Hysteroscopy: A retrospective study of 507 cases

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Received: 18th January, 2019 **Accepted:** 4th February, 2019

Abstract
Introduction: Hysteroscopy is a minimally invasive intervention that can be used to diagnose and treat many intrauterine and endocervical problems. Given the safety and efficacy, diagnostic and operative hysteroscopy has become standard in gynecology practice.
Aims: A retrospective analysis of 507 case records of patients who underwent hysteroscopy between July 2017 and December 2018 was conducted. The indications for hysteroscopy, type of anesthesia employed and the procedure performed were studied.
Results: The most common indication for hysteroscopy was infertility. Most patients underwent hysteroscopy under general anesthesia. Thirty two percent of patients required total intravenous analgesia. Endometrial polypectomy and myomectomy were the commonly performed hysteroscopic procedures.
Conclusion: Hysteroscopy is a safe, minimally invasive and well tolerated procedure which is increasingly used worldwide as a first-line investigation for infertility, abnormal uterine bleeding and other diseases involving the uterine cavity. Technological advancements in the instruments have enabled the use of hysteroscopy as an out-patient procedure.

Keywords: Hysterosocopy, Infertility, Abnormal uterine bleeding.

Introduction
Hysteroscopy is a minimally invasive intervention to visualize the uterine cavity, and is used to diagnose and treat many intrauterine and endocervical problems from a trans-cervical approach. Dilatation and curettage (D&C) and hysterosalpingography (HSG) were standard procedures for evaluation of uterine pathology before the advent of hysteroscopy. Methodological and technological developments have made diagnostic and operative hysteroscopy more efficient, cost effective, safe, and useful. Hysteroscopy is most commonly indicated for abnormal uterine bleeding (AUB), but it is also used in cases of infertility and Mullerian anomalies.[1] Hysteroscopy, however, is considered the gold standard for diagnosis of intrauterine lesions.[2-4] Contraindications to hysteroscopy are: viable intrauterine pregnancy, active pelvic infection (including genital herpes infection),[5] known cervical or uterine cancer. Diagnostic and operative hysteroscopy can be performed without anesthetic or with a local anesthetic. Patients who cannot tolerate a procedure under local anesthesia, extensive operative procedures, or patients with co-morbidities that necessitate intensive monitoring require regional or general anesthesia.[6]

Materials and Methods
This is a retrospective study of patients who underwent hysteroscopy between July 2017 and December 2018 in the Department of Obstetrics and Gynecology, Geetanjali Medical College and Hospital, Udaipur, India. The Institution Ethics Committee provided approval for the conductance of this study. A total of 507 case records were reviewed. Those patients who underwent hysteroscopy for pathology suspected via another imagistic method were initially investigated using trans-vaginal ultrasonography or hysterosapingography (HSG). Prior to hysteroscopy Pap smear, complete blood counts and vaginal bacteriological reports were obtained. Antibiotics are not routinely administered during hysteroscopy for prevention of surgical site infection or endocarditis since post hysteroscopy infection occurs in less than 1% of women.[7] All patients were administered intracervical misoprostol (600 mg) 2 hours before the procedure. Hysteroscopy was performed after dilating the cervix using Hegar's dilator. Rigid hysteroscope (Stryker) 4 mm in diameter with 30 degree lens was passed through the internal os. Therapeutic interventions such as adhesiolysis, polypectomy, removal of myoma was perfomed using 10 mm operative hysteroscope and resectoscope.

The following parameters were studied: indications for hysteroscopy, hysteroscopic procedure performed and type of anesthesia used.

Results
Most patients in our study were aged 18-30 years (Table 1). The most common indication for hysteroscopy was infertility (Table 2). Most patients underwent hysteroscopy under general anesthesia. Thirty two percent of patients required total intravenous analgesia (Table 3). Endometrial polypectomy and myomectomy were the commonly performed hysteroscopic procedure (Table 4). No significant complications were documented other than mild perineal pain, vaginal bleeding and transient fever.

Table 1: Age distribution of patients who underwent hysteroscopy between July 2017 and December 2018 (N=507)

Age group (years)	n (%)
18-30	361 (71.20%)
31-40	122 (24.66)
41-50	16 (3.15%)
51 and above	8 (1.57%)

Table 2: Indications for hysteroscopy between July 2017 and December 2018 (N=507)

Indication	n (%)
Abnormal uterine bleeding	43 (8.48%)
Cervical poly	11 (2.16%)
Endometrial polyp	52 (10.25%)
Endometritis	6 (1.18%)
Infertility (primary/secondary)	338 (66.66%)
Myoma	31 (6.11%)
Oligomenorrhea	4 (0.73%)
Postmenopausal bleeding	2 (0.39%)
Primary amenorrhea	4 (0.78%)
Reatined products of conception/clots	2 (0.39%)
Secondary amenorrhea	6 (1.18%)
Uterine malformation	2 (0.39%)

Table 3: Type of anesthesia/analgesia used (N=507)

Type	n (%)
General anesthesia	342 (67.45%)
Total intravenous analgesia	165 (32.44%)

Table 4: Hysteroscopic procedure performed (N=507)

Hysteroscopic procedure	n (%)
Adhesiolysis	6 (1.18%)
Cervical polypectomy	11 (2.16%)
Endometrial aspiration	5 (0.98%)
Endometrial biopsy	11 (3.35%)
Endometrial polypectomy	52 (10.25%)
Myomectomy	31 (6.11%)

Discussion

In this paper the authors present the profile of 507 hysteroscopy cases at a tertiary care hospital located in the southern region of Rajasthan, India. In our study the most common indication for hysteroscopy was infertility. According to a review by Carneiro,[8] the position of hysteroscopy in current fertility practice is under debate. Although there is robust evidence on the technical feasibility, safety and effectiveness in the treatment of intrauterine pathologies, there is no consensus on the effectiveness of hysteroscopic surgery in improving the prognosis of sub-fertile women. Other researchers have reported that abnormal uterine bleeding is the most common indication for hysteroscopy.[9-11]

Hysterosalpingography (HSG) provides information on tubal patency and is recommended by the World Health Organization (WHO) for management of infertile women.[12] Hysteroscopy is recommended by the WHO when clinical or complementary exams (ultrasound, HSG) suggest intrauterine abnormality[13] or after in vitro fertilization (IVF) failure.[14] However, many gynecologists are of the opinion that hysteroscopy is a more accurate tool because of the high false-positive and false-negative rates of intra uterine abnormality with HSG.[15-17] This explains why many specialists use hysteroscopy as a first-line routine exam for infertility patients regardless of guidelines.[18]

The need for anesthesia or analgesia during hysteroscopy is a debatable matter. A multitude of factors may account for the lack of consensus regarding anesthesia in hysteroscopy such as the technique employed and on patient characteristics. The technical factors worthy of consideration are the various instruments and approach used, operator expertise, duration of the examination, different definitions of diagnostic hysteroscopy, and the possibility of combining the exploration phase with endometrial biopsy or with surgical treatment of the disease eventually found (''see-and-treat approach''). Patients with history of previous caesarean section and chronic pelvic pain, and patients in menopause may require analgesia.[19] Uterine characteristics or abnormalities such as cervical stenosis, and patient psychological characteristics also influence the perception of pain and the acceptability of the technique.[19]

In our study, endometrial polypectomy was the most commonly performed procedure which is consistent with the findings of a study by Mettler et al.[11] This requires that the negotiation of the hysterosocope through the internal cervical ostium. It is likely that repeated intrauterine maneuvers be performed depending on size, location, and characteristics of the polyp, and that enough time is taken to accomplish the procedure, all factors that may influence pain. Although it is claimed that modern operative hysteroscopes enable performance of most polypectomy procedures in the office setting without any anesthesia, the operation is not always successful and painless. Most literature suggests that in experienced hands, office hysteroscopy is well tolerated, and analgesia is required only in selected patients.[19] However, patients with endometrial polyps larger than the internal cervical os are likely to experience low or moderate intensity of pain.[20]

The present study has a few limitations, some of which are inherent to a retrospective study design. There may be under-reporting of complications, if surgeons failed to report a complication in the patient's case record. A study of 726 hysteroscopies found a complication rate of 1.65% in which false passage and perforation of uterine cavity were reported.[11] Another limitation is the likelihood that not every patient with complications after hysteroscopy returned to the hospital; they might have consulted their general practitioner. However, this seems unlikely because after the hysteroscopy every patient received the instructions to contact the gynecologic outpatient clinic in case of fever, vaginal bleeding or severe pain. Also cases in which the symptoms of infection were less pronounced and did not

lead to consultation could have been underreported. Future researchers may attempt to overcome these limitations by adopting a longitudinal study design with a focus on complications. Despite its limitations, the present study reaffirms the notion that hysteroscopy is the first-line investigation for primary or secondary infertility. The authors recommend performing a diagnostic hysteroscopy before assisted human reproduction procedures besides HSG.

Conclusion

Hysteroscopy is a safe, minimally invasive and well tolerated procedure which is increasingly used worldwide as a first-line investigation for infertility, abnormal uterine bleeding and other diseases involving the uterine cavity. The primary limitations to its widespread use are pain and low patient tolerance which may necessitate the use of analgesia or anesthesia in selected patients. Technological advancements in the instruments have enabled the use of hysteroscopy as an out-patient procedure.

Conflict of Interest: None.

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How to cite this article: Mathur KL, Srivastava S, Makwana S, Gupta A. Hysteroscopy: A retrospective study of 507 cases. *Indian J Obstet Gynecol Res* 2019;6(1):38-40.