UNIVERSITY OF ILORIN

THE TWO HUNDRED AND FORTY-THIRD (243RD) INAUGURAL LECTURE

"THE LEAKING PIPES AS AVOIDABLE TRAGEDY OF WOMANHOOD: THE ODYSSEY OF A FISTULA SURGEON"

By

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My Lords Spiritual and Temporal,
The Royal Fathers of the Day,
Member of my Nuclear and Extended Family,
Distinguished Invited Guests,
Gentlemen of the Press,
Students of the College of Health Sciences,
Great students of the University of Ilorin,
Distinguished Ladies and Gentlemen.

Introduction

In the name of God, the most beneficent and most merciful, to whom I give all the praise and adoration. I acknowledge his help in making it possible for me to stand before you today 12th October, 2023 to present my inaugural lecture titled "The Leaking Pipes as Avoidable Tragedy of Womanhood: The Odyssey of a Fistula Surgeon".

After the inaugural lecture of one of my teachers, Professor Aboyeji A.P., a lot of my colleagues and friends have predicted that my inaugural lecture is around the corner, and firm conjectures of which direction were already made. My response has been that there are many dimensions to the Aboyeji and Ijaiya collaborations.

Mr. Vice-Chancellor, it is my pleasure to profess the surgical management of Obstetric Fistula and discuss my research work on some general Obstetric and Gynaecological conditions to this wonderful audience that consists of both town and gown. Since the launch of the Safe Motherhood Initiative in 1987, experts at several international fora have agreed that the problems of maternal mortality and morbidity need to be addressed urgently. However, it was not until 2000 that Maternal Health came to the centre stage in global health and captured the attention of global policymakers after decades of taking a backseat to other more visible global health problems. Improving Maternal Health was designated as Millennium Development Goal 5 (MDG 5) and now contributes to Sustainable Development Goal 3 (SDG 3). Obstetric Fistula is a pregnancy-related disability that has been overlooked over the years. It has long been an unspoken and neglected problem, but it is now garnering some awareness.

Obstetric Fistula

Obstetric Fistula (OF) is an abnormal connection between the vagina and urinary bladder (vesicovaginal fistula) and/or between the vagina and rectum (rectovaginal fistula), which may develop after prolonged obstructed labour and its complications, which lead to continuous urinary or faecal leakage. In other words, a vesicovaginal fistula (VVF) is a hole that connects the urinary bladder (part of the body that stores urine) and vagina, while a rectovaginal fistula (RVF) occurs when the rectum (part of the body that stores feaces) is connected to the vaginal cavity by a hole (Figs. 1 & 2). A fistula surgeon is a physician who is proficient in the surgical management of vesicovaginal and rectovaginal fistulas.

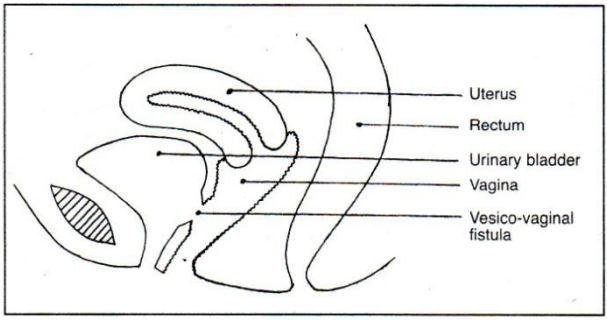

Figure 1: Diagram demonstrating vesico-vaginal fistula (VVF). (**Ijaiya**, 2002).

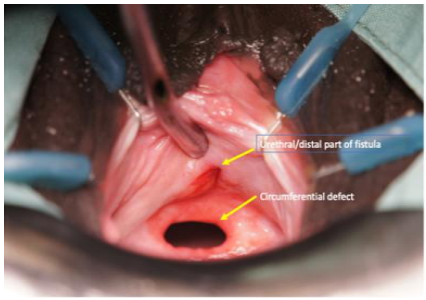

Figure 2: Vesicovaginal Fistula. Adapted from Goh (2020)

Obstructed labour occurs when the leading part of the fetus in the maternal pelvis fails to descend despite strong uterine contraction as a result of a mechanical factor that requires medical intervention (Roa, Cadell, Ganyaglo G et al. 2020) and accounts for 6–8% of global maternal deaths **(Ijaiya**, Aboyeji 2000 and WHO 2018).

My Journey in the Care of Fistula Patients

My interest in fistula care dates back to my medical school days in Ahmadu Bello University Teaching Hospital, Zaria, during Part IV (500 level) Obstetrics and Gynaecology posting in 1987/1988. Prof. Ekwempu C.C, Dr. Emembolu J.O,

and Prof. Oladapo Shittu were the few fistula surgeons available to take care of the numerous fistula patients waiting for fistula repair. Before then, Zaria had great fistula surgeons such as Prof. (Mrs.) Lister, Dr. Lawson J.B, Prof. Harrison K.A, and Dr. (Mrs.) Caffrey, among others. Zaria has a high prevalence of VVF due to early marriage and child pregnancy, gishiri cut (incision made on the anterior vaginal wall by Hausa traditional health practitioners to relieve obstructed labour, treat infertility, or amenorrhea), and a high rate of poorly supervised delivery. That was when I decided that I would be a gynaecologist with an interest in fistula surgery to reduce the backlog of fistula cases and contribute to the elimination of obstetric fistulas in Nigeria.

In 1998, I went to the Babbar Ruga fistula hospital, Katsina and Laure fistula centre, Murtala specialist Hospital, Kano for Postgraduate training in fistula repair under Dr. KeesWaaldjik, an orthopaedic surgeon who came to Nigeria primarily to manage leprosy patients with deformities and later became a renowned fistula surgeon. He had operated on over 10,000 fistula cases. While I was in Katsina for training, Prof. Balogun O.R. had a case of VVF that required repair. Immediately after returning to the hospital, Prof. Balogun O.R. welcomed me with the patient and scheduled her for surgery. I reviewed the patient and took her to the theatre for VVF repair as a senior registrar. The surgery was successful, and the patient was continent of urine. This marked the beginning of my VVF repair surgeries. I am grateful to Prof. Balogun for the challenge and confidence he reposed in me. Although many people have received training in fistula surgery, very few are courageous enough to perform the procedure.

Fistula repair is a difficult surgery to perform because of the awkward location of the fistula, narrowness of the vagina, limited space, and poor accessibility to the defect. Let me use this opportunity to acknowledge the versatility of Prof. Momoh Anate's surgical skills, including fistula repair (May his soul rest in peace).

Marion J. Sims was regarded as the father of modern gynaecology and performed his first successful fistula surgery after his 30th attempt in 1849 **(Ijaiya** 2004**).** He was the surgeon

who popularised fistula repair and the inventor of Sim's speculum, Sim's needle holder, and Sim's position, among others.

Mr. Vice Chancellor, in 2004, barely five years after becoming a consultant, I invented a surgical procedure for a rare and difficult juxtacervical VVF involving the anterior lip of the cervix where the posterior lip of the cervix was used for fistula closure, named after me, M. Ijaiya's technique. It was patented and published in one of the world's topmost UrogynaecologyJournals **(Ijaiya**, 2004), *the International Urogynaecology Journal.*

Thereafter, I went for further studies to broaden my knowledge and skills in urogynaecology, reproductive health and research. In 2007, I was at the Liverpool school of Tropical medicine for diploma in reproductive health in developing countries as a Royal college of Obstetricians & Gynaecologists scholar. I also undertook several clinical attachments in Urogynaecology at various world-class facilities, including King's College Hospital, London, under Prof. Linda Cardozo, a world-renowned Urogynaecologist, at Mayday University Teaching Hospital, Croydon, UK, under Dr. Abdul Sultan and Dr. Ms. Ranee Thakar (the duo are the leading Obstetric Anal Sphincter injury repair surgeons in the UK); and Southwest Hospital of third military medical university, Chongqing, China, for clinical operation of urodynamic system. In 2015, I had a training in research methods course in sexual and reproductive health, HIV, and gender-based violence at Wits Reproductive Health Institutes, University of the Witwatersrand, Johannesburg, RSA (Ford Foundation scholar awardee), and training in global clinical scholar research at Harvard Medical School, Boston, USA (Harvard Medical School scholar 2019/2020), and became a Harvard certified clinical researcher. In addition, I hold a Master's degree in public health and a Doctor of Medicine.

I have performed numerous successful fistula repairs at the University of Ilorin Teaching Hospital and some tertiary health facilities in other Northern States of the country, namely

Federal Medical Centre, Gusau; Federal Medical Centre Bida; and Modibo Adamawa University teaching hospital, Yola. For most of the repairs, I used the vaginal route with the patient in the lithotomy position (Fig. 3) or genupectoral position (knee chest position) occasionally, and sometimes I go through the abdomen for better accessibility to the fistula when repair through the vaginal route will be difficult. Over time, I have perfected the skill of fistula repair, as evidenced by a marked reduction in surgery time and a near 100% success rate in recent years, irrespective of the complexity of the fistula. In addition to fistula repair, I also perform other Urogynaecological surgeries, such as Vaginoplasty with or without pudendal pedicle, in collaboration with plastic surgeons, Obstetric anal sphincter injury repair (OASIS), Pelvic organ prolapse surgeries including Abdominal sacrocolpopexy for vault prolapse, and the Marshal Marchetti-Kranz procedure for stress incontinence complicating VVF repair, to mention but a few.

Figure 3: Fistula surgeon (**Prof. Ijaiya, M.A**) and his team repairing a VVF at the University of Ilorin teaching hospital, Ilorin, Nigeria. (**Ijaiya**, 2015).

History of Obstetric Fistula

Obstetric fistula is as old as womanhood. It dates from antiquity: an Egyptian mummy dating to about 2000 BC was found to have a large VVF. The cause of this miserable condition is related to procreation. As powerful as nature is, sometimes it

fails to perform her greatest work and art of seamless delivery, either because help arrives too late or because it demonstrates its full incompetence. Avicenna (an Arabian physician) was the first to document the relationship between obstructed labour and VVF in the 11th century (Wall 2018 and Kolloc, 1857).An estimated 2-5% of women who have prolonged obstructed labour will develop obstetric fistula (Engender health 2019).

Cephalopelvic disproportion occurs when the baby's (fetal) head is larger than the mother's pelvis during labour. If this complication of labour is missed and labour continues without the assistance of a trained birth attendant, it results in prolonged obstructed labour. The mother's pelvic soft tissues (urinary bladder and upper part of urethra) are compressed against the hard, bony pubic symphysis when the baby's head is impacted (fig.4). Subsequently, the tissues are devitalised and damaged, with subsequent sloughing off of the necrotic tissues. Thereafter, a hole is created connecting the bladder and vagina (vesicovaginal fistula), with or without an opening connecting the rectum and vagina (rectovaginal fistula).

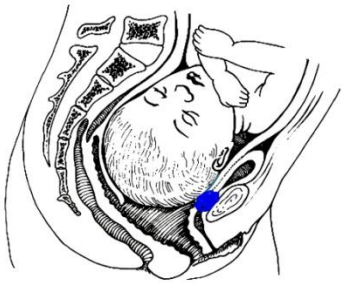

Figure 4: Demonstrates area of pressure necrosis in OF. Adapted from Hancock (2018).

VVF was thought incurable until, in 1675, when Johann Fatio performed the first successful repair using the Van Roohause technique described in 1663.Marion Sims (Fig.5) developed the first consistently successful surgical technique for the repair of obstetric vesicovaginal fistula on a group of young,

enslaved African American women between 1846 and 1849. The procedures conformed to the ethical requirements of the early 19th century. Marion Sims teaching was "to close every vesicovaginal fistula whenever it was possible to bring the edges of the opening together free of tension". His teaching is still relevant to the current principles of fistula repair. This was a remarkable achievement, and it led, over time, to the development of reconstructive pelvic surgery as a surgical specialty (Wall, 2018, and Kolloc 1857).

Sims popularized VVF repair and is revered as the greatest of all VVF surgeons. Other VVF surgeons who contributed immensely to the development of fistula surgery include Trendenburg, Schuchardt, Kelly, Hendrick Martius, and Chassar Moir. In Africa, the names of Reginald Hamlin, Catherine Nicholson, John Lawson, Sister Ann Ward, Kees Waaldijk, Oladosu Ojengbede, and Andrew Browning are worth mentioning (**Ijaiya,** 2002).

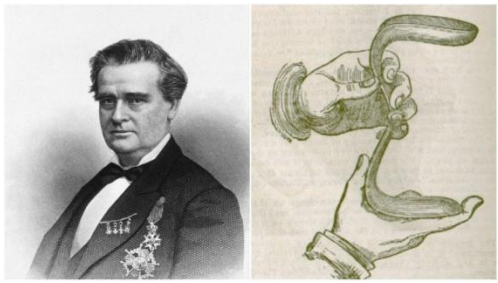

Figure 5: Marion J, Sims and sim's speculum. Culled from Vintage News (2018).

Global View of Obstetric Fistula

There is a wide disparity in the incidence and prevalence of Obstetric Fistula between industrialized and developing countries. It rarely occurs in industrialised countries as a result of efficient and effective maternity services. Most cases of Obstetric Fistulae occur in developing countries of the world that have a high maternal mortality ratio. Obstetric Fistula is confined

to the "fistula belt" across the Northern part of sub-Saharan Africa from Mauritania to Eritrea and in the developing countries of the Middle East and Asia (Fig. 6). The global incidence of OF is 1–2%, with 50,000–100,000 new cases occurring annually and an estimated 2 million people living with fistula (**Ijaiya,** 2020; Bulni, Ireson, Adama, et al 2022). The Obstetric Fistula cases are underreported because the majority of the cases are not accessible because they occur in remote areas, outside health facilities, and are ostracised (**Ijaiya**, 2020). Although the methodology for the above-quoted figures has been challenged. In fact, Adler, Ronsmans, Calvert, et al., (2013) carried out a systematic review and meta-analysis that included population-based studies and reported a pooled prevalence of 0.29 fistula per 1000 women of reproductive age. Regionally, the sub-Saharan Africa and South Asia had 1.60 and 1.20 fistula per 1000 women of reproductive age. Regionally, sub-Saharan Africa and South Asia had 1.60 and 1.20 fistulas per 1000 women of reproductive age, respectively. In contrast, an estimated annual incidence of 250 cases of VVF occurs per year in the whole of England and Wales, which are entirely of non-obstetric origin. In Ethiopia, an average of 2000 women had fistula surgery between 2010 and 2013 (Meikena, Bihon, and Serka, 2023).

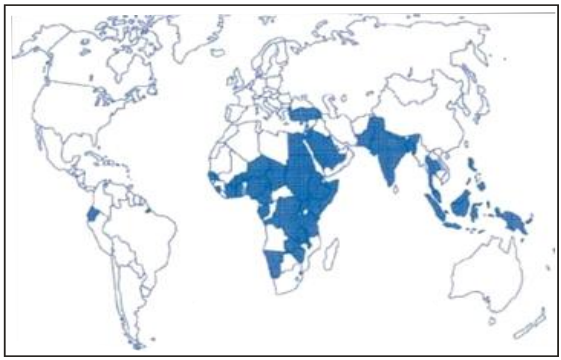

Figure 6: World map of obstetric fistula. (WHO, 2014).

Nigerian Experience of VVF

VVF is prevalent in Nigeria. The true incidence and prevalence of this condition are unknown and impossible to obtain since the areas with high overall prevalence are those where cases are unknown to medical services and have poor general epidemiological data collection. The annual obstetric fistula incidence for Nigeria has been estimated at 2.11 per 1,000 deliveries. An estimated 150,000 Nigerian women are living with VVF and 12,000 new cases occur annually (FMOH NSFEOF 2019-2023). Contrary to the widely held belief among Nigerians that VVF is a disease of Northern Nigeria, available data reveals that Northern Nigeria, Akwa Ibom, and Ebonyi States in the South of Nigeria have the highest occurrences of VVF. The variations in rates could be due to geographical differences in the risk factor distribution. The social class of the woman, poverty, illiteracy, ignorance, the availability and utilization of emergency obstetric care, skilled birth attendance, and the strong cultural opposition to cesarean deliveries are some of these determinants (FMOH 2006).

Ijaiya, Rahman, Aboyeji, et al., (2012), reviewed six Nigerian studies on VVF which cut across the Northern and Southern parts of the country and found that many of the obstetric fistula patients from the Northern part of Nigeria are teenagers. The lowest age of patients with OF is 10 years, as reported in Kano (Kabir, Iliyasu, Abubakar et al. (2004).The average ages of the VVF patients from northern Nigeria are 13 years for Sokoto and 17.5 years for Maiduguri, while the mean ages for patients from Port Harcourt and Sagamu are 26.8 years and 30.2 years, respectively. The average age of VVF patients in Ilorin is 29.3 years. There is a marked difference in the age of marriage in the different regions of Nigeria. Early marriage is commonly practiced in the Northern part of Nigeria, and sometimes girls are given out in marriage before or shortly after attaining menarche (age of first menses). Besides, most of the patients are not aware of contraception, talk-less of using it. Early marriage without contraception is invariably followed by

pregnancy, at a time when the pelvis is not developed enough for easy passage of the fetus through the maternal pelvis, leading to cephalopelvic disproportion, obstructed labour, and its sequelae, including obstetric fistula.

Most VVF patients are primipara (first delivery experience) and non-literate from poor homes. Obstructed labour is the most common cause of VVF in Nigeria and most other developing countries, while in industrialized countries, hysterectomy is the most common cause. These observations made by Lawson about five decades ago are still very much the same today (Odusoga, Oloyede, Fakoya, et al. 2001. and **Ijaiya**, Rahman, Aboyeji et al. 2010). Other common causes of VVF include uterine rupture, caesarean section, advanced cervical cancer, and Gishiri cut, which is peculiar to the Hausa people of northern Nigeria.

The majority of Nigerian Obstetric Fistula patients either delivered at home and had unsupervised labour and delivery or attempted to deliver at home and eventually presented late to a health facility when labour had been obstructed for a long time. In Northern Nigeria, a woman cannot make the decision to go to a health facility if her husband is not at home. There is a strong belief that women's movements must be under strict male control, and permission from a husband or a suitable male surrogate must be obtained before money can be spent on health care. This is the most common cause of delay in seeking care in obstructed labour that resulted in a vesicovaginal fistula in Jos (Wall, Karshima, Kirschner et al 2004). The other causes of delay include delays in transporting patients to health facilities and delays in receiving prompt treatment at the facilities.

Most vesicovaginal fistula patients suffer from unnecessary and avoidable psychological complications such as loss of self-esteem, divorce or separation, and depression. Most patients cannot work or attend social gatherings because of the smell of urine. The patients' husbands and sometimes their families desert the patients because the urine odour makes them socially unacceptable. It is believed they have brought shame

and dishonor to their families. Therefore, they are shunned by society and eventually become social outcasts. Despite successful fistula repair, some of the patients cannot enjoy a happy marital life because of dyspareunia (painful sex) from vaginal stenosis or infertility. In Ethiopia, 40% of fistula survivors seriously consider suicide (Meikena, Bihon, and Serka, 2023). Ayadi, Obore, Kirya, et al (2023) also recorded a high psychiatry morbidity among Ugandan fistula clients. Therefore, VVF is regarded as the most devastating and dehumanizing condition to afflict women. Another tragic event associated with the VVF - Obstructed labour complex in Nigeria is adverse fetal outcome, which comprises a high stillbirth rate of 75%–92%, high birth asphyxia, neonatal sepsis, and neonatal mortality. Overall fistula repair success rates are 92%, 75%, 87.9%, and 91.5% for Jos, Port Harcourt, Ilorin, and Ile-Ife, respectively (**Ijaiya,** Rahman, Aboyeji, et al., 2012).

Posterior cervical lip for juxtacervical vesicovaginal fistula closure (M. Ijaiya's technique).

The use of the posterior cervical lip for juxtacervical vesicovaginal fistula closure (M. Ijaiya's technique) was described about twenty years ago (**Ijaiya**, 2004) and has never been contested. It provides succor to fistula surgeons and equally restores dignity and improves the quality of life of afflicted patients.

Occasionally, the anterior lip of the cervix, together with the adjacent anterior vaginal and bladder walls, is involved in the pressure necrosis that accompanies prolonged obstructed labour. As this part of the cervix has been eroded, it poses a problem for repair, especially having a tension-free closure and conserving the cervical os. This can be achieved by a transabdominal extravesical technique with a peritoneal or omental flap interposed (Margolis, Mercer, 1994 and Kelly, 1983). Other surgical treatment options include colpocleisis and urinary diversion as last resorts (Cowie, 1994 and Kelly, 1983). For postmenopausal women, in relation to the cases presented below, the posterior lip of the cervix can be used to close the fistula defect through the vaginal route (M. Ijaiya's technique). The

prerequisites to the use of M. Ijaiya's technique include that the patient must be postmenopausal and that both cervical smear and endometrial biopsy results must be normal.

The technique is simple, less bloody, and less time-consuming compared to abdominal route repair. Vaginal capacity for coitus is not compromised as it is in colpocleisis, and there is no biochemical derangement or ascending urinary tract infection, as is common with urinary diversion (Cowie, 1994 and Kelly, 1983). It is, however, associated with a risk of chemical endometritis, which might be symptomless. The procedure is contraindicated in women of reproductive age because of its attendant complications, such as mensuria and infertility in those who desire pregnancy. Patients with abnormal cervical smears or endometrial biopsy results, such as premalignant or malignant lesions, are also excluded.

My experience with M. Ijaiya's technique of juxtacervical fistula closure is illustrated by these two cases. Case No1. She was a 62 year old woman, who had four deliveries, no miscarriage, and three children alive (Para 4^{+0}) from Yoruba extraction in South-West Nigeria. She presented with uncontrolled dribbling of urine from the vagina occurring both during the day and at night for 19 years. It started five days after a prolonged, difficult labour she experienced during her last delivery. A vaginal examination revealed a juxtacervical vesicovaginal fistula. There was no anterior cervical lip; only the posterior cervical lip remained. At examination under anaesthesia, it was realised that it would be difficult to mobilize the adjacent vaginal wall to close the fistula without tension.

A cervical smear was taken from the remnant of the cervix, and an endometrial biopsy was performed to exclude premalignant and invasive lesions. Both results were normal. Vesicovaginal fistula repair was carried out later using the posterior lip of the cervix to close the fistula. The indwelling urethral catheter was removed on the 14^{th} day after surgery. She was able to urinate normally thereafter, and there was no complication throughout the 1year follow-up period.

Case No. 2 This patient did not inform anybody, including her children, of her illness for about 30 years. The patient was brought to the hospital by her last two children. She was a 70 year old woman who had 10 deliveries with no miscarriage; 9 children were alive (Para 10^{+0}). Her last child was 30 years old at the time of presentation. She complained of continuous leakage of urine per vaginam, which started 4 days after her last delivery when she had a prolonged difficult delivery (obstructed labour). Initially, she had difficulty walking, but it subsided. The patient's last menstrual period was 26 years prior to presentation. On vaginal examination, she had a juxtacervical vesicovaginal fistula with an anterior cervical lip that had been eroded by pressure necrosis, and the cervical os was high up and not visible under anaesthesia (EUA).

The pap smear and endometrial biopsy were normal. The leftover portion of the cervix (posterior) was used to close the fistula defect. The period after the operation was un-eventful, and she was able to hold and void urine normally as at when due. She had an uneventful 2-year follow-up period.

How I perform M.Ijaiya's technique

The procedure is performed through the vaginal route, while the patient is in lithotomy position under anaesthesia. A circumferential incision is made around the fistula edge, going through the vagina and the posterior lip of the cervix. Using sharp dissection, the posterior lip of the cervix is divided into anterior and posterior flaps. The vaginal wall is dissected off the bladder (Fig. 7). Thereafter, the anterior flap of the posterior lip of the cervix is sutured to the bladder wall and is inverted into the bladder, while the posterior flap of the posterior cervical lip is sutured to the vaginal wall (fig. 8), and the edges are everted. Interrupted stitches with 2/0 Vicryl sutures are used. The scar edges are not excised so as to minimize haemorrhage (**Ijaiya,** 2004).

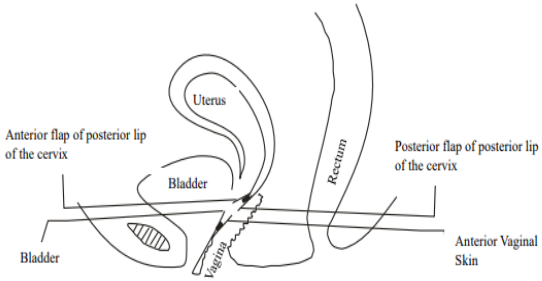

Figure 7: Diagram showing the anterior and posterior flaps created from the posterior cervix and the anterior vaginal skin dissected off the bladder (**Ijaiya,** 2004)

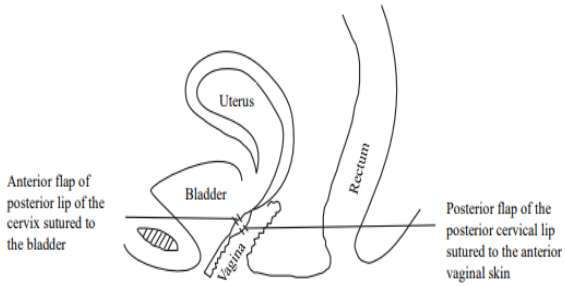

Figure 8: Diagram demonstrating closure of justacervical fistula (**Ijaiya,** 2004).

Rare Causes of Fistula

Vesicovaginal Fistula Complicating Uterine Evacuation

There is a theoretical possibility of VVF complicating uterine evacuation carried out through dilatation and curettage (D&C), but this is very rare in clinical practice except in untrained hands, as in the case reported (**Ijaiya**, Aboyeji, Fawole, et al., 2005). Mrs. AR had dilatation and curettage performed by a non-physician who lacked the required surgical skill. The anterior vaginal wall and urinary bladder were perforated, hence the leakage of urine per vaginam. Uterine perforation complicating dilatation and curettage is more

common than vaginal perforation. The patient became continent of urine after fistula repair. It is recommended that mid-level healthcare providers such as nurses, midwives, and clinical officers should use manual vacuum aspiration or medical methods for uterine evacuation in incomplete abortion and for early induced abortion that are legally permitted (Ibiyemi, **Ijaiya**, Adesina, 2019 and **Ijaiya**, Aboyeji, Fawole, et al., 2005).

Rectovaginal Fistula following Consensual Sexual Intercourse

Vaginal trauma during sexual intercourse is an everyday occurrence. Most are minor injuries that manifest as self-limiting minimal vaginal bleeding and do not require medical attention. Vaginal trauma due to coitus seldom extends into the rectum to cause rectovaginal fistula. Fish, (1956) reviewed twenty-one published studies on vaginal injuries due to coitus from different centres and reported only one case of posterior vaginal wall perforation that extended to the rectum. However, rectovaginal fistula sustained from coitus within marriage or rape is fairly common in Addis Ababa (Muleta, and Williams, 1999). This is an uncommon presentation in our environment. **Ijaiya**, Mai, Aboyeji, et al. (2009) reported a case of a24-year-old nullipara, who presented with leakage of flatus and faeces per vaginam of 15 months duration at presentation. She first noticed vaginal bleeding immediately after having sexual intercourse with her husband, which was her second coital experience with him. The bleeding was mild and subsided spontaneously at home. About a week later, she started passing flatus and faeces through the vagina. The coital activity was performed in a dorsal position and in a relaxed mood. Neither the patient nor her spouse was under the influence of alcohol. The diagnosis of low rectovaginal fistula was made after examination. At presentation, Mrs. R.H had been divorced. She was living with her parents. She had transvaginal two-layer repair after bowel preparation, and she became continent of flatus and faeces.

Non-fistulous Urinary Leakage among Women

Non-fistulous urinary leakage describes circumstances in which women experience urinary leakage but not because of a urogenital fistula. For the majority of people in developing countries, leakage of urine will usually refer to vesicovaginal fistula because of its high prevalence, whereas in western countries, stress incontinence and urge incontinence will easily come to mind. Stress incontinence is a condition in which there is leakage of urine as a result of an increase in intra-abdominal pressure that is transmitted to the bladder, which may occur during coughing, sneezing, laughing, or running, while urge incontinence is a urinary bladder problem that makes a woman have a sudden and extremely strong need to pass urine and the person is unable to delay going to the toilet. The person has just a few seconds between the need to urinate and the release of urine; otherwise, urine flow will commence. These conditions do exist in Nigeria, but people do not consider them problems that warrant hospital consultation.

The prevalence of non-fistulous urinary leakage among University of Ilorin teaching hospital family planning attendees was 30.6% (**Ijaiya**, Raji, Aboyeji et al. 2011) and 35% among adult women in European countries (Shaw, Gupta, Bushnell et al. 2006). It is worth noting that a wrong diagnosis could occur in up to 25% of cases when symptoms alone are considered. The most common type of non-fistulous urinary incontinence was stress incontinence, which is similar to findings from the UK. The attitudes of the affected women with regards to seeking help were poor, as none (0%) of the study population sought hospital help in **Ijaiya**, Raji, Aboyeji et al. 2011 study. Hospital consultation is also low in studies from developed countries like Spain (24%), Germany (25%), France (33%), and Pennsylvania (25%), these figures have been validated by Hunskaar, Lose, Sykes, et al. 2004. It is obvious from this study that non-fistulous urinary leakage is a common problem among women of reproductive age and probably worse among post-menopausal women in this part of the world, and those affected do not seek

medical attention. The high prevalence calls for further evaluation with urodynamics studies and its impact on quality of life. It is recommended that women be encouraged to report any urinary leakage for possible treatment to improve their quality of life.

Experimental Study (Clinical Trial)

Postpartum Haemorrhage

Excessive bleeding after delivery (Postpartum hemorrhage) is a leading cause of maternal death globally and a mother dies from postpartum hemorrhage (PPH) every six minutes in low- and middle-income countries, usually in the prime of her life and leaving behind a young family. According to **Ijaiya**, Aboyeji, and Abubakar, (2003), the incidence of PPH in Ilorin is 4.5%. Almost all maternal deaths from postpartum haemorrhage are preventable by active management of third stage of labour. The most crucial step in active management of the third stage of labor is the administration of uterotonics after every birth, as it is a routine, universal standard practice to prevent PPH. Drugs called uterotonic agents are administered to women after delivery to stimulate uterine contractions and reduce blood loss. In accordance with recommendations made by the WHO (Escobar, Nassar, Theron, et al. 2022 and Vogel, Williams, Galls, 2019), oxytocin is the preferred uterotonic drug. Misoprostol has recently gained popularity because of its heat stability and ease of oral administration. In contrast, oxytocin is heat-labile and requires a cold chain for storage and transport, which is practically impossible in this region of the world where there is an unreliable power supply. As a result, the effectiveness of oxytocin may be compromised.

A number of studies have challenged the superiority of oxytocin over misoprostol in the active management of third stage of labour. Musa, **Ijaiya**, Saidu, et al. (2015) carried out a double blinded randomized controlled trial comparing misoprostol and oxytocin for the management of the third stage of labour at the University of Ilorin Teaching Hospital. The study was registered in the Pan African Clinical Trials Registry

(PACTR201407000825227). This study compared the effectiveness and safety of oxytocin and misoprostol in the active management of third stage of labour.

The eligible participants were assigned to either the oxytocin or misoprostol groups. The oxytocin group received parenteral 10 ml (10 IU) of active oxytocin with three oral tablets of misoprostol placebo, while the misoprostol group received oral three tablets of active 200 mcg misoprostol and parenteral 10 ml of oxytocin placebo (Fig. 9). The placebos contained inactive substances and were structurally identical to the active drugs.

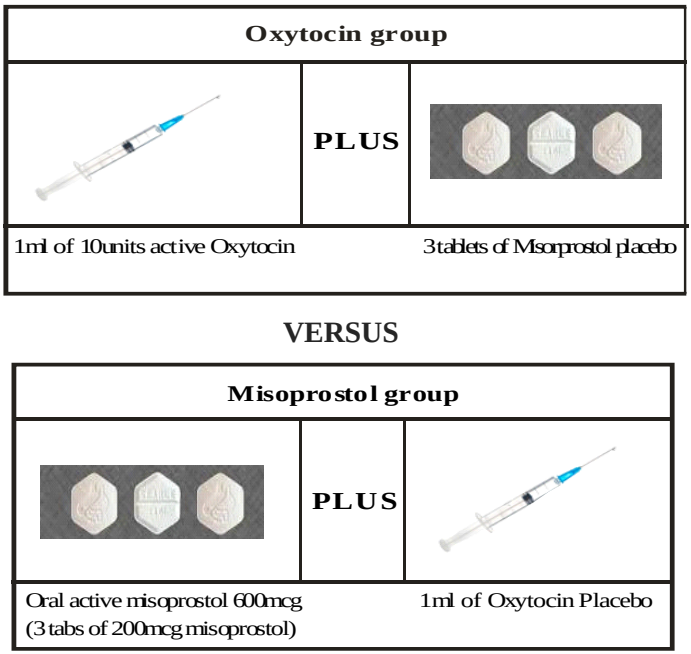

Figure 9: Oxytocin group versus Misoprostol group (**Ijaiya**, 2023).

The results showed that the mean postpartum blood loss was insignificantly higher in the misoprostol group than the oxytocin group [325.85 ± 164.72 ml vs 303.95 ± 163.33 ml. RR

(CI) 7.2 (-9.4 to 23.8). p=0.391]. PPH was recorded in 15% and 14% of patients that had misoprostol and oxytocin, respectively, but the difference was not significant [Relative risk (CI) 1.07 (0.55–2.10). pv = 0.841]. Shivering, pyrexia, and diarrhea were all significantly more common in the misoprostol group. It was, therefore, concluded that the efficacy of oral misoprostol was similar to that of parenteral oxytocin and that the adverse effects associated with misoprostol were transient and self-limiting. Thus, oral misoprostol is efficacious and a good alternative to oxytocin for active management of the third stage of labour. This study won the John Sciarra International Journal of Gynaecology& Obstetrics Prize 2015 for the best clinical research article from a low/middle-income country (Musa, **Ijaiya**, Saidu, et al., 2015).

According to the most recent WHO recommendations on uterotonics for PPH prophylaxis, oxytocin (10 IU I/V or I/M) is still the uterotonic of preference for all births. The use of oral misoprostol or other injectable uterotonics is advised for the prevention of PPH in situations when oxytocin is not available or its quality cannot be guaranteed. Community health workers are advised to administer misoprostol for the prevention of PPH in situations where skilled birth personnel are not available to administer injectable uterotonics (Vogel, Williams, Gallos, et al., 2019).

My Contributions towards Reducing the Burden of Obstetric Fistula

Quite early in my career, I recognized that beyond the repair of fistula, there is an existential need to focus on prevention as the incidence of fistula outstrips the number of repairs, and available capacity cannot adequately match the existing burden of fistula cases.

Consequently, in 2011, I introduced a partograph hands-on training workshop to the 500-level Obstetrics and Gynecology curriculum, which I have been taking since then. This is the only university where such a programme is being conducted. The use of partographs is a vital tool recommended by the WHO to prevent prolonged obstructed labour, which is a

major precursor for the development of obstetric fistula. Although this is an important effort in the overall scheme of efforts to prevent obstetric fistula, it is one that has great potential if coalesced on a larger scale.

I continue to build the capacity of health providers beyond the clinical confines of where I work. Over the years, I have served as a consultant to various international organizations, including the Liverpool School of Tropical Medicine, PRRINN-MNCH, JHPIEGO/IHP, Wellbeing Foundation Africa, and a host of others. Through these efforts, I have led or supported the training of over 1,500 health providers within and outside the country (Kwara, Yobe, Katsina, Zamfara, Niger, and Bauchi state) and two of the three districts of Sierra Leone (Freetown and Bo districts) on emergency obstetric care as a potent pathway to reduce maternal mortality and morbidity, including the development of Obstetric Fistula.

I facilitated the donation of a multi-million naira set of mannequins and the establishment of an emergency obstetric and newborn care skills room in the University of Ilorin Teaching Hospital for training medical students, obstetrics and gynecology resident doctors, and nurses (Figs 10&11). It was donated by the Wellbeing Foundation Africa, the Liverpool School of Tropical Medicine, and Johnson & Johnson.

Figure 10: Emergency obstetrics and newborn skills room, UITH, Ilorin (**Ijaiya**, 2023).

Figure 11: A set of Assisted Vaginal Delivery (AVD), and Perineal laceration/Episiotomy repair mannequins (**Ijaiya**, 2023).

I also facilitated the extension of emergency obstetric and newborn care training to healthcare providers working in Kwara South and Kwara North senatorial districts through Wellbeing Foundation Africa and the Liverpool School of Tropical Medicine, and funded by Johnson & Johnson.

I facilitated the training of all resident doctors in the Department of Obstetrics and Gynecology and nurses working in the emergency obstetrics and gynecology ward of the University of Ilorin Teaching Hospital on emergency obstetric and newborn care and the use of partographs in labor management.

As a fistula surgeon, I continue to train resident doctors on fistula surgery within and outside my workplace. I am glad that some of my mentees have gone ahead to undertake fistula repairs for numerous clients in different parts of the country based on my tutelage, giving patients hope, restoring their womanhood, and supporting the attainment of their reproductive health needs.

I was privileged to be among the team of experts that developed the 2011-2015 and 2016-2020 national strategic plans for the eradication of obstetric fistula. These documents articulate the country's strategic approach towards reducing fistula as a public burden. Sadly, implementation challenges still stall the laudable goal of this plan.

I was a member of a team of experts from the international continence society that developed "The

Terminology for Female Pelvic Floor Fistulas," published in Neurology and Urodynamics, 2020, 1-32.

Invention / Scholarships/ Awards / Prizes/ /Recognition.

I have over 120 publications to my credit, published in reputable national and international journals with some notable distinctions.

Invention /Patent

1. In 2004, I invented a surgical procedure, "Use of Posterior lip of the cervix for Juxtacervical vesicovaginal fistula closure (M. Ijaiya's technique) published in the International Urogynaecology Journal.
2. The President of the Federal Republic of Nigeria and Commander in Chief of the Armed Forces granted a patent to M. Ijaiyas's technique of fistula repair in 2018.

Scholarships

3. In 2007, I was a Royal College of Obstetricians and Gynaecologists Scholar at the Liverpool School of Tropical Medicine, Liverpool, UK, for a Diploma in Reproductive Health in Developing Countries.
4. In 2015, I was a Ford Foundation scholar at the Wits Reproductive Health Institute, University of the Witwatersrand, Johannesburg, RSA, for sexual and reproductive health research training.
5. In 2019/2020, I was a Harvard Medical School Scholar at Harvard Medical School, Boston, Massachusetts, USA, for the Global Clinical Scholar Research Training Program.

Prizes

6. In 2012, **Ijaiya M.A**, Raji H.O, Aboyeji A.P. et al., received the Favorite Author award of the *International Journal of Women's Health* (Dove Medical Press, New Zealand) for the publication on Non-fistulous Urinary Leakage among Women Attending a Nigerian Family Planning Clinic.

7. In 2014, I won the third prize in the International Urogynaecology Association (IUGA) International Foto contest.
8. Musa A.O, **Ijaiya M.A**, Saidu R, et al., won the John Sciarra *International Journal of Gynaecology& Obstetrics* prize paper award honorable mention 2015 for the best clinical research article from a Low / Middle-Income country. "Double-blind Randomized Trial Comparing Misoprostol and Oxytocin for Management of the Third Stage of Labour in a Nigerian Hospital''

Honours / Recognition

9. **Ijaiya M.A**. (2002). "Vesico-vaginal Fistula: Epidemiology and Prevention," published in *Postgraduate Doctor Caribbean* 18(5):179–192, was reproduced in *Postgraduate Doctor Middle East*. 2002. 25(6): 174–176.
10. In 2004, **Ijaiya M.A** and Aboyeji A.P's publication "Obstetric Urogenital Fistula: The Ilorin Experience," published in the *West African Journal of Medicine*, was the only article selected from journals in Africa, Latin America, Asia, or the former Soviet countries for reproduction in the *Public Library of Science (PLOS)*, San Francisco, California, USA. A letter of commendation was written to the authors by the editor-in-chief of the Journal.
11. My team received special recognition for excellence from the Harvard medical school for 2020 GCSRT "Pitch Your Study."
12. In 2021, I received the Emergency Obstetric and Newborn Care Goodwill Message Ambassador Award from the Department of Emergency Obstetrics Care and Quality of Care Unit, Dept. of International Public Health, Liverpool School of Tropical Medicine, UK.

Recommendations

Obstetric fistula is a major public health problem, with Nigeria contributing 15 percent of the global burden and annual incidence of 12,000 cases. It is closely related to poorly

supervised delivery and, especially, to delays in women being able to access the skilled professional care that they need. I therefore recommend that:

1. Maternal healthcare needs to be a priority for governments in developing countries. Reproductive health awareness should be provided to women of reproductive age both in rural and urban areas to reduce the risk of maternal morbidity and mortality as well as the development of obstetric fistulas.
2. The government should encourage female education and women's empowerment by providing microcredit facilities to women. Formal education will delay marriage and allow for better appreciation and utilisation of available health facilities for antenatal care, institutional delivery, and family planning.
3. The government should legislate against some negative traditional practices, such as the Gishiri cut, female genital mutilation, gender inequality, early marriage, and childbearing, which are important measures in preventing obstetric fistulas.
4. The government should make a contributory health scheme with quality care services available and accessible to all women of reproductive age that will help in achieving universal health coverage.
5. Maternity services should be made available, accessible, and affordable with the required manpower and emergency obstetric care services.
6. The government should ensure all deliveries are supervised by skilled birth attendants (an accredited health professional such as a doctor, nurse, or midwife who has been educated or trained to proficiency in the skills needed to manage normal pregnancies, deliveries,

and in the identification, management, and referral of complications in women and newborns).

7. Partographs should be used for labour management. At the primary health care level, any labour that crosses the alert line on the cervicogram should be referred early enough to prevent obstructed labour and obstetric fistula. All prolonged labour cases should have indwelling urethral catheterization for about 10 days to prevent fistula formation.
8. The government should make fistula repair services accessible, and free or affordable to fistula patients, as many of them are indigent. Most of the fistula surgeons in Nigeria are concentrated in university teaching hospitals, where only a few fistula patients can afford the fees. Therefore, the government should maximize the potential of tertiary hospitals by making the services free or affordable to patients.
9. There is a need to organize outreach surgeries where fistula surgeons and Obstetric fistula cases are pooled to reduce these cases (the pool effort of fistula repair). Corporate bodies, NGOs, the Universities, University teaching hospitals, and individuals can provide support for the pool effort of fistula repair.
10. More doctors should be trained in fistula surgery to be able to clear the backlog.

Conclusion

Obstetric fistula is a preventable condition that is still prevalent in developing countries of the world, including Nigeria. This is due to a high level of poverty, illiteracy, ignorance, and poor utilisation of inadequate health facilities. It is therefore an issue of public health concern. The mainstay of

the prevention of obstetric fistulas is the avoidance of obstructed labour through improved obstetric care. Concerted efforts by individuals, governmental organisations and non-governmental organisations are needed to reduce or eradicate this distressing and dehumanizing condition, and every delivery must be supervised by a skilled birth attendant.

Acknowledgement and Appreciations

Mr. Vice-Chancellor, ladies and gentlemen, it has been a remarkable journey. One in which I have made my footprints on the sands of time and moved obstetric fistula care to the next level for generations of gynaecologists and fistula surgeons to use for the care of fistula patients. A journey in which I have restored the dignity of patients, improved their quality of life, and well-being. However, there is still a lot more to be done.

Vice-Chancellor, sir, with a high sense of humility, I would say my success is generational and not exceptional or accidental. Because I am where I am today as a result of collective gains from my grandfather (Alhaji Badamosi Ijaiya, Chief Balogun Imole of Offa and Chief Atunluse of Offa), parents, family members, teachers, colleagues, and friends. How I wish my parents, Alhaji AbdulHameed Ijaiya (Chief Alatunse of Offa) and Alhaja Sariyu Ayoka Ijaiya (Nee Durojaiye), and my uncle, Professor Kunle Ijaiya (a world-renowned German-trained paediatrician and Professor of paediatrics; Dean, Faculty of Medicine, ABU Zaria 1982–1984), were alive to witness this glorious day. May Allah grant them Aljannat Firdaos. My unreserved appreciation goes to all the Ijaiya, Durojaiye, and Olaosebikan (my in-laws from Oro-Ago) families that are at home and in diaspora. My special appreciation goes to Alhaja Rabiat Dundu, Alhaja Fatimoh Oyewo, Alhaja Sarat Olatinwo, Alhaja Fehintola Giwa (Iya Itafaji), Alhaja Wosilat Fashola,

Mrs. Hawau Durojaiye (Iya Saratu), and Mr. Raufu Durojaiye for taking care of me when I was growing up.

I am immensely grateful to the past and present Management of the University of Ilorin and the University of Ilorin Teaching Hospital for providing an enabling environment for me to carry out my responsibilities as a teacher, researcher, and clinician. I owe a debt of gratitude specifically to the Vice Chancellor, Professor Wahab Egbewole (SAN), and the Chief Medical Director of the University of Ilorin Teaching Hospital, Prof. Abdullahi Dasilva Yusuf, for their support.

I also thank the past and present Provosts of the College of Health Sciences, the Deans of the Faculty of Clinical Sciences and the Heads of the Department of Obstetrics and Gynaecology. To my teachers at every stage of my learning, both in western and Islamic education, and to colleagues in the Department of Obstetrics and Gynaecology who have given me countless opportunities for new learning and support. I appreciate you all.
Special thanks to my friends, and colleagues who went through residency training at the same time as me in the Department of Obstetrics and Gynaecology (1993–1999).You inspired me with your sense of commitment, courage, and perseverance in the face of daunting challenges and obstacles. It was fun working with you. Unfortunately, some of them have passed away (may their souls rest in peace).

Thanks to all the researchers I collaborated with both locally and internationally. I deeply appreciate the resident doctors in the Department of Obstetrics & Gynaecology, the nurses of the University of Ilorin Teaching Hospital, especially the peri-operative nurses and the nurses in the Department of Obstetrics and Gynaecology, and the medical students (ILUMSA).

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I appreciate profoundly, the Liverpool School of Tropical Medicine and Wellbeing Foundation Africa and other Development Partners whom I have been privileged to work with for providing the platform and the cordial working environment to contribute to efforts to improve maternal mortality and maternal wellbeing including prevention of obstetric fistula.

I am immensely grateful to our Royal fathers, HRH Dr Haliru Yahaya (OON), Emir of Shonga, and HRH Oba AbdulWahab Oyewole Oyetoro, Onira of Ira, and the Offa local government chairman, Hon. Jare Olatundun, for gracing the occasion.

I appreciate members of Offa Grammar School Class of 1982, Ahmadu Bello University Medical School Class of 1989, Nigerian Medical Association (Kwara Branch), Islamic Medical Association of Nigeria (UITH Branch), University of Ilorin Muslim Community, Offa Descendant Union, Oro-Land Muslim Forum, Unilorin Muslim Ladies Circle, Crescent Gold Crown Hospital, Ilorin, and Peace Street Landlords' Association, Tanke, Ilorin.

I am grateful to Professor Aboyeji A.P., Dr. Abubakar D. (F.M.C. Gusau), and Professor Raji H.O. for reading this inaugural lecture. I also appreciate Professor Adeoye A.A., the Chairman of the Library, and Publications Committee for his efforts at editing it. My sincere thanks go to members of the Professor Ijaiya inaugural lecture planning committee for making this event seamless and colourful. May Almighty God reward you. I thank everybody here and the online participants.

To my amazing children, Engr. Junaid Adedamola Ijaiya, Engr. Toyyib Folawiyo Ijaiya, and Miss. Firdaos

Aderinsola Ijaiya, who have had to spend many days and nights without me. I appreciate all of your support, love, and encouragement.

I want to express my gratitude to my priceless diamond, The Borokini Adini of Oro Land. In the words of Franz Schubert, "Happy is a man who finds a true friend, and far happier is he who finds that true friend in his wife" I have found a true friend in you, Zainab Ajoke. Thank you for your unfailing patience and for being the most supportive, submissive, obedient, and loving wife ever. May Allah grant us many more happy and healthy years together and re-unite us as partners in Jannah, ameen.

This inaugural lecture is dedicated to the poor and marginalised fistula patients who have brought such richness into my life. I pray that one day the voice of the poor will be heard and this condition will become a thing of the past.

Lastly, to God be the glory, I have enjoyed the journey up to this point, and I look forward to more exciting and fulfilling opportunities that the profession offers.

The Vice-Chancellor, distinguished ladies, and gentlemen, as I draw the curtain on my journey so far, I ask us to take a pause and imagine a life faced with continuous leakage of urine……. I am sure such reflection will evoke a profound sense of shame and embarrassment, a feeling of isolation from social gatherings, family, and friends, and a suicidal tendency due to fear of judgment and ridicule. A loss of self-esteem and self-worth amidst missed opportunities and a loss of livelihood. These are the daily experiences of people living with fistulas in an attempt to give life through childbirth.

Thank you for your attention and God bless.

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