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International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

PATTERNS OF HYSTEROSCOPIC ABNORMALITIES AMONG INFERTILE WOMEN AT A TERTIARY HOSPITAL IN SOUTHERN NIGERIA.

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ABSTRACT :

Background: Hysteroscopy is the visualization of the uterine cavity with the aid of a telescopic device called a hysteroscope for either diagnostic or therapeutic purposes. The advent of hysteroscopy has revolutionized the diagnosis and treatment of intrauterine pathologies in modern gynecological practice. Uterine factors can compromise the fertility rate in infertility treatment or in assisted reproduction, so the role of hysteroscopy cannot be overemphasized. Diagnostic hysteroscopy can be performed in an office with minimal discomfort and superior sensitivity and specificity in evaluation of the uterine cavity.

Aim: To review the hysteroscopic findings in women with infertility at FMC, Yenagoa.

Study Design: It was a descriptive retrospective study which was carried out on females being evaluated for infertility at FMC, Yenagoa between 1st January 2021 and 31st December 2023.

Results: The mean age was 40.6 years. Majority of the women were aged between 40-49 years, had secondary infertility with normal hysteroscopic findings reported in 16.3% of women. The most common reported hysteroscopic abnormality was intrauterine adhesions followed by cervical stenosis.

Conclusion: Majority of the women evaluated had an abnormal finding, emphasizing the role of hysteroscopy in infertility workup.

INTRODUCTION

Hysteroscopy is a valuable tool in the evaluation of women presenting with infertility and currently the gold standard for intrauterine cavity exploration as it provides a direct view of the endometrial cavity for either diagnostic or therapeutic purposes. Infertility is the inability of a couple to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse (Ray-Offor et al., 2021). Globally, about 72.4 million women are currently faced with infertility with about 56% of these women are seeking fertility treatment (Ray-Offor et al., 2021). The standard fertility work-up includes tests for ovulation and semen analysis, evaluation of tubal patency by techniques including hysterosalpingography (HSG) or sonohysterography, and transvaginal sonography (TVS) (Di Spiezio Sardo et al., 2016). Generally, diagnostic laparoscopy and hysteroscopy are not included in the initial infertility evaluation. In particular, laparoscopy is considered for the diagnosis and treatment of long-term infertility to preclude the existence of peritubal adhesions and endometriosis disease. Hysteroscopy is considered the gold standard tool for the endoscopic visualization of the uterine cavity. Office-based operative hysteroscopy is usually well tolerated by patients' intercourse (Ray-Offor et al., 2021), avoiding most of the uterine traumatic maneuvers and allows a direct approach for the evaluation and treatment of many intrauterine pathologies during the same diagnostic session in a "see and treat" modality (Zhu et al., 2016). A base line hysteroscopy is recommended especially in failed previous attempts before undertaking advanced assisted reproductive procedures of in vitro fertilization and embryonal transplant (Ray-Offor et al., 2021; Di Spiezio Sardo et al., 2016). Hysteroscopy can be used to directly and accurately diagnose abnormalities such as intrauterine adhesions, endometrial polyps, submucosal fibroids, endometritis, or uterine structural abnormalities through visualization of the cervical and intrauterine conditions, as well as through concurrent therapeutic interventions when necessary. In addition, hysteroscopy is advantageous as it can be used to perform biopsies (Omidiji et al., 2019).

Uterine abnormalities both congenital and acquired are implicated as one of the causes of infertility with uterine cavity abnormalities estimated to be the causal factor in 10% to 15% of couples seeking treatment (Di Spiezio Sardo et al., 2016). Other modalities to visualize the uterus includes; transvaginal scan, hysterosalpingography (HSG) and sonohysterography (Zhu et al., 2016). Although, the WHO recommends HSG alone, for managements of non-

fertile females may be due to its ability to assess tubal patency (Di Spiezio Sardo et al., 2016; Abd El-Nasser et al., 2022; Di Spiezio Sardo et al., 2016). Hysteroscopic evaluation provides information on the accessibility of the cavity, important for insemination or embryo transfer and the direct visualization of the endometrial cavity. Hence, it is said to increase clinical pregnancy rate and live birth rate in IVF patients (Abd El-Nasser et al., 2022; Di Spiezio Sardo et al., 2016; Di Spiezio Sardo et al., 2016).

While the prevalence of intrauterine adhesions among Nigerian women is on the increase, the use of hysteroscopy is very limited (Noa Ndoua et al., 2018; Ajayi et al., 2015). Hence the need to include hysteroscopy into the routine evaluation of infertility, however, will require training and provision of facilities (Ajayi et al., 2015; Ugboaja et al., 2017). There are several reasons why hysteroscopy, and in particular the outpatient hysteroscopy, should be recommended as a first-line procedure in all or almost all cases with female infertility. The distinction between diagnostic and operative procedure has been reduced with the introduction of the so-called "see & treat hysteroscopy," with the possibility to perform a single procedure in which the operative part is perfectly integrated within the diagnostic work-up: this is very important considering how important the "time" is for an infertile couple. The improvement in technology and techniques made hysteroscopy less painful and invasive allowing it to be performed in an ambulatory setting with more accurate diagnosis and greater management options for intrauterine pathology with direct access and a real-time view of the endometrial cavity.

Treating intrauterine pathologies through hysteroscopy has been found to lead to improvements in reproductive outcomes, since intrauterine lesions can negatively affect the implantation rate. The benefits of using interventional hysteroscopy to treat intrauterine pathologies have been clearly documented in many studies (Ugboaja et al., 2017). However, no previous systematic review has determined whether hysteroscopy is helpful in improving both the clinical pregnancy rate (CPR) and the live birth rate (LBR) in the absence of intrauterine pathologies. Even in the absence of intrauterine pathological findings, it has been hypothesized that performing hysteroscopy can help improve pregnancy rates through relaxation of the cervix, stimulation of an inflammatory reaction in the endometrium, and secretion of cytokines (Ugboaja et al., 2017). This study hopes to evaluate the role of Hysteroscopy in diagnosing the abnormalities of the uterine cavity among female being evaluated for infertility at FMC, Yenagoa.

SPECIFIC OBJECTIVES:

1. To determine the frequency/ prevalence of primary and secondary infertility respectively among infertile women who had hysteroscopy in FMC, Yenagoa
2. To determine the uterine pathological findings at hysteroscopy in women with infertility in FMC, Yenagoa
3. To determine the distribution of the uterine pathologies seen hysteroscopically between women with primary and secondary infertility in FMC, Yenagoa

MATERIAL AND METHODS:

It was a descriptive retrospective study of women who were evaluated for infertility with hysteroscopy in Federal Medical Centre, Yenagoa over a 3-year period; the hospital serves as a referral Centre for private, cottage, general and specialist hospital in the Niger Delta region. Ethical clearance was obtained from the Institution's Ethics and Research Committee prior to the commencement of the study. A list of all women (names and hospital numbers) that were evaluated for infertility with hysteroscopy from the 1st of January 2021 to 31st of December 2023 was compiled from the gynecological clinic and theater records, and the case notes were retrieved from the Medical Records Department of the hospital. Forty three cases were identified and their cases notes were retrieved (giving a retrieval of 100%) and analyzed. Relevant information (which included age distribution, marital status, religion, educational status, type of infertility and hysteroscopic findings) were retrieved from the cases notes and entered into a self-designed proforma. The data was coded and entered into a spread sheet and analyzed using SPSS for windows 25.0 version and expressed in percentages and presented in tables.

RESULTS:

The mean age was 40.6 years. Majority of the women were aged between 40-49 years, had secondary infertility with normal hysteroscopic findings reported in 16.3% of women. The most common reported hysteroscopic abnormality was intrauterine adhesions followed by cervical stenosis.

Table 1: Sociodemographic characteristics.

Age	Frequency= 43	%
20 – 29	3	6.9
30– 39	16	37.3
40– 49	24	55.8
MARITAL STATUS		
Single	-	-
Married	43	100
RELIGION		
Christian	43	100
Islam	-	-

EDUCATIONAL STATUS		
Primary	-	-
Secondary	-	-
Tertiary	43	100

Table 1 shows majority of the women were aged between 40-49 years. All the participants were married; Christian's with tertiary level of education.

Table 2: Type of infertility

Variables	Frequency (n)	Percentage (%)
Primary	8	18.6
Secondary	35	81.4

Table 2 shows most of the participants presented with secondary infertility

Table 3: Hysteroscopic findings.

Variables	Frequency (n)	Percentage (%)
Normal	7	16.3
Endometrial polyp	3	6.9
Uterine fibroids	8	18.6
Intrauterine adhesions	16	37.3
Cervical stenosis	9	20.9
Total	43	100

Table 3 shows the most reported hysteroscopic abnormality was intrauterine adhesions followed by cervical stenosis.

DISCUSSION

The role of hysteroscopy in the evaluation of infertility cannot be overemphasized as they detect intrauterine diseases that would interfere with the implantation of the embryo. The advent of hysteroscopy has revolutionized the visualization and treatment of these intrauterine pathologies. The mean age of the included cases was 40.6 years, similar to a study by Emeka Ray-Offor (Ray-Offor et al., 2021) and differ with other similar studies (Ajayi et al., 2015; Kabeil et al., 2022).

Most of the women were aged 40-49 years, similar to a study in India (Sahu et al., 2012) however differs with a study by Kabeil et al. (2022). Delay in childbearing for education, career reasons and financial stability may be responsible for the advanced age. Increased divorce rates, single parenthood, and non-traditional family structures may contribute to delayed childbearing. Women are more aware of the decline in fertility with age and advances in assisted reproductive technologies (ART) like IVF have given women more options for conceiving at older ages. In some countries or regions, infertility treatment may not be covered by insurance, leading women to delay seeking evaluation and treatment.

All the women evaluated had tertiary level of education and this may be responsible for the delay in childbearing as well as increase acceptance for evaluation. Educated individuals are more likely to understand the importance of reproductive health, the consequences of delayed childbearing, and the available treatment options. They are more likely to seek medical care when experiencing infertility issues, rather than relying on traditional or alternative methods as education encourages individuals to take a proactive approach to their reproductive health, seeking evaluation and treatment earlier in the process.

More than two-third of the women had secondary infertility than primary infertility. This was in consonance with a study done by Ugboaja et al. (2019) and disagrees with studies by Abd El-Nasser et al. (2022) and Sahu et al. (2012). Women with secondary infertility are often older than those with primary infertility, which can affect fertility due to declining egg quality and quantity. They have had a previous pregnancy, which can lead to changes in reproductive health, such as tubal damage or adhesions. The longer the interval between pregnancies, the higher the risk of secondary infertility.

Intrauterine adhesions were the most observed abnormality. This is similar to previous studies (Ugboaja et al., 2017; Ajayi et al., 2015; Neerja, 2014; Ajayi et al., 2015). These intrauterine adhesions often result from unsafe abortions by dilatation and curettage and sometimes by infectious complications such as endometritis after delivery (Ugboaja et al., 2019). Other causes include overzealous curettage for abortion, postpartum hemorrhage, complicated caesarean section and myomectomy. Intrauterine adhesions can reduce fertility by interfering with embryo implantation, causing recurrent miscarriage and reducing the chances of successful pregnancy. Intrauterine adhesions can also increase the risk of pregnancy complications, such as placenta accreta and preterm labour. The presence of intrauterine adhesions can significantly impact fertility and pregnancy outcomes hence accurate diagnosis and treatment are essential to improving fertility and achieving successful pregnancy outcomes.

Normal intrauterine findings were found in a third of the women, similar to a study by Ugboaja et al. (2019) and differs from studies by Abd El-Nasser et al. (2022) and Sahu et al. (2012). Abnormal findings were seen in majority of the women which is comparable to study in Nigeria (Ugboaja et al., 2019). Other abnormal findings in this present study includes cervical stenosis, uterine fibroids and endometrial polyp. Assessing the endometrial cavity using hysteroscope for uterine abnormalities as well as addressing them when present will improve fertility of women evaluated for infertility and also increase implantation during assisted reproduction.

CONCLUSION

Majority of the women evaluated had an abnormal finding, hence emphasizing the role of hysteroscopy in infertility workup.

AUTHOR CONTRIBUTIONS

Idea/Concept: Amadi-Oyioma M Chigesilem, Atemie Gordon, Sintei Erigheyefa; Design: Amadi-Oyioma M Chigesilem, Atemie Gordon, Sintei Erigheyefa, Feghabo J Ebiegberi, Porbeni-Fumudoh B. Offiong; Control/Supervision: Amadi-Oyioma M Chigesilem, Atemie Gordon, Porbeni-Fumudoh B. Offiong; Data Collection and/or Processing: Amadi-Oyioma M Chigesilem, Clifford A Timiebi, Warisuo S. Ariwelo; Analysis and/or Interpretation: Sintei Erigheyefa, Feghabo J Ebiegberi, Clifford A Timiebi, Warisuo S. Ariwelo; Literature Review: Amadi-Oyioma M Chigesilem, Atemie Gordon, Clifford A Timiebi, Warisuo S. Ariwelo; Writing the Article: Amadi-Oyioma M Chigesilem; Critical Review: Amadi-Oyioma M Chigesilem, Atemie Gordon, Sintei Erigheyefa, Feghabo J Ebiegberi, Porbeni-Fumudoh B. Offiong, Clifford A Timiebi, Warisuo S. Ariwelo

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

FUNDING

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

ETHICAL APPROVAL

Ethical approval was obtained from the ethical committee of the Federal Medical Centre, Yenagoa, Bayelsa State.

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