

Experience with Hysteroscopy in a Private Specialist Hospital in Nigeria

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Abstract

Background: Hysteroscopy is a standard method for the evaluation and treatment of various gynecological disorders. Its availability and accessibility are limited in our setting owing to resource constraints. Nevertheless, the utilization is on the increase mostly in private health institutions in Nigeria and as an adjunct in infertility management. **Objectives:** The objective is to document the experience and outcome of hysteroscopy surgeries at a private specialist-assisted reproduction and endoscopy unit. **Materials and Methods:** A retrospective review of all hysteroscopic procedures conducted at the unit was undertaken. Relevant sociodemographic and clinical information were extracted for analysis. In addition, outcomes of the procedure and outcome for those who eventually had *in vitro* fertilization (IVF) treatment were documented for analysis. **Results:** A total of 106 patients had hysteroscopy over the study period. The age of patients ranged from 24 to 55 years. The most common indication for hysteroscopy was uterine synechiae (50%) others were preparatory for IVF (30.2%), uterine fibroid/polyp (10.4%), and abnormal uterine bleeding (9.4%), respectively. The major findings at hysteroscopy were intrauterine adhesions 68.9%. Therapeutic adhesiolysis was done using the scissors in most cases (83%) while two patients (1.9%) had adhesiolysis and resection of uterine polyp. A complication of noncardiogenic pulmonary edema was recorded from fluid overload. Overall most had return to normal menses (65.1%). Thirty-nine (38.8%) women had IVF treatment after hysteroscopy of which outcome was successful in 16 (41%) women. **Conclusion:** The utilization of hysteroscopic surgeries in management of endometrial pathologies is increasing. It offers a safe and effective treatment and is a useful adjunct for improving IVF outcome especially for those with repeated failed treatment.

Keywords: Adhesiolysis, hysteroscopy, infertility, intrauterine adhesions, *in vitro* fertilization

INTRODUCTION

The utilization of endoscopy in gynecology such as hysteroscopy has improved even in resource constraint regions of Sub-Saharan Africa. Hysteroscopy has attracted the attention of gynecologist as a reliable diagnostic and therapeutic alternative due to the fact that it offers the client minimal invasion, reduced morbidity, a shorter hospital stay as well as a shorter recuperation period.¹⁻³ Hysteroscopy is a procedure that allows exploration of the uterine cavity using the hysteroscope, for the purpose of diagnosing and/or treating abnormal conditions.

Hysteroscopy can either be diagnostic or operative; operative hysteroscopy is used to correct an abnormal condition that has been detected during a diagnostic hysteroscopy. If a uterine problem was detected during the diagnostic procedure, an operative hysteroscopy can be performed at the same time,

avoiding the need for a second surgery.²⁻⁴ Notable abnormalities that can be diagnosed or treated by hysteroscopy include: intrauterine adhesions (IUAs), abnormal bleeding, polyps, fibroids, or uterine septum.^{1,3,4}

IUAs are frequently detected abnormalities on hysteroscopy. IUAs are bands of fibrous or scar tissue that form in the endometrial cavity, often in response to a uterine procedure, trauma and/or infection of the uterine endometrium.^{4,5} The European Society for Hysteroscopy grades IUAs into

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mild (thin or filmly adhesion), moderate (singular firm adhesions), and severe (multiple extensive firm adhesions with agglutination of uterine walls).^{5,6} Adhesiolysis describes the surgery that is performed to remove or divide adhesions so that normal anatomy and organ function can be restored and symptoms relieved. Historically, the removal of IUAs involved the performance of a simple D and C, a laparotomy/hysterotomy, or blind adhesiolysis with the uterine sound albeit with poor outcome.⁵⁻⁸ The treatment of IUAs improved dramatically with the emergence of the hysteroscopy procedure. Hysteroscopy is the current method of choice for diagnosing, treating, and following patients with IUAs hysteroscopy has also assumed a vital role in preparation for assisted reproduction, where a diagnostic or interventional look at the uterine cavity is conducted. This is done with a view to improving implantation rate following *in vitro* fertilization and embryo transfer (IVF-ET).^{9,10}

Despite these potential benefits, the uptake and availability of the procedure is still limited in our setting owing to resource constraints. Ours is a private specialist gynecologic center, one of the few facilities offering comprehensive endoscopic services in a resource limited setting. We present a documentation of hysteroscopy procedures performed at the gynecology endoscopy unit.

MATERIALS AND METHODS

We undertook a retrospective review of all hysteroscopy procedures conducted at Graceland Medical Centre, Benin-city, Nigeria, over a 24 months (between July 2016 and June 2018) period. The case notes of all the patients who had hysteroscopy at the center were retrieved for analysis. Sociodemographic and clinical information extracted from the case notes included age, parity, menstrual pattern, indication for hysteroscopy, method of diagnosis, treatment method, outcome, and complications. In addition, outcomes of those who had IVF treatment were documented as appropriate. The data extracted were analyzed using IBM SPSS Statistics for Windows, Version 20.0. (Armonk, NY: IBM Corp.), and presented in the form of frequency tables and descriptive statistics. Chi-square test was used to test for statistical difference where appropriate. $P < 0.05$ was considered statistically significant.

RESULTS

A total of 106 patients had hysteroscopy over the study period of 24 months. The age of patients ranged from 24 to 55 years with mean of 38.6 years. Over 80% were nulliparous and 42.5% (45/106) have never been pregnant. The most common indication for hysteroscopy was IUAs (50%) other indications were preparatory for IVF 30.2%, uterine fibroid/polyp and abnormal uterine bleeding accounted for 10.4% and 9.4%, respectively. Other indications include prior evacuation of retained products of conception 21 (19.8%), myomectomy 37 (34.9%), caesarean section 4 (3.8%) and previous failed IVF 24 (22.6%). About 25% of patients previously had

adhesiolysis (blind procedure), only 10.4% of these were done using the hysteroscope [Table 1].

The most common findings at hysteroscopy were IUAs (68.9%); severe 30.2%, moderate 21.7%, and mild 17%. Few patients had uterine polyp (6.6%), submucous myoma (5.5%), and uterine septum (3.8%). Subanalysis of the association between the findings at surgery and the original indication for hysteroscopy showed that finding of IUA was strongly associated with hypomenorrhea/amenorrhea (uterine synechiae) as indication for hysteroscopy.

Majority of therapeutic adhesiolysis was done using the scissors (76.4%) while 2 (1.9%) patients had adhesiolysis and resection of uterine polyp using the Bigatti shaverTM. Common complications such as uterine perforation, infection, and bleeding were not recorded in this review. One (0.9%) case of noncardiogenic pulmonary edema was recorded from fluid overload as significant complication of the procedure. Postprocedure treatment for most patients was use of sequential hormone replacement.

Overall, most of the patients had return to normal menses after adhesiolysis (65.1%), 7.5% (8/106) had no menses and 5.7% were scheduled for repeat. The analysis showed that majority of those with negative outcome (no menses) had findings of severe IUAs 62.5% (5/8) [Table 2].

Table 1: Demographic and clinical characteristics (n=106)

Variable	Frequency (%)
Age	
Mean (SD)	38.60 (7.1)
Range	24-55
Parity	
P0+0	45 (42.5)
P0+x	41 (38.7)
P≥1	20 (18.9)
Indication for hysteroscopy	
Intrauterine adhesions	53 (50.0)
Preparatory for IVF	32 (30.2)
Fibroid/polyp	11 (10.4)
Abnormal uterine bleeding	10 (9.4)
Previous adhesiolysis	
No	79 (74.5)
Yes	16 (15.1)
Blind hysteroscopy	11 (10.4)
Type of instrument used	
Scissors	81 (76.4)
Resectoscope	11 (10.4)
Shaving	2 (1.9)
None	12 (11.3)
Treatment outcome	
Normal menses	69 (65.1)
Scanty menses	23 (21.7)
No menses	8 (7.5)
Need for repeat	6 (5.7)

SD – Standard deviation, IVF – *In vitro* fertilization

Thirty-nine (38.8%) women had IVF treatment after hysteroscopy. Outcome was successful in 16 women, a pregnancy rate of 41%. Further analysis showed that over 50% of those with previous failed IVF had successful pregnancy outcome following hysteroscopy (7/12: 58.3) but this was not statistically significant, $P = 0.143$ [Table 3].

DISCUSSION

In gynecology practice, hysteroscopy is the standard procedure for diagnostic evaluation of the uterine cavity and for operative treatment of uterine abnormalities such as IUAs, submucosal leiomyomas, and endometrial polyps. In this study, these abnormalities occurred mostly among nulliparous women in their reproductive age, lending credence to the association between hysteroscopy and menstrual and/or fertility challenges. Our findings demonstrate that IUA was the most common reason for hysteroscopy in this study. Berman¹¹ have reported IUAs to be a common indication for hysteroscopy. We also observed that pre IVF evaluation is becoming a common indicator for the procedure. Similar findings have been documented; in addition, other indications as was seen in this study could be abnormal uterine bleeding, submucous fibroid or polyp, congenital uterine malformation.^{2,3,11,12} Aghahosseini *et al.*¹⁰ noted that pre-IVF evaluation is an increasingly common reason for hysteroscopy. This was corroborated in this study where IVF work up closely followed IUAs as common indications for hysteroscopy.

Table 2: Association between grade of intrauterine adhesions at surgery and treatment outcome

Findings	No menses	Treatment outcome		
		Scanty menses	Normal menses	Need for repeat
Normal	0	2	4	0
Mild adhesion	1	1	16	0
Moderate	2	7	14	1
Severe	5	11	14	2
Adhesion + fibroid	0	2	3	1

Table 3: Outcome of *in vitro* fertilization after hysteroscopy

	Frequency (%)		
Prior hysteroscopy before IVF			
Yes	39 (38.8)		
No	67 (63.2)		
Outcome of IVF ($n=39$)			
Successful	16 (41.0)		
Not successful	23 (59.0)		
	Successful (16)	Not successful (23)	<i>P</i>
Previous failed IVF ($n=39$)			
Yes (12)	7	5	0.143
No (27)	9	18	
IVF – <i>In vitro</i> fertilization			

Irrespective of the uterine pathology identified at hysteroscopy the goal of operative treatment is to restore anatomical and functional integrity of the uterine endometrium (cavity) with potential for reproduction.^{13,14} Majority of women reviewed in this series had the procedure of adhesiolysis done to remove IUAs. Adhesiolysis was done mainly with scissors. Similar to our findings adhesiolysis using scissors or biopsy forceps have been shown to allow effective dissection while avoiding complications from excessive cervical dilatation associated with use of resectoscopes and energy sources.^{4,15} We also employed energy sources for some cases (especially those with severe adhesions) with no complications. The Intrauterine Bigatti Shaver[®] an improved resecting device was also used in few cases without complications.¹⁶

The observed outcome following hysteroscopy in this study was good. Most clients who had hypomenorrhea had return to normal menses, this is in line with studies that showed the efficacy of hysteroscopic adhesiolysis in the treatment of IUAs.^{3,9,12} However, in few cases of severe IUAs, there was difficulty with adhesiolysis. Severe adhesions has been reported to be difficult to overcome; with multiple stage adhesiolysis advised in order to avoid complications.¹⁷

Although there is no consensus on routine use of hysteroscopy prior to IVF treatment; potential benefits of hysteroscopic surgery in subfertile women with polyps, fibroids, septate uterus, or IUAs have been documented.^{10,18,19} Hysteroscopy is one of the common interventions proposed after recurrent IVF failure to ensure normality of the uterine cavity before ET.²⁰ This was evident in this review with an IVF success rate of 58% following hysteroscopy for women with previous failed IVF treatment. The effectiveness of hysteroscopy in improving the prospects of infertility treatment is thus supported. A recent systematic review and meta-analysis reported that the outcome of IVF treatment could be improved in patients who have experienced recurrent implantation failure if an outpatient hysteroscopy is performed before starting the new treatment cycle.¹⁸

Hysteroscopy is a well-tolerated and effective minimally invasive procedure, which allows reliable assessment of the uterine cavity but it could be associated with complications related to the procedure, the distending media or postoperatively. The most common procedure-related complication is uterine perforation. Other complications are cervical injuries, anaphylactic shock, noncardiogenic pulmonary edema, gas embolism with carbon dioxide, postoperative ascending infections, and hematometria.^{4,5} In this study, we documented complication of fluid overload in one procedure. Scrupulous fluid management and attention to surgical principles is advocated to limit the occurrence of this serious complication. Other complications were not recorded in this review.

CONCLUSION

Overall hysteroscopy procedures offer a safe and effective treatment for varying intrauterine/endometrial pathologies.

In addition, it has become a useful adjunct for improving IVF outcome especially for those with repeated failed treatment.

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Conflicts of interest

There are no conflicts of interest.

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