Female Reproductive Structure and Function: Bane of Women in The Developing Countries

By

Adetola Ojo OLATUNJI
B.Sc (Hons), MB ChB (Ife), FRCOG (London), FWACS, FICS
Professor of Obstetrics and Gynaecology

91st Inaugural Lecture

OLABISI ONABANJO UNIVERSITY

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The Vice-Chancellor,

The Deputy-Vice Chancellors, Academic, and Administration,

Other Principal Officers of the University,

Provost of Colleges and Postgraduate School,

Dean of Faculties,

Head of Departments,

Colleagues, Friends from Sister Universities and Institutions,

Distinguished Ladies and Gentlemen,

Gentlemen of the Press,

Great OOUITES.

To God is the glory for making it possible that I stand before you all this afternoon to deliver the 91st Inaugural Lecture of Olabisi Onabanjo University, Ago-Iwoye. It is the third (3rd) from the Department of Obstetrics and Gynecology since the inception of the Medical College.

Delivering Inaugural Lecture is an opportunity for Professor to inform colleagues in the University and the general public about his research career so far and update them on his current and future directions.

This is to be done in a way as to synthesize one's scholarship and contribution to knowledge in such a simplified manner that individuals who do not belong to the same field with the scholar will understand and benefit from what the Professor has come to say. It is a debt a Professor owes the University. I have come to pay mine this afternoon.

My Inaugural Lecture is titled 'Reproductive Structure and Function: Bane of Women in the Developing Countries'. The main word that deserves further explanation in the title is the word 'Bane' which simply means 'a cause of great distress or annoyance', and when joined with the rest, it means the great distress that accompanies the female reproductive structure in the course of performing

its function. The choice is borne out of my research and clinical findings in various aspects of the system and function which will be discussed under the following headings:

1. Female reproductive structure

2. Human reproductive physiology

3. Pathologies affecting the reproductive structure

4. Reproductive failure

5. Complication of pregnancy

Female Reproductive Structures.

The female reproductive organs can be divided into external and internal genitalia. The external genitalia are those organs that are outside the true pelvis and include: The perineum, Mons pubis, Clitoris, Urethral opening (meatus), Labia minora and Majora, Vestibule (opening) of the vagina, Greater vestibular (Bartholin's) glands, Skene's glands, and Peri-urethral area**.** The components of the external genitalia are collectively referred to as Vulva.

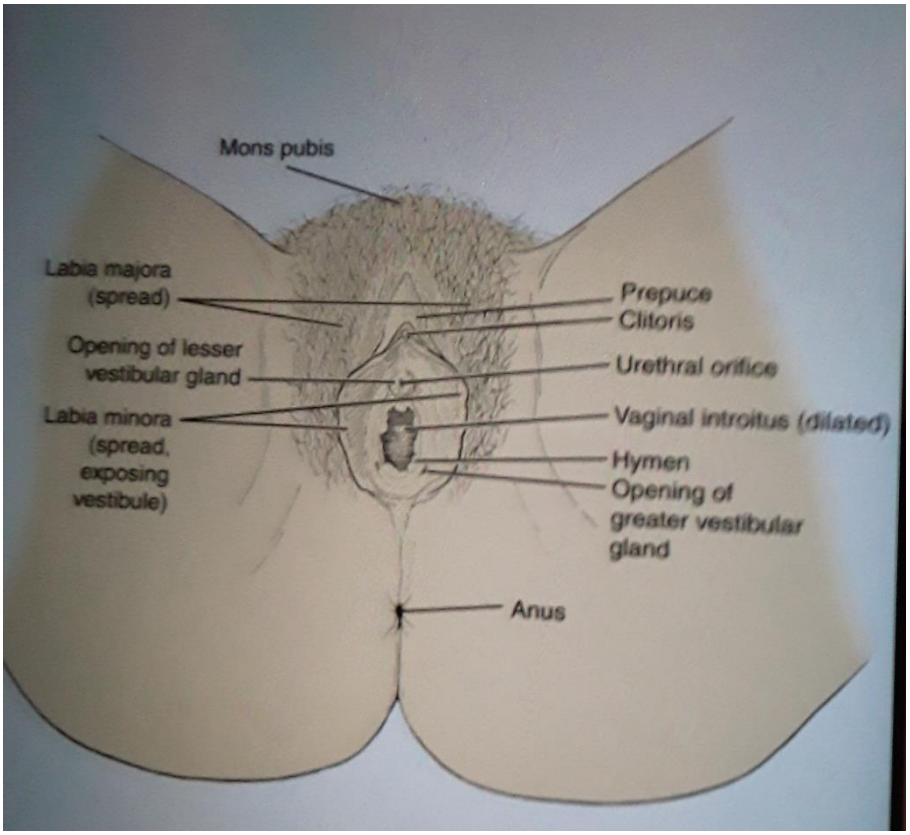


Figure i. Female External Genitals (Vulva)

The components of the internal genitalia lie within the true pelvis and include the Uterus, two Fallopian tubes (oviducts) and two ovaries, one on either side of the uterus, Cervix, and Vagina.

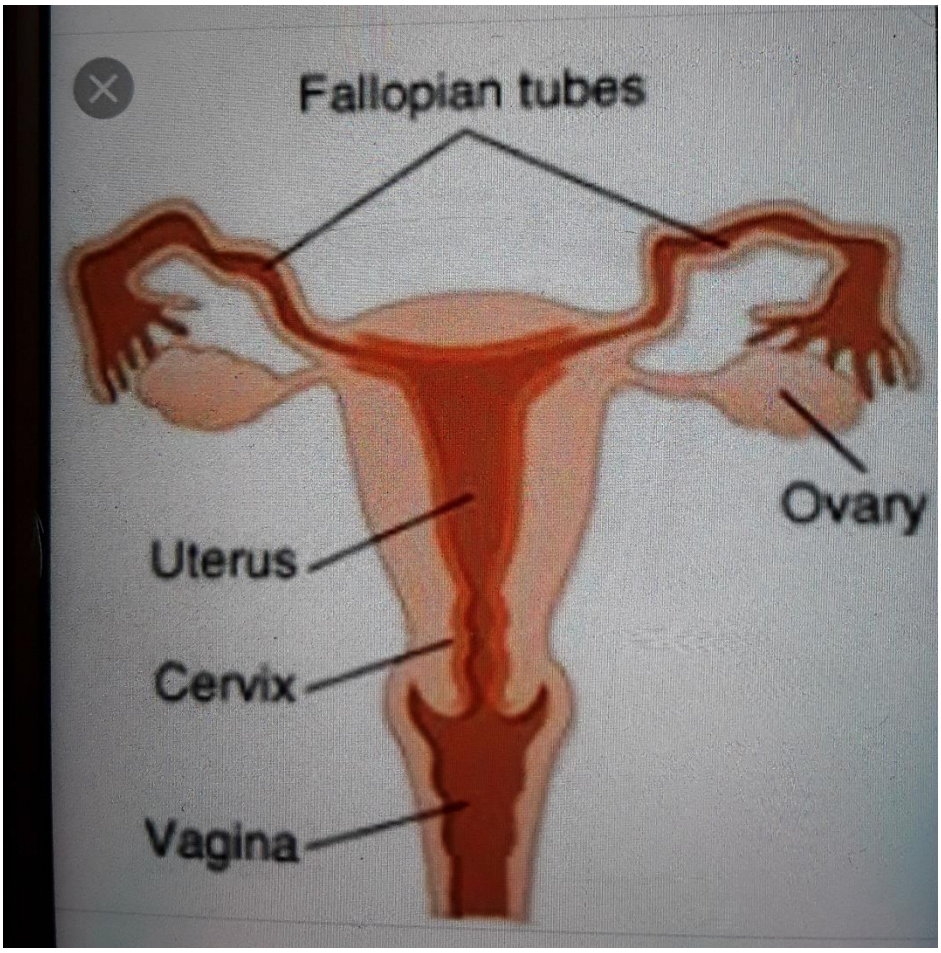


Figure ii. Female Internal Genitals

The **ovaries** are paired organs located on either side of the uterus below the uterine tubes. They are responsible for housing and releasing the ova (female eggs) necessary for reproduction. At birth, the ovaries contain approximately 1-2 million eggs, but only 300 of these ever mature and are released for the purpose of fertilization in the process of reproduction. That means the reproductive life span of a female with an average of twenty-eight day (four weeks) menstrual cycle is between 25-30 years. That is between the ages of 15 and 45 years with a little attrition.

The **uterus** is the hollow organ which lining is shed cyclically at menstruation. It lies between the bladder in front and rectum behind. The lumen communicates

with the abdominal cavity through the **fallopian tubes** above and to the outside by the **cervical canal** and **vagina**. It is divided into the body (corpus) and cervix or neck of the womb below. In adult female that has not delivered a baby, it weighs about 40-50g.

At full-term pregnancy, it weighs about 900g and after delivery, it gradually shrinks to a weight of 50-70g slightly bigger than pre-pregnancy weight. The fallopian tube collects the egg from the ovary at ovulation, transports it to its ampulla where it fuses with the male spermatozoa to become the embryo. This will now be transported through the very thin lumen of the tube to the body of the womb where it attaches, grows in structure and size for between 37 and 42 weeks (term) when the baby is delivered.

Blood supply to the vulva is mainly from branches of external iliac artery with venous drainage by the corresponding accompanying veins to the long saphenous vein which drains ultimately into external iliac vein. The deep structure of the vulva is perfused by terminal branches of the internal iliac artery with the corresponding veins draining ultimately to the internal iliac vein.

Lymphatic drainage is manly to the superficial, deep inguinal and external iliac nodes, while those from the deep tissues of the vulva drain to the internal pudenda and ultimately to the external iliac nodes, along the vessels.

The uterus, including the fundus and cervix, fallopian tubes and ovaries are perfused by the uterine artery, one of the terminal branches of the internal iliac and ovarian artery directly from the aorta. They both form connections (anastomosis) in supplying blood to the internal genitals with their corresponding venous drainage to the internal iliac, renal vein and ultimately to the Inferior Vena Cava.

Lymphatic drainage of the internal genitalia is to the internal iliac, common iliac and inguinal nodes via the round ligament of the uterus and ultimately to the para-aortic nodes.

Though the external and internal genitals are essentially supplied by branches of external and internal iliac arteries respectively, there are connections between them in various areas such that occlusion of the internal iliac artery to minimize blood loss during extensive pelvic surgery will not compromise blood supply to the remaining pelvic structures post-operatively. All these lymph modes receive infective materials and tumor metastases from the female genital organs, both external and internal. They all have to be removed during surgeries for these cancers thereby making their surgical treatment very extensive and more importantly bloody which is especially relevant when one considers the fact that blood banks, which make blood readily available for transfusion to patients in need and emergency situations are not functional. With this and coupled with unwillingness to donate blood freely by individuals create difficulties in obtaining blood for transfusion in our environment. Hence reduction of blood loss during surgery is of paramount importance in alleviating the Bane that may be encountered during extensive gynaecological surgery such as Radical hysterectomy for treatment of cancer of cervix.

Physiology of Reproduction

Mr. Vice-Chancellor Sir, reproduction is simply a process by which organisms propagate their species. In the human reproductive process, two kinds of sex cells (gametes) are involved, the male gamete (spermatozoon) and the female gamete (egg or ovum).

Following deposition of sperm in the vagina during sexual intercourse, the normal spermatozoa in their millions move up through the cervix, uterine cavity into the fallopian tubes where the female egg has been waiting after been picked up from the ovary following release at ovulation

Those two gametes meet within the female uterine tubes located one on either side of the uterus, fuse together (fertilization), move to the uterine cavity and begin to develop.

Essentially three requirements are necessary for pregnancy to be achieved. They are:

1. Normal Semen from the male containing adequate, structurally and functionally normal, motile spermatozoa in millions).

2. Normal egg produced by the female from the ovary.
3. Patent genital tract in both male and female necessary for transporting and meeting of both gametes.
The above describes the normal structures and functions of the different parts of the female reproductive structures.

Pathologies affecting the genital system.
Mr. Vice Chancellor Sir, there are a variety of pathologies that affect different parts of the reproductive organs from benign to malignant ones, is a Bane of reproductive structure in the female. The malignant ones are referred to as cancers or carcinomas. The peculiarity of the pathologies is that they are usually hidden for a long time before presenting for gynaecological advice especially since the external female genitals are usually referred to as 'private part' that is not to be exposed for anybody to see anyhow and also the fear of having complications and possibly dying from surgery performed on them. The internal ones are not easily accessible for proper and adequate assessment.
It is unimaginable that someone will keep a lesion in the so-called 'private part' for about five years before agreeing to medical advice. This was seen in a case reported by Olatunji, Oladapo and Jagun, (2004) where a young lady presented with a vulva swelling after hiding it for more than six months.

It was small in size when she presented and was offered surgery but refused and went away to seek alternative unorthodox treatment which was not only ineffective but made the lesion worse. She presented four years later with a giant lesion, extensively ulcerated and made her uncomfortable even to walk not to talk of having sexual intercourse despite the fact that she was just thirty-four (34) years old with only one child.

Mr. Vice Chancellor Sir, at that point, she consented to have surgery performed. The post-operative finding was a vulva, which normally should not weigh more than 50-100 grams, smooth or hairy as the case might have been an attractive now weighed one thousand five hundred grams (1.5kg) with extensive ulceration and offensive odor. Following surgery, the vaginal orifice was restored and was able to attempt getting pregnant since she could now have pleasant sexual intercourse. Had she consented to surgery when first seen, the distress associated

with the extensive growth, ulceration and offensive odor of the lesion for about four years would have been prevented.

The pictures below show the vulva lesion before and the perineum after surgery.

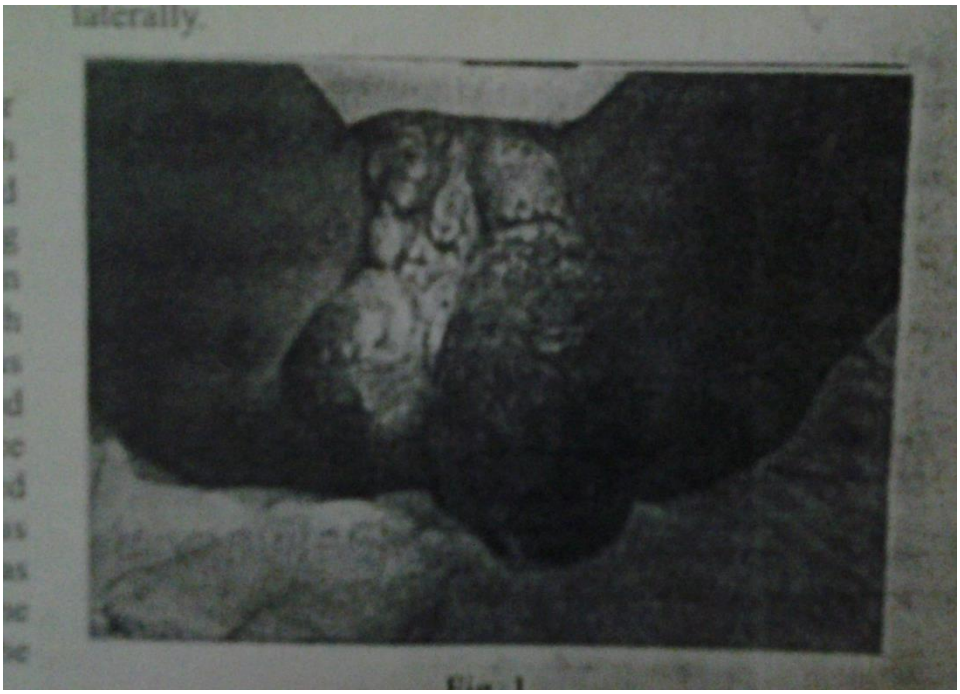
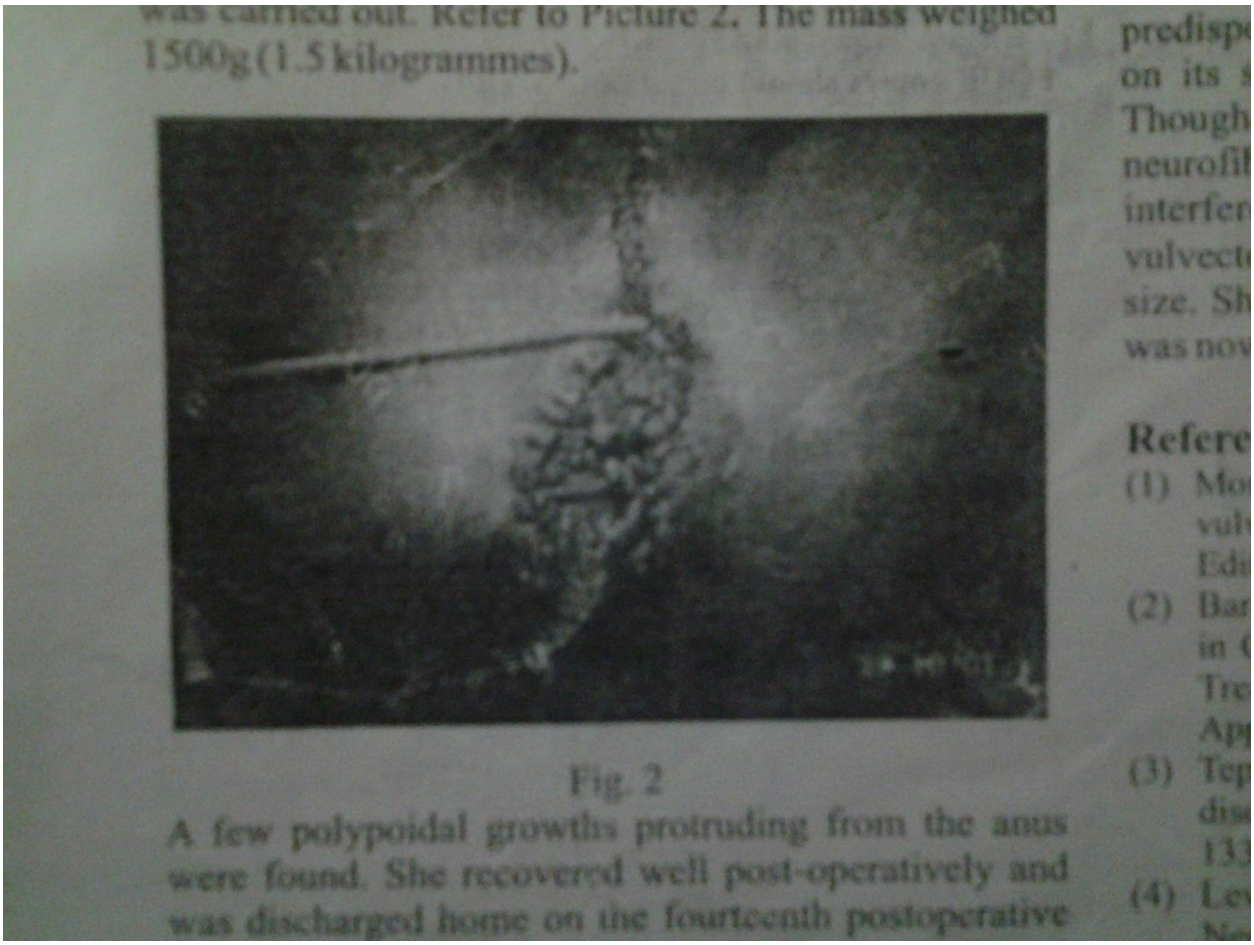


Figure iii. The lesion before surgery



was carried out. Refer to Picture 2. The mass weighed 1500g (1.5 kilogrammes).

Fig. 2

A few polypoidal growths protruding from the anus were found. She recovered well post-operatively and was discharged home on the fourteenth postoperative

Figure iv. The perineum after surgery

That was gross neglect on her part because initially she did not want to expose her vulva and when she eventually did, she was afraid of surgery. She was lucky because, after histopathological examination of the specimen, it turned out to be Isolated Giant Vulva Neurofibroma, a benign condition that needed no further treatment, she was cured. Other benign lesion that was similarly hidden until it was causing embarrassment had additional symptoms that were life-threatening like severe menstrual bleeding or preventing pregnancy before seeking medical attention was huge uterine fibroids. Patients with uterine fibroid were usually under the illusion that it could be passed out from the anus like feaces. There is no iota of truth in this as the definitive treatment of uterine fibroids is the surgical removal of the fibroid nodules, myomectomy only in young ones that still need to produce babies and removal of the whole uterus, hysterectomy, in those that have completed their families.

Mr. Vice-Chancellor Sir, you can imagine what the uterus with fibroids looked like and the nodules removed from it at surgery and wonder if the usual believe could hold water.

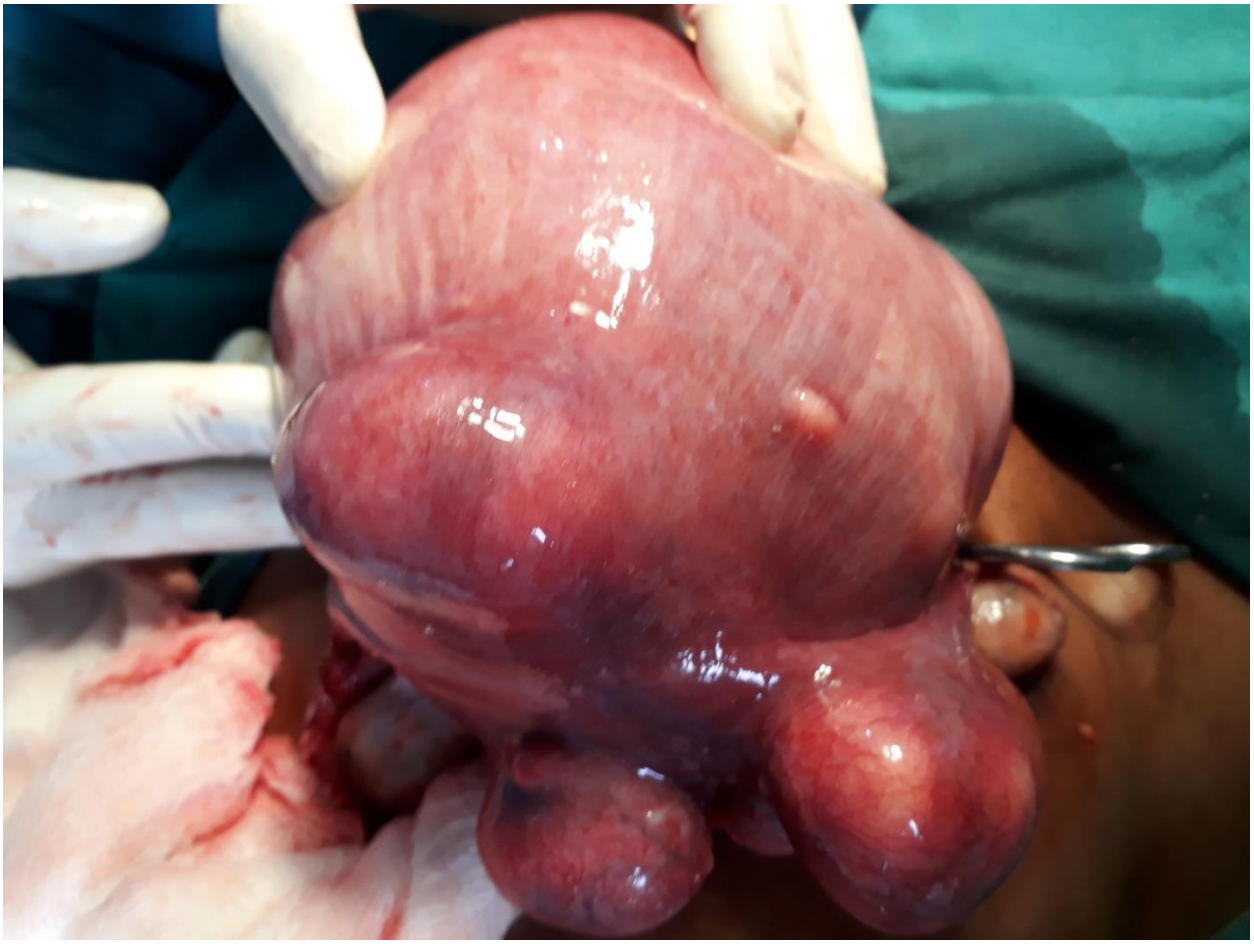


Figure v. Uterus with multiple fibroids

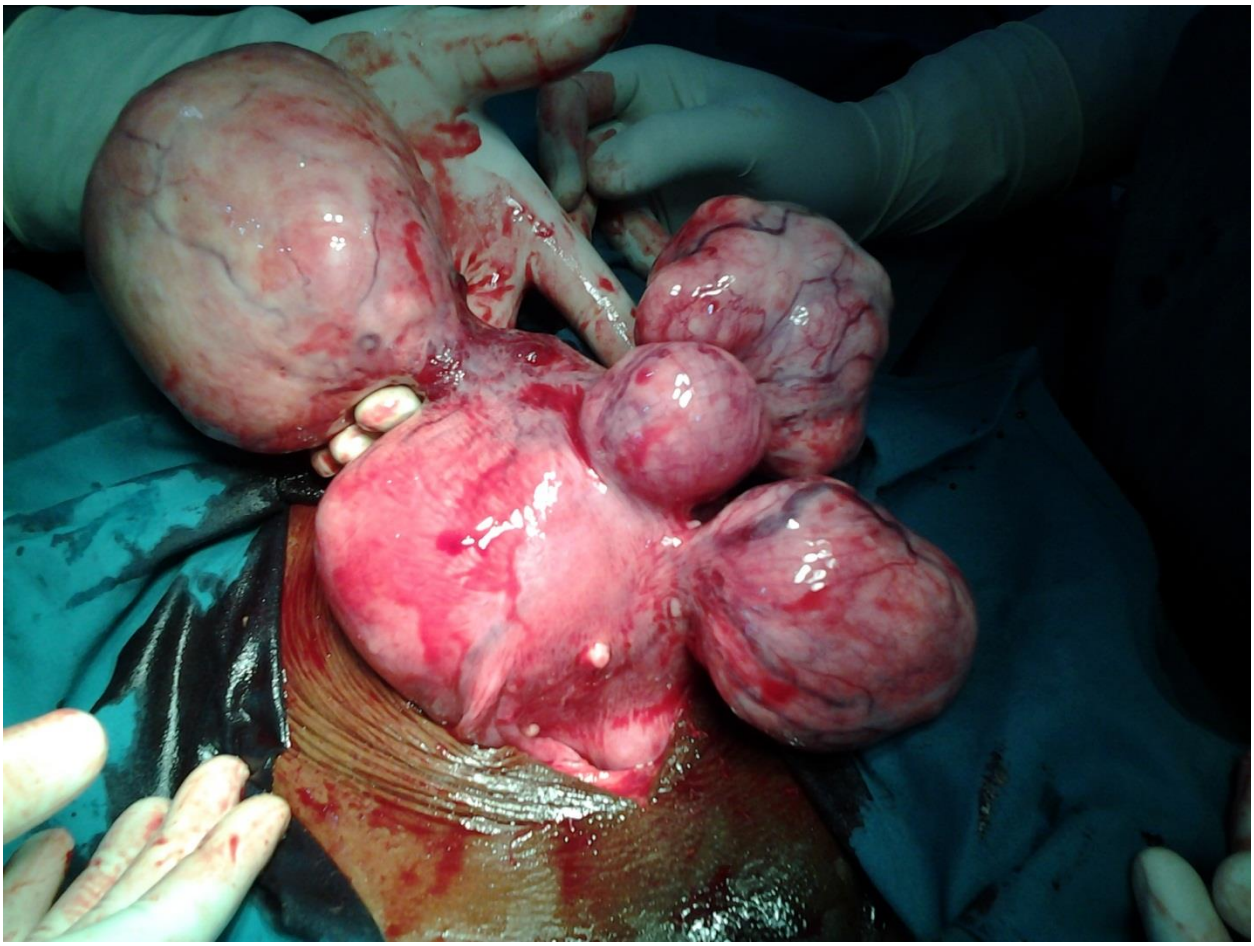


Figure vi. Uterus with multiple fibroids

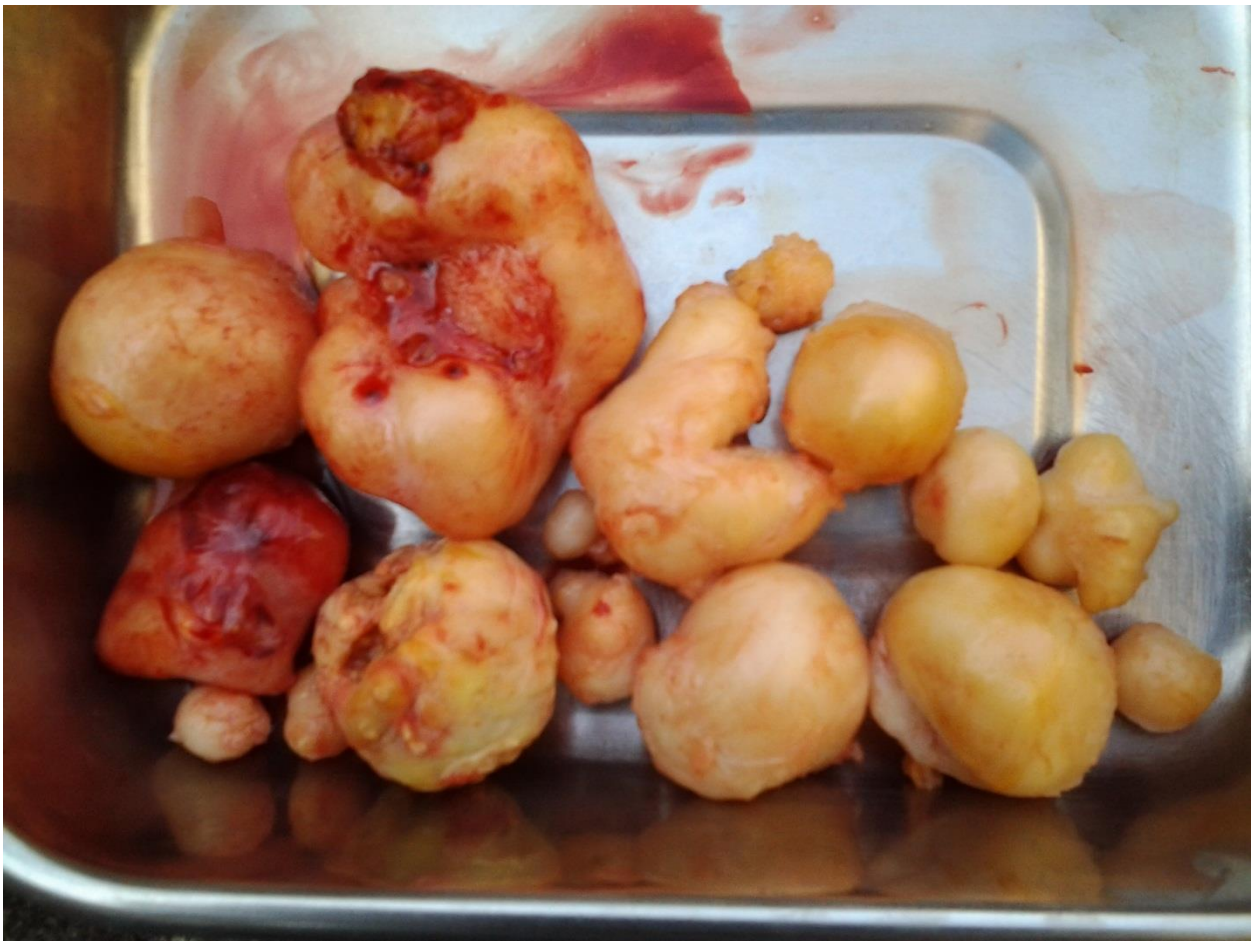


Figure vii. Fibroid nodules removed at surgery

Another condition was ovarian mass that weighed about 12kg after removal instead of 2-4 g, three to six thousand times the normal size.

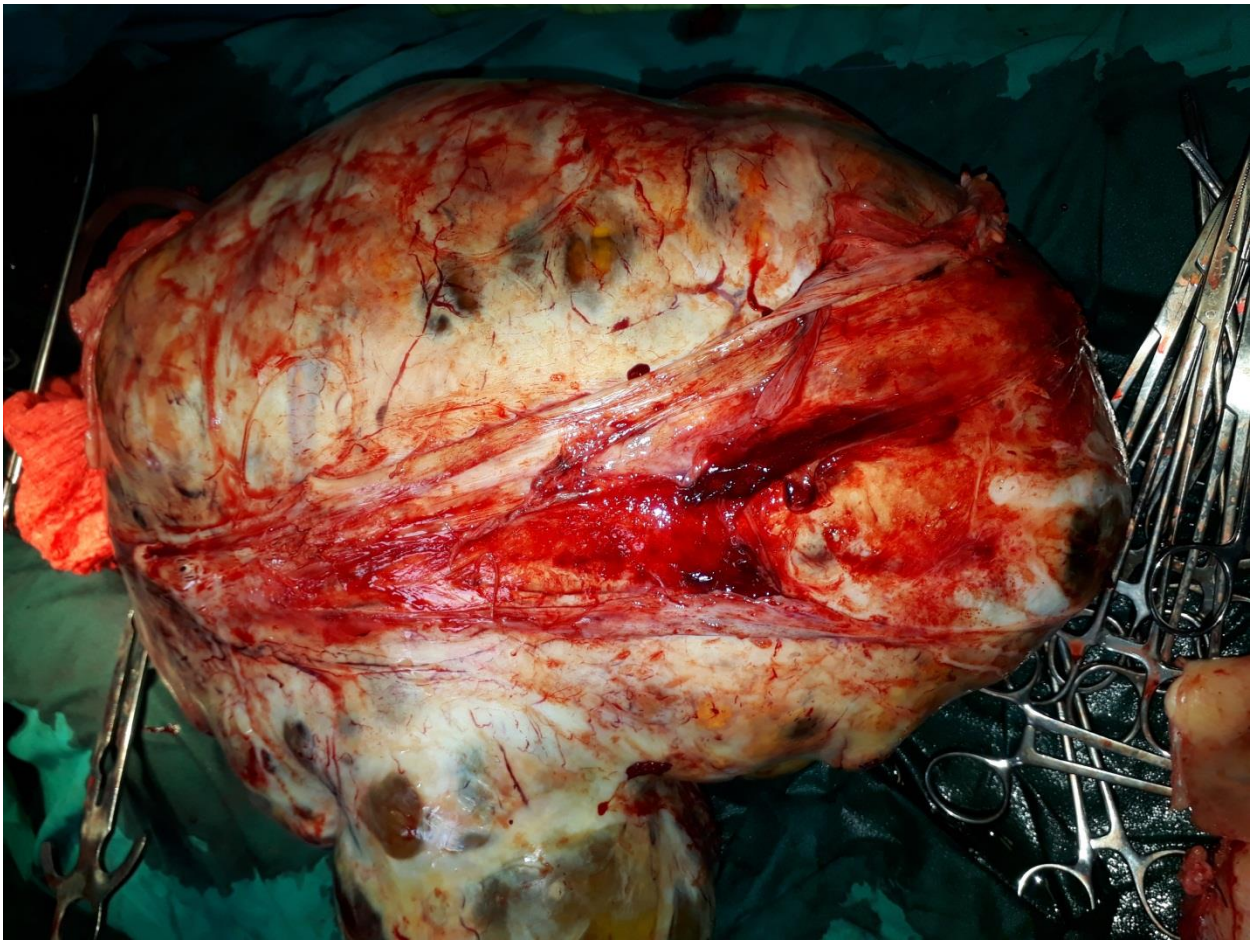


Figure vii.
Giant Benign Ovarian mass that weighed about 12 Kg after removal at surgery

Mr. Vice Chancellor Sir, as there were benign conditions that affected the genital tract, so also were malignant ones referred to as cancers or carcinomas. The commonest gynecological cancer worldwide is cancer of the cervix which is now known to be sexually related as it has been found from several studies that some categories of women are particularly at risk of developing it. These are females that start sexual intercourse at an early age when the squamocolumnar junction of the cervix is prone to abnormal changes (metaplasia), and also those that have many sexual partners.

Key to the etiology of this cancer is genital infection with a type of microorganism called Human Papilloma Virus of various sub-types which are sexually transmitted. The virus is found in about 99 percent of cases of cancer of the cervix. The implication of this is that immunization against the virus before the female genital tract is exposed to the virus can prevent the development of cancer of the cervix and other parts of the genital tract in the future. These vaccines are available at a cost far cheaper than treating the cancer when it develops.
It is recommended by World Health Organization that boys and girls between the ages of 11 and 12 years be vaccinated against the virus before they start having sexual contact that will expose them to Human Papilloma Virus infection and transmission to the female genital tract by the male.
In the pathogenesis of cancer of the cervix, it is preceded by pre-invasive abnormality of its epithelial covering called Cervical Intraepithelial Neoplasia (CIN).

This abnormality can be detected by simple cervical cytological screening which is very cheap, easy to carry out and an out-patient gynecological consulting room procedure. The interval between cervical smear abnormality and development of invasive cancer varies between ten and twenty (10 & 20) years during which if the abnormality is detected and treated by simple means, the development of deadly cancer of the cervix can be prevented. This form of screening is available at Olabisi Onabanjo University Teaching Hospital. It is simply to carry out and for a token of Five Hundred Naira only. To avoid unnecessary stress of going to Sagamu, it will be welcome a development if the University can train some of the Nurses working at the University Health Centre so that they can be carrying out the screening for all the females on campus, both students and staff.

This facility which is universally available in the developed countries where the incidence of cancer of the cervix has reduced tremendously, it is not in the developing countries of which Nigeria is one. Despite being preventable, it presented in our environment in the advanced stages. In a review by Olatunji & Sule-Odu in 2005, about two thirds (66.1 %) of the patients presented in advanced stages of IIB to IV when little success could be achieved with the five (5) year survival reduced to between 20 and 45 percent. If they had presented in early stages, it could have been treated with the aim of curing or significantly

increase the 5-year survival of the patient to as much as 90 percent by either surgery or radiation. Surgery was better for young patients because premature menopause in them resulting from radiation treatment were prevented. It could be carried out in only seventeen (17) out of eighty-one (81) patients, 21 percent of those that presented with the disease in early stages I and IIA. (Olatunji & Sule-Odu, 2006)

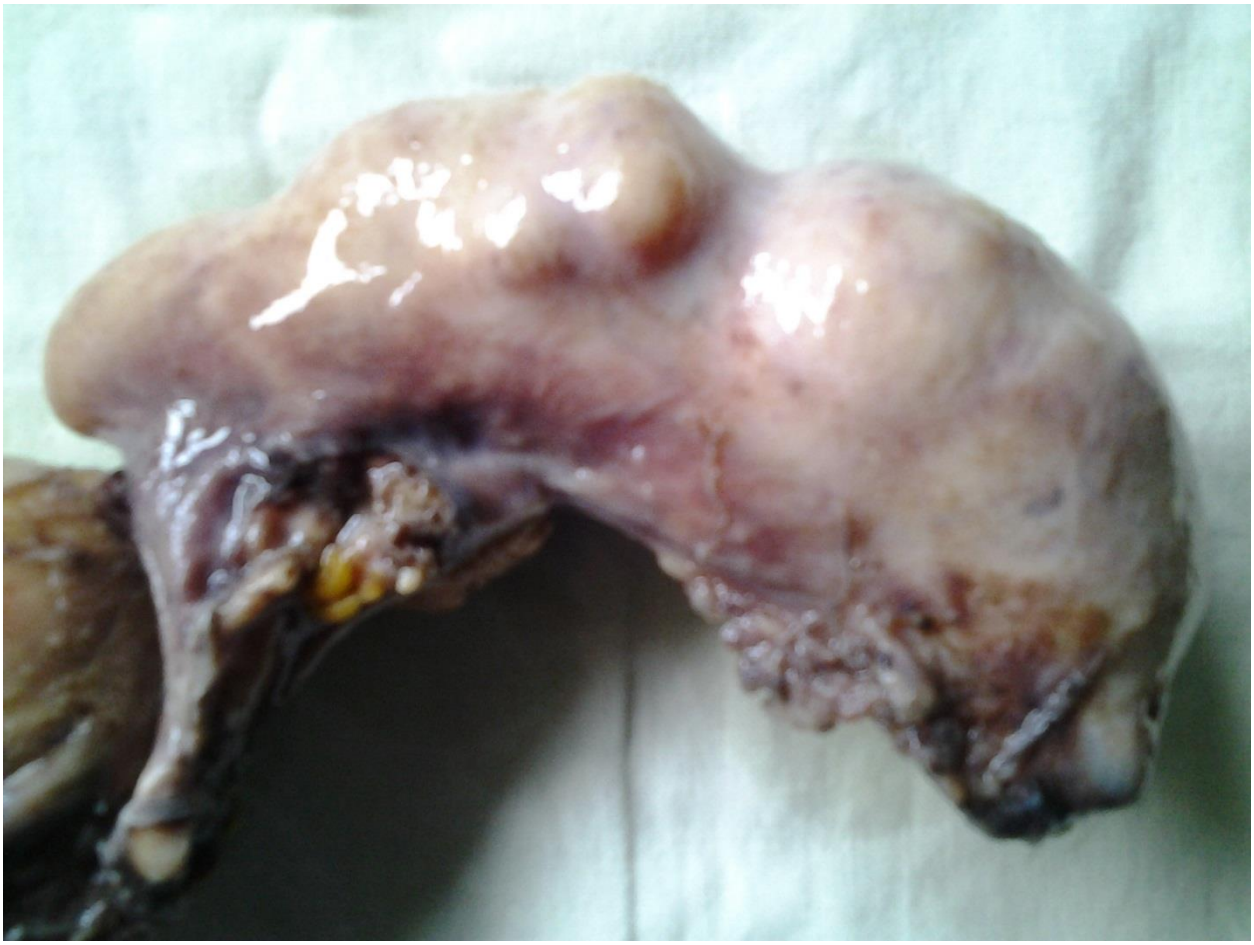
Radical hysterectomy, described by Wertheim's in 1898, is the standard surgical procedure for early-stage cancer of the cervix. It involved extensive dissection and removal of many tissues which included the uterus and upper third of the vagina with or without the ovaries, pelvic lymph nodes and parametrium where the cancer cells were presumed to have spread. The result of this was usually heavy bleeding with the attendant transfusion of many units of blood if the patient had to wake up from anesthesia. This became very relevant considering the unavailability of donated blood for transfusion in our environment. To avoid this distress that may accompany this form of treating early-stage cancer of the cervix, it is imperative to devise means of maximally reducing blood loss at such surgery.

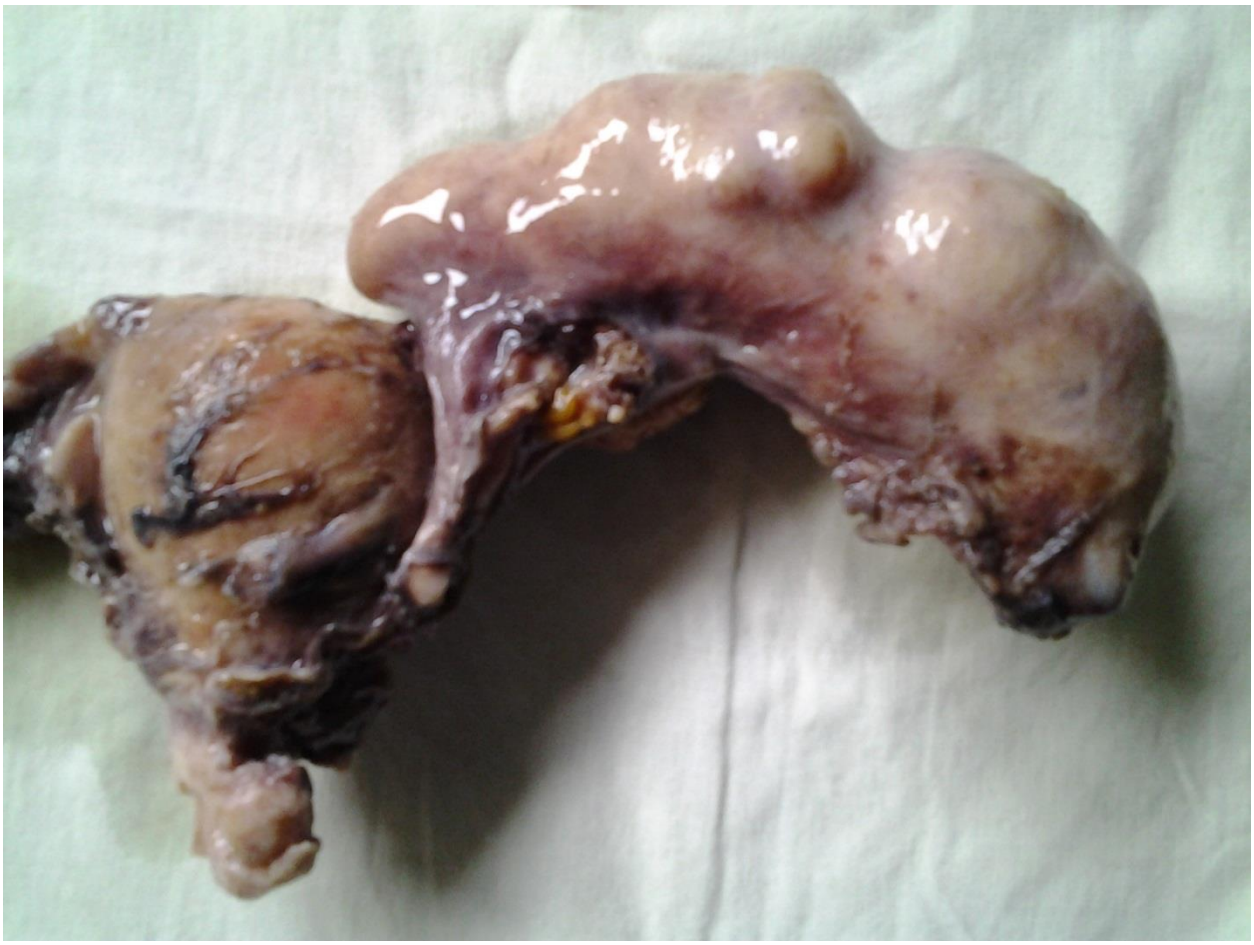
To minimize blood loss to the barest minimum during such procedure, surgery for the treatment of early-stage cancer of the cervix was modified by occluding the major blood supply to the structures to be removed without adverse effect on the remaining pelvic structures, such as the bladder and rectum. This procedure was internal iliac artery ligation that reduced blood loss during surgery to an insignificant amount with few affordable transfusion requirements as reported by Olatunji & Sule-Odu in 2006.

Radiotherapy which was equally effective in the treatment of early-stage cancers and the treatment of choice for the late stages were only sparingly available, didn't function most of the time and was very expensive as against in the developed countries where it is readily available, always functional and free for the citizens and normal residents. Though the provision of radiotherapy facility is capital intensive, it is life-saving and should be made available in as many tertiary hospitals as possible for easy access by cancer of the cervix patients and prevent traveling to foreign countries for the same treatment.
Mr. Vice Chancellor Sir, in as much as the cervical cancer, can be prevented, it is not so for cancers of other parts of the reproductive organs which are hidden inside the abdomen. These included ovarian and fallopian tube cancers. They presented at advanced stages because their assessment in early stages were

difficult and inaccurate.

This was exemplified by a case of Primary Fallopian Tube Carcinoma reported in a 54 yr old who was asymptomatic except for loss of weight which she did not take seriously until the cancer had spread to the lymph nodes in the groin via the attachment of the round ligament to the uterus.





Though she had surgery, but because of the spread of the cancer to various other parts, survival was very poor. She died shortly after. (Olatunji, Oluwole and Andu, 2016).

The best way to prevent this kind of occurrence is not to take any change in body habitus for granted by reporting for consultation especially to the gynaecologist as soon as it is observed.

REPRODUCTIVE FAILURES

Mr. Vice Chancellor Sir, reproductive failure is another bane of reproductive function in the woman.

The primary function of the human female reproductive system as implied is to produce offspring of the human race. This it does with the assistance of the male partner who produces the spermatozoa in the semen released into the vagina

during sexual intercourse. The spermatozoa then pass through the patent reproductive tract which includes the cervix, uterine cavity, and fallopian tubes.

Many times there is failure of this function when it is referred to as infertility. This is defined precisely as the inability of a couple to achieve conception after a year of regular unprotected intercourse. It is primary when pregnancy had never been achieved or secondary after one or more previous pregnancies irrespective of the outcome.

In a study conducted by Olatunji and Sule-Odu in 2003, out of one thousand and twelve (1,012) patients that attended the outpatient clinics in our hospital, one hundred and fifty (150) couples presented because of failure to achieve pregnancy after a period of two to five (2-5) years of marriage giving a prevalence of about 15 per cent. This was quite a significant proportion bearing in mind the importance attached to childbearing in our society.

Fertilization takes place in the fallopian tube and the embryo thus formed is transported to the cavity of the uterus for attachment and further development until labor sets in at term (37-42 weeks), for the baby to be delivered either vaginally or abdominally as the case may be.

As mentioned earlier, three essential conditions that must be fulfilled by a couple in order to achieve pregnancy are:

1. Normal Semen produced by the male containing adequate, structurally and functionally normal motile spermatozoa in several millions.
2. Normal egg produced by the ovary in the female.
3. Patent genital tract in both males and females necessary for transporting and meeting of the gametes.

To ascertain the above conditions required an appropriate investigation of both males and females. Male investigation was cheap, easy to carry out and not invasive, but men in most of the cases refused being investigated because as long as a form of fluid came in form of ejaculation, whether it contained inadequate or no spermatozoa was considered to be normal.

This was found out in a study by Olatunji & Sule-Odu 2008 when only two thirds (67.5 percent) of the male partner of the infertile couples carried out the investigations as requested. The remaining one third (32.5 percent) refused to be investigated on the premise that they either have recently impregnated their girlfriends, other wives or simply that nothing was wrong with them since they were able to produce semen at intercourse even if it was blank.

Of the 56 (67.5 percent) that had the test done, about half of them (48.2 percent) had unsatisfactory results and 8.9 percent had no spermatozoon at all in their semen and would not have been able to fertilize the female egg under natural conditions (Olatunji, 2012). From this finding, it is established that in cases of infertility, men are equally contributory to the causes as the female and male should subject themselves for investigation not minding the production of semen at intercourse.

On the contrary, the female partners were always willing and eager to be investigated in order to identify and solve the problem because not able to achieve pregnancy by a couple is usually attributed to faults in the woman both by the husband and in-laws who sometimes threaten to marry another wife for the husband. This usually did not go down well with the wife and will do anything humanly possible to achieve pregnancy and maintain the status of being the only wife of her husband.

Major causes that were identified to be responsible for infertility in the females were blockage of the fallopian tubes and failure to ovulate. Blockage of the tubes was found to be the cause in about half of the females (50.6 percent), Olatunji & Sule-Odu, 2003). Previous unsafely induced abortion and sexually transmitted infections were the most common predisposition to tubal blockage in the study. Induced abortion was found to be more than twice as common in patients with tubal blockage compared with those without previous abortion (82.9% against 38.1%). This correlates well with the fact that inducing abortion with all its complications resulting in tubal blockage was most common among females who were not able to get pregnant after marriage as their proportion constituted more than half (56.6%).

The implication of this was that the ladies who eventually got married had unwanted pregnancies as spinsters, sought termination clandestinely since abortion was and is still illegal in the country and resulted in various complications including tubal blockage manifesting as infertility after marriage. In the developed countries, especially in Great Britain, abortion is liberalized and backed by Act of Parliament. This is not the case in Nigeria and getting a similar bill passed by our National Assembly will be a herculean task considering the diverse opinion for and against abortion by religious, cultural human rights and moralists in the Country. Until such a Bill to support abortion is passed and signed into law, it remains a criminal offence and the option left is to prevent unwanted pregnancy by the various methods to be enumerated shortly
Sexually transmitted infections in both sexes resulted in destruction of the sperm-producing cells and transport system in the male and blockage of the fallopian tubes in the female
When these structures are damaged, correction in both males and females have very limited successes by all forms of treatments including assisted reproductive techniques which apart from the limited success, are very expensive making it out of reach of ordinary couple.
Mr. Vice Chancellor Sir, the main advice will be to prevent these situations by either avoiding sexual intercourse until marriage, stick to only your wife after marriage or better still, prevent unwanted pregnancies in the married couple by the use of appropriate contraceptive methods.

Haven said these, because of the situation that prevails nowadays where promiscuity is common and far from encouraging such but only being realistic, if it has to happen, kindly prevent both unwanted pregnancy and sexually transmitted infections by generous use of protective condoms.

COMPLICATIONS DURING PREGNANCY.
Mr. Vice Chancellor Sir, after achieving pregnancy, the journey of reproduction has just started and could be accompanied by avoidable complications some of which will be highlighted as found in the course of my research and clinical practice.

Eclampsia

Eclampsia, defined as proteinuric hypertensive disease of pregnancy with tonic-clonic convulsion is one of the bane of reproductive functions of the woman. It is usually preceded by hypertension and proteinuria in the second half of the forty (40) week pregnancy when it is referred to as pre-eclampsia. During routine antenatal care, blood pressure measurement and urine check for the presence of protein which normally should be absent or in traces are usually carried out. When there is no proper antenatal care, these symptoms and signs will be missed in all the patients including those that are hypertensive. This will result in the hypertensive patients presenting at home or in other inappropriate health facility including Traditional Birth Attendants (TBAs) places with tonic-clonic convulsion in addition to the hypertension and presence of protein in the urine at advanced pregnancy or within a few days after delivery. Hence, this condition was mostly seen in pregnant women who did not book for proper antenatal care in approved hospitals as evidenced by the finding of ninety (90) out of the ninety-three (93), 96.8 percent of cases reported by Olatunji and Sule-Odu, 2007 not to have booked in any health facility. It is recommended that all pregnant women should register in well-equipped hospital for ante-natal care, delivery, and care after delivery.

This disease process which etiology has not yet been adequately elucidated was most commonly found in women that were pregnant for the first time, 74 out of 93 patients (79.6%), or in those that have changed their husbands. They were about twenty-five times at risk compared with subsequent pregnancies or those that were pregnant for the same husband. Before, during and after the convulsion, many complications occurred that ultimately led to maternal death. Among these were bleeding into the brain from the hypertension, inability of the blood to clot with subsequent severe bleeding after delivery, aspiration of stomach content and materials introduced into the mouth by the relatives during convulsion. Individual or combination of these complications were present in 62 out of 93 (66.7 percent) cases reviewed which ultimately led to the death of nineteen (20.4 percent) of them.

The causes of maternal deaths in the cases reviewed were aspiration pneumonitis, puerperal sepsis and cerebrovascular hemorrhage in 26.3, 26.3 and 31.6 per cents respectively, Olatunji & Sule-Odu (2006).

These complications and deaths could have been averted by simply booking in properly equipped hospital with qualified obstetricians, where checking of blood pressure and the urine for protein during ante-natal care would have been carried

out, with detection and subsequent early treatment of the condition to have saved the mother and her baby. It is therefore imperative that provision of proper antenatal care, delivery, and post-natal care is necessary for all pregnant women in order to avoid this Bane of the reproductive function in the woman.

Ruptured Uterus

Mr. Vice Chancellor Sir, another bane of women that reproductive function produces is rupture of the pregnant uterus especially in patients that had been previously delivered by Cesarean section and subsequently wanted to deliver herself vaginally in an unsupervised health facility or when the baby presented in an abnormal way in the uterus during labor, was too big to be delivered vaginally or when unconventional method such as pressure on the uterus via the abdomen to achieve vaginal delivery was applied. All these took place in an inappropriate unacceptable environment.

Uterine rupture occurred due to aversion of our women to being delivered by caesarean section despite obvious indications for the procedure. This was borne out of the belief that to be so delivered was abnormal and dangerous. With the current expertise and facilities available in a properly equipped hospital, the risk from caesarean section is not as much as it used to be. When the uterus ruptured, the baby is extruded into the abdominal cavity and dies immediately. The uterus will start to bleed also into the abdomen, the degree depending on the extent and area of the rupture. If urgent action is not taken by quickly opening the abdomen to carry out the necessary surgery, the woman may die as occurred in 40% of the cases reviewed by Olatunji, Sule-Odu & Adefuye, in (2002) because they were referred in extreme conditions when little or nothing could be done to salvage the situation

The contribution of this to maternal death ranged between 7.7 and 25.0 percent from earlier studies by Olatunji & Abudu, 1996 & Olatunji & Sule-Odu, 2001 and when the uterus ruptured, the chance of the patent dying was about 40 percent, Olatunji, Sule-Odu, Adefuye .2002.

Maternal Mortality

Mr. Vice Chancellor Sir, the ultimate price a woman sometimes pays for attempting to propagate the human race was maternal death and this is a major bane of reproductive function of the woman. Maternal death or mortality is defined as death of a pregnant woman during pregnancy, childbirth or within forty-two (42) days of termination of the pregnancy, irrespective of the duration

and site of the pregnancy from causes related to or aggravated by pregnancy or its management excluding accidental or incidental causes. It is usually expressed for comparison, as the annual number of such deaths per 100,000 live births. This rate varies between countries and depends mainly on the levels of obstetric care facilities, level of education in the population and transportation systems available to the pregnant woman. It is least in Poland, Iceland, Greece, and Finland where it is 3/100,000 live births and single digits in most other European countries, where the ratio is between 4 and 9/100,000. The ratio is worst in Sierra-Leone with 1,360/100,000 for 2015. CIA Fact Book, January 2018. Nigeria is the fourth worst country in the world with a maternal mortality ratio of 814/100,000 life birth as at 2015, about 100 times the ratio in United Kingdom with 9/100,000, meaning that the risk of a pregnant woman dying in the developing countries is about 100 times that in the developed countries. This implied that there had been little or no improvement in the ratio reported by Olatunji & Abudu in 1996 and Olatunji & Sule-Odu in 2001 from Lagos University Teaching Hospital and Ogun State University Teaching Hospital, (now Olabisi Onabanjo University Teaching Hospital) where they were 852 &1700 per 100,000 live births respectively.

Distribution of obstetric maternal deaths according to booking status

Booking status	Maternal deaths	Deliveries	Ratio of maternal deaths to deliveries
Booked	7	3843(70.9%)	0.18
Unbooked	69	1580(29.1%)	4.37
Total	76	5423	-

Table i

The major predisposing factor to the pregnant woman dying was the fact that they were mostly not booked in proper hospitals where they would have had

adequate ante-natal, intrapartum and post-natal care to have prevented them from dying of complications of pregnancy. The patients were mostly un-booked, as evidenced by 90.8 percent belonging to this category in a review by Olatunji & Sule-Odu in 2001.
Leading causes of maternal deaths were ruptured uterus, eclampsia, and complications from induced abortion. These three causes made up about 62.4 and about 60 per cents of the total maternal deaths in the reviews by Olatunji & Abudu, 1999 and Olatunji & Sule-Odu 2001 respectively.

Others with the contributed proportions were as shown in the table below:

CAUSE OF DEATHS IN 221 MATERNAL DEATHS

	Causes of Death	N0. Of death	Percentage
1	Eclampsia	77	34.8
2	Abortion	44	19.9
3	Ectopic gestation	19	8.6
4	Post-partum Haemorrhage	19	8.6
5	Ruptured uterus	17	7.7
6	Puerperal sepsis	14	6.3
7	Medical condition	13	5.9
8	Anaesthetic	4	1.8
9	Trauma (gunshot)	1	0.5

Table,ii.

All the causes were preventable and would have been if adequate care with appropriate facilities in well-equipped hospitals had been made available to well-informed mothers at very low or no cost.
In the developed countries where maternal mortality ratios are in single digits per 100,000 live births, all pregnant women had proper ante-natal care, almost all deliveries were supervised by well trained and qualified personnel in well-equipped hospitals to deal with emergencies both in the ante, intra and postpartum periods.

In a few cases where delivery took place outside the hospital, Ambulances and personnel in the form of Emergency Obstetric Services were readily available with adequate resuscitation facilities while transiting to the hospital.
All these measures are capable of reducing the distress that is associated with the reproductive structure and function and all these measures are simple, affordable and are capable of reducing the Bane of reproductive process if our government is committed to safe motherhood.
Mr. Vice-Chancellor Sir, in my sojourn in the United Kingdom where almost 7,000 deliveries took place over four years, there was only one indirect maternal death due to ruptured berry aneurysm probably aggravated by the pregnancy state. Aside from eclampsia and ruptured uterus, other notable causes of maternal deaths were complications from induced abortion. Induced abortion unless medically indicated is illegal in the country (Nigeria). Because of its illegality, it is clandestinely carried out by unqualified personnel in an unclean environment using unsterile instruments. Complications from induced abortion contributed between 14.1 to 19.9% of maternal deaths in reviews of maternal deaths reported from Lagos and Sagamu by Olatunji & Abudu in 1996 and Olatunji & Sule-Odu in 2001 respectively and it is still a major contributor to maternal death as recently reported from other centers.
Complications as a result of this included severe bleeding from incomplete evacuation of the uterus, septicemia from the introduction of infective materials and damage to intra-abdominal structures like the intestine and a host of others. In an attempt to conceal this illegal act, the patients were brought to the hospital very late when little or nothing could have been done to save them.
In a few cases where treatment was able to salvage the situation, the poor women ended up with long term complications of total or partial fallopian tube blockage resulting in infertility or ectopic pregnancy as applicable after marriage.

As it has been pointed out earlier, all these risks and causes associated with maternal deaths were largely avoidable such that it could be reduced to the barest minimum comparable to what exists in the developed countries

Conclusion.

Mr. Vice-Chancellor Sir, it is a command in the scriptures as it is written in the Holy Bible book of Genesis Chapter 1, verses 27 & 28. 'So God created man in His own image, in the image of God, created he him, male and female created he them. And God blessed them, and God said unto them, Be fruitful and multiply and replenish the earth'.

It is thus established that reproduction is an act of God which must be fulfilled. This should be fulfilled simply, joyfully and with extreme safety if i. all our women are well educated especially on the importance of hospital care at all times. ii. Adequate obstetric facilities for antenatal, intrapartum and postnatal surveillance and care are made available at LITTLE OR NO COST with good transport system. Also, diseases that affect the structures that bear forth the children, previously regarded as private can both be prevented or cured if medical attention is sought regularly and made available at all times to the gynaecologist for screening, examination, and treatment at very early stage. With the above, the reproductive structure will be well protected in a very healthy and attractive state and pregnancy will be nothing but something to be looked forward to with no or minimal discomfort.

That has been my journey so, but currently, I belong to a group that is trying to establish an Oncology Center in Obafemi Awolowo College of Health Sciences of the University. The group comprises of clinicians, pharmacists, basic medical and natural scientists. The aim is to research into various aspects of cancers, gynaecologic included and hopefully obtain results that will be of immense benefit to the university, the country, and the world at large.

Recommendations

Mr. Vice-Chancellor Sir, to reduce the bane associated with the reproductive structure and function, I hereby make the following recommendations:
1. Universal reproductive health education for both sexes at an early age to avoid some conditions that may adversely affect the reproductive structures.
2. Availability of screening methods for ailments that may affect the reproductive structures in order to prevent or detect them at early onset with the purpose of cure.
3. Seeking gynaecological consultation as soon as changes occur in the so-called private and other parts of the body.
4. Avoid unwanted pregnancies and sexually transmitted infections by either abstinence until marriage as it was in the past or use appropriate protective and contraceptive devices where that is not feasible.
5. To avoid unnecessary stress of going to Sagamu, it will be a welcome development if the University can train some of the Nurses working at the University Health Centre so that they can be carrying out the screening for all the females on campus, both students and staff.
6. Antenatal care, delivery, and postnatal care should be made free for all pregnant women in well-equipped hospitals with proper and adequate blood transfusion system, analgesia and anaesthesia and well-trained personnel. Above all, since labour could start at any time of the day and anywhere, the ambulance system with good communication in terms of telephones and roads should be well developed as it is exemplified by the Emergency Obstetrics Services in the developed countries.

Acknowledgment

I give all glory and honor to God Almighty that has given me the opportunity to stand before this audience today as a Professor of Obstetrics and Gynaecology delivering an inaugural lecture. It is unimaginable going by my background which is well known to everybody from my family both nuclear and extended and people from my town, Okeigbo in Ondo State. It is a very long story and very rough but all is well that ends well.
I must say that it may not be possible to mention the names of those who deserve my gratitude within the remaining minutes. All those that have contributed in one way or the other should accept my thanks and gratitude for their parts in my upbringing, my career, and modest achievements. All my friends, patients, well-wishers, relatives and neighbours that I will not be able to mention individually are well appreciated and I thank you all for coming to honour me with your presence. The Grace of our Lord Jesus Christ will continue to be with you all the days of your life and you shall dwell in the house of the Lord forever. I am grateful to my teachers from primary school, secondary modern school both at Okeigbo, my secondary school, Loyola College in Ibadan. All Loyola boys here present are well recognized and appreciated. I am particularly indebted to Mr. Peter Olu Olaofe, my Secondary Modern School Headmaster, who despite the fact that I was unable to pay school fees for three years, allowed me to remain in school without which it would have been impossible for me to have continued my education when my brother came back from his self-sponsored education in Britain to take over my sponsorship. I am eternally grateful.

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All Senate members that we fellowship together at each Senate meeting, you are wonderful and I thank you all.

I appreciate all the members of the University Governing Council where I represent the Senate. It's been a brilliant experience and I have learned a lot from all members especially the Banker (the Council Chairperson) and the Accountants, Prince Bunmi Solarin and Mr. Laolu Olabimtan. I will try to practice at home the accounting experience I have gained from you both.

To Prof. Saburi Adejimi Adesanya, the immediate past Vice-Chancellor, an erudite scholar and administrator per excellence, a great achiever and respecter for rule of law, I say a very big thank you for all I learned actively and passively while I served as Dean, Faculty of Clinical Sciences during your tenure.

The current Vice-Chancellor, Prof. Ganiyu Olatunji Olatunde since assumption of office and with due respect to the office of Vice-Chancellor, had been a friend, amiable, humble, focused and a respecter of time in addition to many other good qualities too numerous to mention. Allah will continue to guide you in the administration of the University. Ihdinah Sirat al mustakim. I appreciate you, sir. All other Principal Officers of the University are well appreciated. To my siblings both late and alive I say big thanks to you all. Though we might have had it rough together we give thanks to God for keeping those of us alive and pray that the souls of the departed continue to rest in peace. Messrs.' Ewuola, Adeyemo, Oladejo (in USA), their wives and Mrs. Omolara Ogunniran and her husband, you

have all been wonderful and I appreciate you all**.** My other half-sisters, cousins, half brothers and sisters here present are well recognized, Chief Oladoyin and others, Arike, Abayo, and Owolabi, Ajibade, Iyiola, Kolawole, Oriyomi and Adekunle, you have all been source of joy to the entire family. Members of my club, the Rokars from my town including our President, Chief Oye Babalola, Chief (Dr.) Bolu Adeboye, Messrs. Ibikunle, Ogungbemi, Adetoye, Ojetayo, Abimbola, Adegbaju and Owojori.

I am grateful to my father for all his advice, gifts, prayers and love he showed to me during his lifetime. May his soul, rest in perfect peace.

To Academic Staff Union of Universities (ASUU), the most disciplined, organized and principled Union in the country, I will always be loyal to the Union.

My Parish in my town, St Luke's Anglican Church, Venerable Albert Aderemi Memorial Church in Okeigbo and Emmanuel Anglican Church, Sagamu, I appreciate all the Ministers and the Congregation. The Lord will continue to be with you all. My mother was one in a million. She was a mother, my mother. Even though she was illiterate, she made sure that as many of us as possible were educated as much as she could afford with her petty trading. Her contributions, though cannot be qualified or quantified enough was summarized in the dedication of my Dissertation submitted to the Faculty of Health Sciences, University of Ife (now Obafemi Awolowo University) in 1978 in partial fulfillment for the award of the degree of Bachelor of Science (Health Sciences). It read thus:

Dedicated to my mother

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Last but not the least is to appreciate my wife, Omobolanle Adetutu Olatunji, Nee Agbabiaka. Mr. Vice Chancellor Sir, please permit me to quote a verse from the Holy Bible as written in the Book of Proverbs, Chapter 18, verse 22 and I quote 'Whoso findeth a wife findeth a good thing and obtaineth favour of the LORD'. I found not just a wife, but a good wife and I obtained the favour of the Lord. You have and still, make me happy. You have all the qualities of a good wife. You are accommodating, caring, and concerned, cooperative, enduring, hardworking, humble, understanding and above all, you are loving and lovely. I have been blessed by you being my wife, sister, companion and my mother since her demise almost thirty years ago. I will always appreciate and love you. I have finished this lecture and I will stop. I thank you most sincerely for coming, listening and wish you journey mercies back to your various destinations. Thank you and God bless.

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