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**HYSTEROSCOPY IN THE TROPICS; HOW SAFE? A REVIEW OF
CLINICAL PRACTICE IN AN ASSISTED CONCEPTION UNIT.**

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ABSTRACT

Background: Hysteroscopy has opened up new diagnostic vistas for the evaluation of the cervical canal and uterine cavity. Intra-uterine lesions play an important role in the outcome of assisted conception procedures.

Objective: The aim of the study is to examine the procedure and its complications.

Materials and Methods: A descriptive retrospective study of 80 patients who had hysteroscopy between January-December, 2007.

Result: Seventy five percent of the study population had intra-uterine pathologies with myomectomy being the most common procedure performed. Complications were minor and rare.

Conclusion: Hysteroscopy is important in the evaluation of the uterine cavity prior to assisted conception. It is safe in skilled hands.

Keywords: Hysteroscopy, Assisted conception.

INTRODUCTION

Modern gynaecological surgery has undergone a revolution since the 1970s and 1980s, a revolution characterized by the realization that many patients formerly treated by laparotomy could be managed by laparoscopic or hysteroscopic surgery.

Only a third of in-vitro fertilization (IVF) cycles started end in a pregnancy and one fourth result in a live birth¹. Recurrent IVF implantation failure (two or more failed IVF cycles) is a very distressing experience to patients² and increases the financial burden on the couple or service provider. The aetiology of recurrent IVF implantation failure can be broadly attributed to embryonic or uterine factors, but remains unexplained in many cases³.

One of the common investigations proposed after recurrent IVF failure is outpatient hysteroscopy. Hysteroscopy is a well-tolerated minimally-invasive procedure, which allows reliable visual assessment of the cervical canal and uterine cavity and provides the opportunity to perform therapy in the same setting⁴.

It has been shown that uterine factors play about 15-20% role in contributing to female infertility⁵. Hence evaluation of the uterine cavity prior to assisted conception is vital. Hysteroscopy therefore is frequently a standard procedure performed as part of infertility work up in many fertility clinics before assisted conception.

With recent technical innovations, it is now possible to perform office hysteroscopy as an out patient procedure. Indications vary from diagnostic to operative (surgical). Pelvic inflammatory disease is an absolute contra-indication to the procedure due to the risk of ascending infection leading to further spread of the disease. Every effort must be made to exclude pregnancy before hysteroscopy.

Hysteroscopy permits the inspection of the cervical canal and uterine cavity, evaluation of the tubal ostia and the proximal intramural segments of the fallopian tubes. It provides a panoramic view of the uterine cavity and a 5mm outer diameter hysteroscope will suffice for diagnostic purposes. The

7mm outer diameter rigid hysteroscope which is normally equipped with two channels is used for operative purposes.

There is a clear correlation between the diameter of the hysteroscope and the use of anaesthesia. The larger the diameter of the scope, the greater the need for anaesthesia. Distension media may be gaseous (CO₂) or liquid (saline, glycine, sorbitol). The choice often depends on the type of procedure performed i.e. either diagnostic or operative.

Complications arising from hysteroscopy like any other endoscopic procedure are minimal but may be fatal and broadly can be as a result of trauma, haemorrhage, infections, thermal and those relating to overload of the distension media. However, the procedure is adjudged safe in experienced hands. There is an unmet need in the tropics due to lack of endoscopic equipments and manpower with the requisite skills.

OBJECTIVE(S)

- 1) To provide an audit of hysteroscopic procedures in an assisted conception unit in the tropics.
- 2) To examine the complications related to the procedure thereby evaluating its safety.

MATERIALS AND METHODS

A descriptive retrospective cohort study of all patients who underwent hysteroscopy for infertility for a period of 12 months between January-December, 2007. During the Study period, 80 patients had hysteroscopy at the Nordica Fertility Centre, Lagos, Nigeria. Data were collected for demographic characteristics, intra-operative diagnosis, mode of anaesthesia, operating time and complications. Statistical analyses were done using the SPSS 13 software.

RESULTS

A total of 80 patients had hysteroscopy done during the study period. All procedures were done by specialist gynaecologist. The mean age was 37.83 ± 6.26 years with a range of 28- 54 years. Majority (85%) of the patients were professionals. The mean body mass index was 27.2 ± 4.38 Kg/m² with a range of 19.73- 38.54 Kg/m².

All patients in the study group were infertile hence their referral to an assisted conception unit. The mean duration of infertility was 9.2 years \pm 3.62 years. Twelve patients had primary infertility while sixty-eight had secondary infertility. Hysteroscopic myomectomy was the most common procedure performed as it accounted for 30% of the procedures done. Other procedures performed include polypectomy (22.5%), adhesiolysis (20%), resection of uterine septae (2.5%) and diagnostic hysteroscopy (25%).

Anaesthetic requirements varied according to the procedure performed at hysteroscopy. General anaesthesia was required in both patients who had septae resection (100%), 18(75%) of those who had myomectomy, 6(37.5%) of those who had adhesiolysis and 3(16.7%) of those who had polypectomy. No patient in the diagnostic group required general anaesthesia with only 5(25%) requiring mild sedation.

Average duration of hysteroscopy was 12.3 ± 2.7 minutes with a range of 10- 17 minutes. Complications were mostly minor occurring in 3.7% of the patients.

Table 1. Age distribution of patients who had hysteroscopy.

Age group (years)	Frequency.	%
< 30	13	16.25
30-37	48	60.0
>37	19	23.75
Total	80	100.0

Table 2. Occupation of patients who had hysteroscopy

Category	Frequency.	%
Professionals.	68	85.0
Non-Professionals.	7	8.75
Unemployed.	5	6.25
Total	80	100.0

Table 3. Frequency distribution of hysteroscopic procedures.

Procedure.	Frequency.	%
Myomectomy	24	30.0
Diagnostic	20	25.0
Polypectomy	18	22.5
Adhesiolysis	16	20.0
Septae resection	2	2.5
Total	80	100.0

Table 4. Frequency distribution of complications.

Complication.	Frequency.	%
Post op pain	1	1.25
Vaginal discharge	1	1.25
Haemorrhage	1	1.25
None.	77	96.25
Total	80	100.0

Table 5. Anaesthetic requirements.

Procedure.	Number (n).	General Anaesthesia.		Sedation.		None.	
		n	%	n	%	n	%
Myomecyomy	24	18	(75)	4	(16.7)	2	(8.3)

Polypectomy	18	3 (16.7)	12 (66.6)	3 (16.7)
Adhesiolysis	16	6 (37.5)	5 (31.25)	5 (31.25)
Septae resect.	2	2 (100.0)	0 (0.0)	0 (0.0)
Diagnostic.	20	0 (0.0)	5 (25.0)	15 (75.0)
	80	29 (36.25)	26 (32.5)	25 (31.25)

DISCUSSION

Hysteroscopy remains a vital step in the evaluation of the infertile woman. It is one of the earliest approaches to the direct study of the uterine cavity. Since the early 1980s, hysteroscopy has opened up new diagnostic vistas for the evaluation of the cervical canal and uterine cavity, revealing the limits of dilatation and curettage⁶.

With modern technological innovations, it is now possible to perform a comprehensive endoscopic evaluation of the uterine cavity in an office session without using any form of anaesthetic or dilating the cervical canal. Diagnostic hysteroscopy provides a virtually instant diagnosis, and is the logical precursor to operative hysteroscopy. The hysteroscopic view is best in the immediate postmenstrual phase, but a diagnosis is usually possible at any time, even during menstruation.

Majority of patients who had hysteroscopy were affluent people who could afford the services provided in assisted conception units evidenced by the fact that 85% of them were professionals whose earnings conveniently placed them in the upper middle class. This is further reinforced by the fact that fertility treatment costs in assisted conception units averaging about 7,000 US dollars per cycle are totally borne by the patients as health insurance policies in Nigeria do not cover such treatment.

The mean age of the patients was 37.83 years and the average duration of infertility was 9.2 years. Late presentation seems to be the norm in the tropics as most patients are often reluctant to seek orthodox care until when they have exhausted all other available options.

From the study, only 25% (20 patients) had diagnostic hysteroscopy. The remainder (75%) had surgical or operative hysteroscopy. The incidence of uterine pathologies in this study is much higher than what has been documented in literature. Most studies have reported an incidence of 19-50%³. A review done by Nandita et al⁵ in India revealed an incidence of

25.3%. However the age bracket of his study population was between 31-35 years which is much lower than the mean age of this study (37.83 years). The higher incidence of intra-uterine pathologies in this study may be as a result of the older age of these patients and the fewer cases studied (sample size).

Intra-uterine pathologies are known to contribute to female infertility thereby making hysteroscopy an important step before assisted conception. The role of routine hysteroscopy for infertile women is still a matter of debate⁸. Current guidelines suggest hysteroscopy to be unnecessary unless it is for the confirmation and treatment of doubtful intra-uterine pathology⁹. However evaluating the uterine cavity before proceeding with assisted reproduction is not out of place and may be beneficial^{10,11,13}. This study lends credence to that opinion as 75% of the study population had intra-uterine pathologies which were dealt with before assisted conception.

Anaesthetic requirements varied according to the procedure performed. Operative hysteroscopy with the attendant larger diameter scope required some form of anaesthesia. In this study, most of the patients (75%) who had hysteroscopic myomectomy required general anaesthesia. Those who had diagnostic hysteroscopy had either no anaesthesia or sedation with benzodiazepines and opioids.

Complications arising from the procedure were minimal and mostly minor. In this study, there were no major complications such as uterine perforation, visceral injury, air or fluid embolism amongst other recognized complications. The complication rate for this study was 3.75%. One patient complained of post operative pain relieved by oral analgesics (Non steroidal anti-inflammatory agents) while one patient complained of post operative vaginal discharge managed with antibiotics following culture and sensitivity tests. Infections are said to be rare following hysteroscopy, however may occur following operative hysteroscopy in cases where resected tissues are left in-situ. One patient had hemorrhage following submucous myomectomy with an average loss of 120mls of blood. The myoma was broad based requiring multiple electrocoagulation to arrest bleeding.

The average duration of the procedure was 12.3 ± 2.7 minutes with a range of 10- 17 minutes. All cases were done by specialist gynaecologist trained in endoscopy and all patients were discharged within 2 hours of the procedure. There is definitely a learning curve with longer operating times expected in trainees. Modern gynaecologic practice entails the acquisition of skills for

performing endoscopic procedures; particularly in the care of infertile women. There is an unmet need in the tropics.

CONCLUSION

It appears that hysteroscopic evaluation of the uterine cavity is essential in the tropics before assisted conception. Since most patients present quite late, there is a high likelihood of finding pathologies which may adversely impact on the outcome of assisted conception. This study found an incidence rate of 75% for intra-uterine pathologies amongst infertile women presenting in an assisted conception unit. Hysteroscopy is safe in skilled hands and can be done on an out-patient basis.

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