence response to therapy in choriocarcinoma. Most workers, therefore, divide patients either two-way (high-risk, low-risk) or three-way (high-risk, medium-risk or low-risk) according to the factors. Those factors which have consistently been shown to adversely influence response to treatment are (2,4,6):

1. Time interval between antecedent pregnancy and treatment of more than 4 months.
2. Type of antecedent pregnancy: Full term pregnancy having worse prognosis than either a mole or an abortion.
3. Initial HCG levels of greater than 100,000 I.U./l.
4. Metastases to sites other than the lungs and/or the vagina.
5. Previous unsuccessful chemotherapy.
6. Age above 39 years.

Other factors like the ABO blood groups of the female and male, largest tumour size, and number of metastases *have also been shown to have some* prognostic significance. The WHO scientific groups on Gestational trophoblastic diseases (2) analysed these factors and came out with a scoring system upon which prognosis can be based.

In our unit patients with choriocarcinoma, ^{those} who have one (any) adverse factor are put in the high-risk category and are treated with triple therapy. Those with no adverse factor are considered low-risk and are treated with a single drug (either methotrexate or actinomycin-D). The patient presented had 3 adverse factors - i.e. she was 40 years old, she presented 8 months after the antecedent pregnancy, and the initial HCG levels were above 100,000 i.u/l. (read as >256 i.u./ml and <512 i.u./ml). She therefore was treated as a high-risk case, with three chemotherapeutic agents (Methotrexate, 6-mercaptopurine and cylophosphamide).

Her response was consistent and encouraging, and after three courses the pregnancy test was negative and the chest metastases had completely resolved. As is the policy in this unit, she was given three more courses after negative pregnancy test.

Monitoring of patients on therapy involves checking the haematological indices, liver and renal function tests, tests for HCG levels and chest x-rays. Bagshawe and Begent (4) advise that these should be done twice weekly. However, in places, like ours, with limited resources, equipment and manpower, and as was done in this case, monitoring these parameters after every course of chemotherapy is adequate. The most important factor in monitoring response to treatment is HCG levels. In our unit we rely more often on measurements of the pregnancy test in dilution. This is a crude and an unreliable method as has been shown by Sekadde-Kigundu et al (7). Use of Radioimmunoassay or Radioreceptor assay is far superior and more sensitive, especially the B-HCG. Radioimmunoassay is possible in our unit (7), but during the management of this patient the relevant kits were not available.

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CASE NO. 13

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OVARIAN SEROUS CYSTADENOCARCINOMA - STAGE III:

TOTAL ABDOMINAL HYSTERECTOMY, BILATERAL

SALPINGOOPHORECTOMY AND MONTHLY CHEMOTHERAPY

OVARIAN SEROUS CYSTADENOCARCINOMA - STAGE III:TOTAL ABDOMINAL HYSTERECTOMY, BILATERAL
SALPINGOOPHRECTOMY AND MONTHLY CHEMOTHERAPY

<u>NAME</u>	: J.A.J. (Mrs)	<u>PARITY</u>	: 2 + 0
<u>UNIT NO.:</u>	401629	<u>L.M.P.</u>	: 21.10.1981
<u>AGE</u>	: 22 Years	<u>ADMISSION</u>	: 9.11.1981
<u>TRIBE</u>	: Luhya	<u>OPERATION</u>	: 20.11.1981

PRESENTING HISTORY

The patient was admitted to the non-emergency gynaecological ward as a referral from a medical ward on 9.11.1981, She presented with a three month history of progressive abdominal distension, backache and exertional dyspnoea. She had been in the medical ward for about five weeks where she was being managed as a case of tuberculous peritonitis, but progressive symptoms and non-response to anti-tuberculous treatment necessitated gynaecological review.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY

Menarche occurred at the age of 14 years. She had regular menstrual periods; the cycle was 28 days and the duration 5 days.

She was para 2 + 0. Both deliveries, in 1975 and 1977, were term vaginal deliveries and the children were alive and well. She had never used any contraceptives.

PAST MEDICAL AND SURGICAL HISTORY

This was non-contributory.

SOCIAL AND FAMILY HISTORY

She was married. The couple and their children lived in Nairobi. Her husband worked as a bus conductor. There was no family history of chronic diseases.

PHYSICAL EXAMINATION

She had no pallor, jaundice, cyanosis, leg oedema or peripheral lymphadenopathy. She, however, appeared weak and apprehensive but was not wasted.

Her blood pressure was 120/80 mmHg., pulse was 96/minute, and temperature was 36.2°C. Her respiratory, cardiovascular and central nervous systems were essentially normal.

ABDOMINAL EXAMINATION

The abdomen was uniformly distended and tense. There were no surgical scars or areas of tenderness. Shifting dullness and fluid thrill were elicited. No intra-abdominal masses were palpable.

VAGINAL EXAMINATION

The vulva and vagina were normal. There was no vaginal discharge or bleeding. The cervix was parous, firm, smooth and the os was closed. The uterus was difficult to delineate. An irregular mass was felt in the pouch of Douglas.

RECTO-VAGINAL EXAMINATION

The mass in the pouch of Douglas was better defined: it was firm, irregular, fixed and not tender.

DIAGNOSIS AND MANAGEMENT

A presumptive diagnosis of ovarian malignancy was made. Several investigations were done and the results are shown below:-

Haemoglobin	:	14.0 gm/dl.
Haematocrit	:	42%
BUN	:	4.4 mmol/L.
Sodium	:	130 mmol/L.
Potassium	:	4.2 mmol/l.
M.S.S.U.	:	No growth on culture
Pap Smear	:	Class I.
Ascitic Tap	:	4 cc. of straw-coloured fluid received. Numerous small malignant cells are present singly and in clusters.

After receiving all these results a decision to do a laparotomy was taken. This was done on 20.11.81. She was prepared and premedicated as described in the introduction. Three units of compatible blood were obtained for her.

LAPARATOMY

In theatre anaesthesia was induced and maintained as described in the introduction. She was catheterised aseptically and the catheter left in place. Examination under anaesthesia revealed similar findings to those described above. The vagina was now thoroughly cleaned with 1% hibitane solution and painted with Bonney's blue solution.

Abdominal toilet was done and after draping the abdomen was opened in layers through a midline subumbilical incision. About 5 litres of haemorrhagic ascitic fluid was drained out. Both ovaries had multiple cysts and cauliflower-type of tumours. The omentum, gut, undersurface of the diaphragm and peritoneum had extensive tumour seedlings. The liver was, however, smooth and normal. Both fallopian tubes were thickened and blocked terminally. The uterus was normal size and had no tumour seedlings.

From these findings a clinical classification of Stage III ovarian malignancy was made. Total abdominal hysterectomy, bilateral salpingo-oophrectomy and partial omentectomy was considered the appropriate extent of the surgical management.

Using two tagged abdominal packs the intestines were pushed well away from the pelvis. The uterus and its appendages were then delivered through the abdominal incision. The right then left round ligaments were clamped and divided. The distal stumps were ligated with No.1 chromic catgut. The anterior leaf of the broad ligament was incised and the vesico-uterine peritoneum and the bladder bluntly separated from the uterus and pushed down.

The infidibulo-pelvic ligament of one side was now doubly clamped and then divided between the clamps. The ligament and the ovarian vessels therein was then doubly transfixed with No.2 chromic catgut.

This procedure was repeated on the opposite side. The posterior leaf of the broad ligament was now incised from the uterus and bluntly dissected downwards with a swab on a finger.

Using angled Kochers and a straight clamp the uterine vessels of one side then the other were doubly clamped and excised with a scalpel. The vessels were then doubly transfixed with No.2 chromic catgut. The cardinal ligaments on either side were subsequently clamped, divided and ligated. Amputation of the vaginal vault was now done. The four quadrants of the vaginal vault were held with straight clamps. The angles were secured with mattress sutures of No.1 chromic catgut. The vault was then closed with mattress sutures. The pelvic peritoneum was now closed over the vaginal vault with a continuous suture of No.0 chromic catgut; carefully burying the stamps of the round, infundibulo-pelvic and cardinal ligaments, and suspending the vault.

A sizeable amount of the omentum was clamped, excised and ligated. The uterus with its attached appendages and the omentum were submitted to the laboratory for histopathology.

The abdomen was closed in layers as described in the introduction. The patient lost about 700 mls. of blood and was transfused with two units of whole blood.

POST-OPERATIVE CARE

The patient's vital signs were observed half-hourly until she was fully awake from anaesthesia. She was given pethidine 6-hourly for analgesia for 48 hours. Intravenous fluids were maintained until bowel sounds were established. She also received prophylactic ampicillin for seven days.

She had an uneventful recovery. Post-operative haemoglobin concentration was 13.8 gm/dl. All abdominal stitches were removed on the seventh post-operative day. The wound was clean and had healed well.

On this day she was started on the first course of Melphalan (Alkeran). The dose was 0.2 mg. per kilogram body weight in 500 mls. of 5% dextrose given over a period of 30 minutes. She tolerated this course very well and did not develop any adverse reactions. After this she was discharged to be seen monthly in the ward for subsequent courses of chemotherapy.

HISTOLOGY (NO. 8540):

Both ovaries show presence of serous cystadenocarcinoma. The tumours have numerous psammoma bodies. The omentum shows large metastatic deposits of tumour. The fallopian tubes show chronic salpingitis but the uterus is unremarkable.

MONTHLY FOLLOW-UP

The patient was admitted in the ward every month for chemotherapy. In the ward she would have full physical examination, complete haemogram and liver functions tests before commencement of chemotherapy.

Upto the time of writing this paper she has received 18 courses of intravenous Melphalan, 12 courses of oral Melphalan (1 mg/Kg. body weight given three times daily for 5 days), and 2 courses of intravenous Endoxan (1 gm in 500 mls. of 5% dextrose given over 30 minutes). She has withstood her treatment quite well apart from troublesome menopausal symptoms of hot flushes and palpitations. These are ameliorated by intermittent mild sedation.

She has had no recurrence of ascitis and has gained weight well. Her general outlook and morale are very positive and high.

COMMENT

Ovarian tumours present a number of problems with regard to aetiology, classification, diagnosis and treatment. No other organ in the body produces such a multiplicity and diversity of tumours. Not only are these tumours distressingly insidious and silent in their development and do not give rise to early symptoms, but also no early, accurate and mass diagnostic means are available. All these factors work in concert to make ovarian cancer a major cause of death in gynaecological oncology all over the world (1-5).

The incidence of ovarian cancer is not known with certainty, but Ojwang and associates (5) reported on 60 cases seen at Kenyatta National Hospital over a five-year period. In Western countries, this malignancy occurs less frequently, but with worse prognosis, than cancer of the cervix and body of the uterus (1-4).

The commonest symptom of ovarian cancer is abdominal swelling alone or in combination with pain. At this stage, however, the disease would have spread outside the ovarian capsule and in advanced stage (F.I.G.O. Stage III or IV) rendering cure much less likely (1-5). Apart from the clinical extension of the disease, other factors which influence patients' survival include histological tumour type, degree of differentiation, available treatment modalities, and the amount of residual tumour after surgery (1,4).

This patient presented with progressive abdominal distension. She was initially treated a case of tuberculous peritonitis - an important differential diagnosis (3). At operation she was found to have Stage III serous cystadenocarcinoma - the commonest finding in most series (1-6). Although serous tumours have been shown to have poorer prognosis (4) the presence of psammoma bodies, as was in this, is said to somewhat brighten the outlook (1).

Although no age is exempted, ovarian cancer is largely a disease of perimenopausal and postmenopausal women (1-5). The mean age recorded in our environment is, however, lower than that in Western countries (5). This patient, at 22 years, was not in the usual age bracket; but she was of low parity - an associated factor that is frequently quoted (1-3).

The mainstay of treatment for this malignancy is surgery; which should be as radical as is operationally possible (1-5). At laparotomy as was done in this case, the tumour is staged according to the F.I.G.O.'s classification (for the details please see 1 and 3). In stage I and II surgical treatment may be curative. Because prognosis is related to the residual tumour after surgery, in advanced stages surgery aims to maximally reduce the tumour burden (1,4). This is then followed by chemotherapy and/or radiotherapy (1,2,4,5). In our unit, Ojwang and associates (5) showed that Melphalan (Alkeran) is an appropriate chemotherapeutic agent.

The patient under discussion had radical surgery followed by monthly chemotherapy. Although the amount of residual tumour and the degree of histologic differentiation were not documented, she has responded to treatment very well. She has remained symptom-free for about three years after surgery. Hanson and associates (4) found that younger patients had lower grade-tumour and, therefore, had better survival.

The latest trend now is to use combined chemotherapy in advanced tumour stages, in poorly differentiated tumours, and if more than two centimetres of tumour mass has been left after surgical debulking (1,4). Important questions like which is the most appropriate and suitable chemotherapeutic combination, and for how long the chemotherapy should be continued have not been satisfactorily resolved and unanimously accepted.

The "second-Look" laparotomy has emerged as an invaluable adjuvant in the management of patients with ovarian cancer (1,3,6). Schwartz and Smith (6) listed the following advantages of this operation:-

- (i) It permits chemotherapy to be discontinued in those patients without evidence of disease. To arrive at this conclusion, peritoneal washings and multiple biopsy specimens from abdominal and pelvic peritoneum and from the nodes must be tumour-free.

(ii) It permits removal of any residual tumour mass if present. Future managment is then rationally planned.

(iii) It permits diagnosis of failure to respond.

These authors found that the most significant factors associated with negative "second-look" operations were : Stage of disease, the amount of residual tumour after surgery, and the number of courses of chemotherapy - with twelve or more courses showing optimal response (6). This patient has been on chemotherapy since 1981. We are currently planning to do the "second-look" operation.

It is trite but it is true that prevention is better than cure. As far ovarian cancer is concerned, not only prevention but even early diagnosis have remained elusive and non-forthcoming (1,2). Until this stage is reached, the outcome of patients with this disease will continue to remain largely in the hands of fate, the skill of the surgeon, the acumen of the pathologist and optimal post-operative therapy.

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CASE NO. 14.

* * * * *

ENDOCERVICAL CARCINOMA IN-SITU:

EXTENDED HYSTERECTOMY.

ENDOCERVICAL CARCINOMA IN-SITU:EXTENDED HYSTERECTOMY

<u>NAME</u>	: G.W.M. (Mrs.)	<u>L.M.P.</u>	: 10 years Previous
<u>UNIT NO.:</u>	655248	<u>ADMISSION</u>	: 9.11.1984
<u>AGE</u>	: 68 years	<u>E.U.A.</u>	: 9.11.1984
<u>TRIBE</u>	: Kikuyu	<u>HYSTERECTOMY</u>	: 21.1.1985
<u>PARITY</u>	: 9+0	<u>DISCHARGE</u>	: 13.2.1985

PRESENTING HISTORY:

The patient was admitted to the acute gynaecological ward on 9.11.1984 with a two-day history of postmenopausal bleeding. The bleeding had started spontaneously and was not heavy.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

She could not remember the age at menarche. She was postmenopausal for the last 10 years.

She was Para 9+0. All her children were alive and well. Her last delivery was in 1957.

FAMILY AND SOCIAL HISTORY:

She married at the age of 18 years but her husband died in 1970. She was presently living with one of her children in Nairobi. She denied any history of premarital sexual intercourse. There was no history of chronic medical diseases.

PAST MEDICAL AND SURGICAL HISTORY:

This had no relevance to her present problem.

PHYSICAL EXAMINATION

She was an elderly lady in good general condition. She had no pallor, oedema, cyanosis or peripheral lymphadenopathy. Her vital signs were within normal limits. Her cardiovascular and respiratory systems were essentially normal. The abdomen was soft with no abnormal masses. Liver and spleen were not palpable.

SPECULUM EXAMINATION:

The vulva and vagina appeared healthy and normal. The cervix was atrophic and had ^{/a}small growth on its posterior lip which bled easily on touch.

Digital examination revealed a normal sized retroverted uterus and clear adnexae.

DIAGNOSIS AND MANAGEMENT

A presumptive diagnosis of carcinoma of the cervix - Stage I B was made. A pap smear was taken and the patient was prepared for examination under anaesthesia (E.U.A.). During E.U.A. the plan was to take a biopsy from the cervical growth on the posterior lip followed by fractional curettage.

E.U.A.:

This was done on the same day of admission. She was prepared and premedicated as described in the introduction. In theatre general anaesthesia was induced and maintained ^{as}described in the introduction.

The patient was now placed in lithotomy position. The vulva, vagina and perineum were cleaned with hibitane solution and the area draped with sterile towels. Inspection revealed healthy vulva and vagina. The cervix was exposed with a speculum. The findings described above were confirmed. Digital examination revealed a normal sized retroverted uterus and clear adnexae. The rectal mucosa, pouch of Douglas and parametria were all free on rectal examination.

Using a scalpel the cervical growth on the posterior lip was excised. A figure-of-eight haemostatic suture of No. "00" chromic catgut was applied to the bleeding area. Using a small sharp curette the cervical canal was curetted. Standard dilatation was now done upto Hegar dilator No. "7". Uterine curettage was then done.

The cervical biopsy specimen, the endocervical curettings, and the endometria ^{/1}curettings were put into separate specimen bottles and sent to the laboratory for histology. Anaesthesia was reversed and the patient wheeled out of theatre.

Routine post-operative care was accorded the patient. Recovery from anaesthesia was uneventful.

RESULTS OF THE INVESTIGATIONS:

- 1. PAP SMEAR : Class II. Cellular changes associated with atrophy
- 2. CERVICAL BIOPSY : This firm haemorrhagic mass shows smooth muscle with partial hyaline degeneration. No tumour seen.
- 3. CERVICAL CURETTINGS : The endocervical epithelium exhibits marked dysplasia amounting to carcinoma insitu.
- 4. ENDOMETRIAL CURETTINGS : Atrophic endometrium with no abnormality.

After receiving these results a pathological diagnosis of endocervical carcinoma in-situ was entertained. Because of the discrepancy between the clinical and the pathological findings a decision to do extended hysterectomy was taken.

Blood specimens were taken from her for haemogram, and urea and electrolytes. A mid stream specimen of urine was taken for culture. The results of these investigations are shown below:

- 1. Haemoglobin : 12.7gm/dl
- 2. Haematocrit : 38.3%
- 3. Sodium : 139 mmol/l
- 4. Potassium : 4.4 mmol/l
- 5. B.U.N. : 5.3 mmol/l
- 6. M.S.S.U. : No growth on culture.

EXTENDED HYSTERECTOMY:

This was done on 21.1.1985. Three units of blood were obtained for her. She was prepared and premedicated as described in the introduction. In theatre she was put under general anaesthesia as described in the introduction. She was now catheterised aseptically and the catheter left insitu. Examination under anaesthesia confirmed the earlier findings. The vagina was now painted with methylene blue solution.

The abdomen was cleaned with hibitane solution then draped. Through a midline subumbilical incision the abdomen was opened in layers. The uterus, tubes and ovaries appeared healthy and normal. Extended hysterectomy was now done. The procedure is essentially the same as that described under the case MULTIPLE UTERINE FIBROIDS but in addition the following extensions were made:

- (i) Both tubes and ovaries were removed. The infundibulo-pelvic ligament was then transfixed with No. "2" chromic catgut.
- (ii) Hysterectomy was continued down to include a two-centimeter cuff of the vagina.

The vaginal vault was now closed and peritonization done. The uterine and cervical cavities of the hysterectomy specimen were opened. No gross cervical or endometrial lesions were seen. The whole specimen was then sent for histology.

The abdomen was now closed in three layers as described in the introduction. Total blood loss was about 600mls. and the patient was transfused with two units of blood.

POST-OPERATIVE CARE:

The patient received routine post-operative care as described in the introduction. She was mobilized from bed from the third post-operative day. Alternate and all abdominal stitches were removed on the sixth and seventh post-operative days respectively. Post-operative haemoglobin concentration was 13.2 gm/dl.

HISTOLOGY REPORT:

Uterus and cervix are normal. No tumour detected.

GYNAECOLOGICAL REVIEW:

She was reviewed in the clinic on 4.4.1985. She had no complaints. The abdomen was soft with no areas of tenderness. The vaginal vault was well healed on speculum examination. A pap smear was taken from the vault which later showed Pap class I.

She will be reviewed again after 3 months.

COMMENT:

Presented in this paper is an elderly lady who had endocervical carcinoma in-situ. She was managed by extended hysterectomy.

Carcinoma in-situ (CIS) is a term applied to a microscopic picture of surface cervical epithelium in which the individual cells have the same characteristics as those of invasive cancer but are confined and occupy the full thickness of the epithelial layer (1). The bulk of evidence so far attests to the fact that CIS is a premalignant cervical lesion (1,2). Boyes et al (2) in a statistical study showed that about 60% of CIS will progress to invasive cancer in 10-20 years. They also pointed out that the incidence of invasive cervical cancer is substantially decreased by removal of in-situ disease from the community.

CIS as well as invasive cervical cancer can be diagnosed by cervical cytology. The major clinical value of cervical cancer screening is the detection of the disease in an earlier stage thus making prospects of cure much more favourable. Cervical screening has a known false negative rate, which is estimated to be 10-15% (1). This false negative rate is, however, higher in endocervical lesions which produce fewer exfoliated cells (1).

This patient had Pap class II on cervical cytology, but endocervical curettings exhibited features of marked dysplasia amounting to CIS. Thus, this patient had false negative results on cervical cytology. To minimize the false negative rate, it has been suggested that both the ectocervix and the endocervix must be sampled (3).

The precise aetiological factor causing cervical cancer is not known. Because of numerous circumstantial evidence, it now appears that, whatever its nature, this carcinogen is transmitted by sexual intercourse. It has been shown that women who begin coitus in their teens or are married before the age of 20 years are at a higher risk of developing cervical cancer (4,5). Multiple sexual partners is another factor which is closely associated with a higher incidence of cervical cancer (4). The patient under discussion had no

premarital sexual experience. She, however, married at 18 years and was, therefore, exposed to coitus at an early age.

Other risk factors like race, socio-economic status, occupation, education and venereal diseases may be characteristic of the population from which women who have early intercourse and multiple sexual partners are drawn and may not themselves be aetiologically important. High parity, as was the case in this patient, is also closely correlated to early age at first coitus or marriage.

Abnormal vaginal bleeding is the commonest symptom of carcinoma of the cervix. The patient under discussion presented with postmenopausal bleeding. Clinically a presumptive diagnosis of stage IB carcinoma of the cervix was made. However, histology of the cervical growth showed a haemorrhagic mass of smooth muscle with hyaline degeneration. Because of the discrepancy between the clinical impression and the pathological report, it was thought prudent to treat her with extended hysterectomy. Treatment of patients with cervical intraepithelial neoplasia can now be achieved by cauterization, cryosurgery, laser therapy, cone biopsy or hysterectomy. Hysterectomy is reserved for patients of high parity and/or advanced age - two factors which were quite evident in this patient.

Another interesting aspect of this case is the fact that the hysterectomy specimen showed no histological abnormalities although endocervical curettings had earlier shown features of severe dysplasia amounting to CIS. It is likely that the endocervical curettage had removed the intraepithelial neoplasia. Diagnostic measures have been shown to account for some of the so-called "disappearing cervical lesions" (1).

Cervical cancer is the leading female genital malignancy in this country, and the majority of the patients present with more advanced disease rendering prospects of cure much less likely (6). Prevention of this dreaded malignancy lies in two areas:

- (i) Sex Education : This should stress that delay in beginning sexual activity and avoidance of promiscuity would result in a lower frequency of cervical cancer.
- (ii) Cervical cancer screening : Established screening programmes have shown that mortality and morbidity from cervical cancer are drastically reduced in well screened areas (2). Nation-wide screening programmes are expensive to set up and to maintain, but every opportunity should be taken to do cervical cytology as part of routine medical care in sexually active women.

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CASE NO. 15

* * * * *

PERFORATION OF THE UTERUS AND INJURY TO SMALL

INTESTINES COMPLICATING SURGICAL TERMINATION

OF PREGNANCY : UTERINE REPAIR, RESECTION AND

END-TO-END ANASTOMOSIS OF THE GUT

PERFORATION OF THE UTERUS AND INJURY TO SMALL INTESTINES
COMPLICATING SURGICAL TERMINATION OF PREGNANCY : UTERINE
REPAIR, RESECTION AND END-TO-END ANASTOMOSIS OF THE GUT •

<u>NAME</u>	: H. W. K. (Mrs.)	<u>L.M.P.</u>	: 27.5.1984
<u>UNIT NO.</u>	: 630240	<u>AMENORRHOEA</u>	: 11 ⁺ weeks
<u>AGE</u>	: 28 years	<u>ADMISSION</u>	: 20.8.1984
<u>TRIBE</u>	: Kikuyu	<u>OPERATION</u>	: 23.8.1984
<u>PARITY</u>	: 3+0	<u>DISCHARGED</u>	: 30.8.1984

PRESENTING HISTORY:

This patient was admitted to the emergency gynaecological ward on 20.8.1984 for surgical termination of pregnancy on medical grounds. She did not give any history of abdominal pains or vaginal bleeding. Her last menstrual periods was on 27.5.1984; therefore, the period of amenorrhoea was 11+ weeks.

MEDICAL AND PSYCHIATRIC HISTORY:

She was followed in the psychiatric and neurology clinics because of severe headache. She had several skull x-rays to exclude a brain space - occupying lesion. In the psychiatric clinic a diagnosis of reactive depression was made and she was treated with Tegretol, valium, serenace and Imipramine. All these were done in June, 1984 before it was realized that she was pregnant. In August, 1984 when she had missed two menstrual periods, she was referred to the gynaecology clinic for termination of pregnancy on medical grounds.

PAST OBSTETRIC AND GYNAECOLOGIC HISTORY:

Menarche occurred at the age of 14 years. Her menstrual periods were regular; the cycle was 28 days and the duration 3 days.

She was Para 3+0. All were term vaginal deliveries and the children were alive and well. She used an intrauterine contraceptive device after her last delivery in 1981. The device was removed in April, 1984 because of menorrhagia.

SOCIAL AND FAMILY HISTORY:

She was married and lived with her husband in Nairobi. There was no family history of psychiatric diseases, hypertension or diabetes mellitus.

PHYSICAL EXAMINATION

Her general condition was satisfactory. She had no pallor, cyanosis, jaundice or peripheral oedema. Her vital signs were within normal limits. The chest was clear and the cardiovascular system was essentially normal.

CENTRAL NERVOUS SYSTEM

She was fully conscious and was well oriented in time, space and person. The cranial nerves, reflexes, motor and sensory systems were clinically unimpaired. The patient, however, appeared withdrawn and reticent and was greatly concerned that she might be carrying a deformed fetus because of the many x-rays and the medications she had taken in early pregnancy.

ABDOMINAL EXAMINATION:

The abdomen was soft and non-tender. The uterine fundus could just be palpated above the symphysis pubis. The liver and spleen were not palpable.

PELVIC EXAMINATION:

The vulva and vagina were normal. The cervix was parous, soft and the internal os was closed. The uterus corresponded to 12 weeks gestation and both adnexae were clear.

DIAGNOSIS AND MANAGEMENT

A diagnosis reactive depression in early pregnancy for surgical termination was made. Blood specimens were taken for haemoglobin estimation and grouping and crossmatching. Results showed a haemoglobin concentration of 13.4gm/dl and a haematocrit of 38.7%.

TERMINATION OF PREGNANCY:

This was done on 23.8.1984. Two units of compatible group "A" Rhesus (D) Positive blood were booked for her. She was prepared and premedicated as described in the introduction. In theatre general anaesthesia was induced and maintained as described in the introduction.

She was then placed in lithotomy position. Vulvo-vaginal and perineal toilet was done and the area draped with sterile towels. The bladder was emptied using a metal catheter. Examination under anaesthesia confirmed the findings described earlier. An Auvard's speculum was inserted to expose the cervix. The anterior lip of the cervix was held with a volsellum forceps. Standard dilatation was now done upto hegar dilator No. "11".

A 10mm suction curette was connected to a vacuum machine via a rubber tubing. The uterus was then gently evacuated by back and forth movements of the curette. After about 15 minutes the uterus was felt to be empty by the gritty sensation of the endometrium. At this time it was also noticed that the curette could be inserted further than was previously possible. Uterine bleeding was also rather brisk. An impression of uterine perforation was thus entertained. A decision to do a laparotomy was taken.

LAPARATOMY:

The patient was now placed in supine position. The abdomen was cleaned and draped. Through a midline subumbilical incision the abdomen was opened in layers.

About 200mls of haemoperitoneum was found on opening the abdomen. The uterus had a fundal perforation measuring about 2cm. in diameter. There was blunt injury to the small gut near the ileo-caecal junction which had an extent of approximately 5cm. The mesentery around the injured portion of the small intestines was devitalized thus leaving that section of the gut with questionable viability. Decision was thus taken to resect off that section and perform end-to-end anastomosis of the intestines.

First, the perforation in the uterus was repaired in three layers using interrupted sutures of NO. "0" chromic catgut. Haemostasis was achieved.

Next, crushing clamps were placed obliquely to the intestines, with the apex on the mesenteric side. Noncrushing clamps were then proximally placed to control any spill. The devitalized segment of the gut was then resected off. Using atraumatic round body needle, continuous sutures of No. "00" chromic catgut were used to approximate the serosal surfaces of the intestines on the posterior aspect. The posterior mucosal layers were now approximated with No. "00" chromic catgut suture on atraumatic round body needle. This suture was continued anteriorly to close the mucosal layers. After this, the anterior serosal layers were approximated with the same suture. The mesenteric defect was closed with continuous No. "00" chromic catgut suture. Any bleeding points were separately tied with No. "00" chromic catgut until haemostasis was established.

The noncrushing clamps were now removed. Inspection showed no leakage of intestinal contents through the suture line. There were no other injuries to the viscera. The peritoneal cavity was now thoroughly cleaned with 500mg. of Rifocin in 500mls. of warm normal saline. The abdomen was then closed in layers as described in the introduction.

All in all, the patient lost about 1500mls of blood. She was transfused with 3 units of whole blood.

POST-OPERATIVE CARE:

The patient's vital signs were observed half-hourly until she was fully recovered from anaesthesia, then they were charted 4-hourly. A nasogastric tube was introduced and intermittent nasogastric suction was done for the first 48 hours. She was maintained on intravenous fluids of normal saline alternating with 5% dextrose - 500mls 4-hourly - for 48 hours. Analgesia was provided by pethidine - 100mg 6-hourly for 48 hours. She was started on I.V. Flagyl - 500mg 6-hourly, and I.M. Ampicillin - 1gm. 6-hourly for 48 hours. After this she was continued on oral flagyl - 400mg 8-hourly and oral

ampicillin - 500mg 6-hourly for a further 5 days.

Recovery was uneventful. There was no abdominal distention at any time in the immediate post-operative period. By the second post-operative period she had passed flatus and the bowel sounds were heard on auscultation. She was started on oral sips of water and was encouraged to get out of bed and move about.

Haemoglobin estimation done on the third post-operative day showed a haemoglobin concentration of 12.gm/dl. Alternate and all abdominal stitches were removed on the 6th and 7th post-operative days respectively. The wound was clean and had healed well. She was discharged to be reviewed in the gynaecology clinic after 6 weeks.

GYNAECOLOGIC REVIEW:

She attended the clinic after 6 weeks. She was well and had no complaints. She had, however, not resumed her menstruation yet. The abdomen was soft and the scar well healed. Pelvic examination revealed normal pelvic organs. She was advised on contraception and was discharged through the family planning clinic.

COMMENT:

Unwanted pregnancy, with its sequelae of criminally induced abortion and subsequent postabortal sepsis is a major cause of maternal morbidity and mortality in this country (1,2). Kenya's law on termination of pregnancy is not only very strict but it is also rather ambiguous and vague. The only allowance for carrying abortion lawfully in this country is found in SECTION 240 of the penal code. This section reads as follows:

"A person is not criminally responsible for performing in good faith and with reasonable care and skill a surgical operation upon any person for his or her benefit, or upon an unborn child for the preservation of the mother's life, if the performance of the operation is reasonable, having regard to the patient's state at the time and the circumstances of the case".

In the case of abortion, the law requires that two doctors - one a physician and the other a psychiatrist - certify that the operation is necessary to preserve a woman's life, and then the termination should be carried out in a hospital by a competent doctor. The patient presented had had several x-rays and medications in very early pregnancy. She was, therefore, quite concerned that she might be carrying a malformed baby. This deep concern made her reactive depression, for which she was being treated in the psychiatric clinic, worse. The psychiatrist who was looking after her recommended termination of pregnancy. She was reviewed by a consultant gynaecologist who concurred with the views of the psychiatrist. This, therefore, established a bona fide prerequisite for termination of pregnancy in this case.

For therapeutic termination of pregnancy several methods are in use. In very early pregnancy (less than 8 weeks gestation) the products of conception may be aspirated using Karman cannula and syringe - a procedure called "Menstrual regulation" or "Menstrual aspiration". Between 8 and 12 weeks termination is usually achieved by dilatation of the cervix followed by either curettage or vacuum aspiration. After 12 weeks the methods used involve either intraamniotic or extraamniotic installation of abortifacients, or

hysterotomy.

Suction curettage is associated with a number of complications. One of these complications occurred in this patient - i.e.-uterine perforation and injury to the small intestines. The incidence of perforation of the uterus varies between 0.5 - 10 per 1,000 procedures (3,4). Because uterine perforation is a surgical accident which occurs veiled from the observer's eye and because abortion is a one-man procedure, it is probably wise to say that the perforations reported in most series are those which are most obvious and that many remain unreported either by design or through ignorance.

There are basically two factors which have been associated with perforation of the uterus - these are:

1. The skill of the surgeon (4,5). This was the likely factor in this case.
2. The position of the uterus; with a retroverted uterus being associated with a higher risk of uterine perforation (4,5).

About any instrument used in the surgical termination of pregnancy may cause perforation of the uterus. In this case the putative instrument was not known with certainty; but from the size of the rent in the uterus and the devitalization of the segment of the intestines and its adjacent mesentery, this was assumed to be the suction curette. Perforation by a small instrument like the uterine sound may be managed conservatively. This involves close observation in hospital plus a course of broad spectrum antibiotics. Most of these small perforations are said to heal spontaneously (5). However, if there is any doubt about the extent of the damage then the best management is laparotomy and repair of the damage (3,5). This course of action was taken in this case, and, retrospectively, this was justified.

Other consequences which may follow elective termination of pregnancy include maternal mortality, haemorrhage, sepsis, cervical incompetence, uterine rupture during subsequent pregnancies, and the so-called Asherman syndrome (5). All these complications are rare - for example, the risk of death from abortion by dilatation and evacuation performed during the first

2 months of gestation is in the region of 0.6 per 100,000 procedures (5). Legally induced abortion is, therefore, a relatively safe procedure - in fact much safer than criminally induced abortion by "back-street doctors". Health education, sex education in schools, use of contraceptives and liberalization of abortion laws will greatly reduce the morbidity, mortality and misery caused by criminally induced abortion. Elective termination of pregnancy is also a necessary back-up method to family planning services.

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