

A Retrospective Analysis of 4800 Office Hysteroscopies at a Single Center

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ABSTRACT

Objective: Evaluation of the viability of office hysteroscopy in an Indian context at a single center. To encourage budding gynecologists to perform office hysteroscopy, which is possible with successful results with the correct strategy, method, and setting.

Methods: Observational analysis in retrospect. Between January 2011 and January 2022, 4827 women had office hysteroscopy at our center. Around 1627 instances of office hysteroscopy with a Bettocchi 2.9 scope and a Hamou endomat were performed from 2011 to 2022 and 3200 hysteroscopies with Bettocchi 1.9 scope and Endometrial automatic suction irrigation system (EASI) (2011–2022). The distension media utilized was regular saline. Hamou endomat parameters included a 200 ml/min drip rate, a 75-mm Hg irrigation pressure, and a 0.15 suction bar. Bettocchi 4 (1.9 mm) and Bettocchi 5 (2.9 mm) scope settings with EASI were 45 mm Hg. An experienced operator with office hysteroscopy training performed the hysteroscopy. Every operation was performed during the early proliferative period (4th–11th day). Key outcome measurements were complications, success and failure rates.

Results: In roughly 4821 of instances, hysteroscopies were successful; however, 35 patients had pathology that required a two-step treatment. The majority of the hysteroscopies (2470; 51.2%) were diagnostic ones, while the remaining (2357; 48.83 %) were surgical ones. A vasovagal attack affected just two patients (2 of 4827).

Conclusion: Together with reduced pressure, continuous flow irrigation, and vaginoscopic technique, advising the patient for ambulatory hysteroscopy played a crucial role in the outpatient environment in helping the patient deal with discomfort and anxiety. This method is made easier by recent developments in technique and apparatus, which may stimulate a wider acceptance by the gynecological community.

Keywords: Office hysteroscopy, Operative hysteroscopy, Pain score, Single center.

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INTRODUCTION

Hysteroscopy derives from the Greek words for uterus and gaze, respectively, which are hysteros and scopy. Hysteroscopy made it possible to visualize a small, dark region, which was previously difficult. In the past, hysteroscopy was seldom performed, and the majority of intrauterine disorders were diagnosed and treated with dilatation and curettage (D&C) or pipelle. The endometrium sheds each month, and the endometrial cavity is a virtual cavity. Distension medium allowed for the visualization of the endometrial cavity thanks to advancements in the area of endoscopy. The uterine cavity could be evaluated thanks to office hysteroscopy, which eliminated all the drawbacks of D&C as well as other blind procedures.¹ Bettocchi and Selveggi originally introduced the vaginoscopic technique (no touch) to treat patients having office hysteroscopy to reduce the feeling of discomfort brought on by the speculum and vulsellum.² During vaginoscopy, the cervix can be seen by following mucus, blood, or coil threads from the cervical os.³ The transition between diagnostic and surgical hysteroscopy has been made possible by “see and treat hysteroscopy.”¹ Office hysteroscopy has become simpler because of hysteroscopes with smaller diameters.¹ As a result, operating rooms are now less overworked. Saline solution was used as the distension medium because it allowed for the application of bipolar energy, which decreased heat dispersion in the tissue throughout the treatment and decreased the likelihood of complications.¹ The uterine cavity can be evaluated by hysteroscopy.⁴ The improved “grip biopsy” method developed by Bettocchi gave the pathologist more tissue for diagnosis, thanks to the biopsy forceps.⁵ A paradigm change

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from a “inpatient” environment to a “outpatient” setting has occurred with the introduction of small 5 Fr auxiliary equipment (scissors, graspers, biopsy cups, and bipolar electrodes).⁶ The objective of the current study is to evaluate the viability of outpatient hysteroscopy in Indian context.

AIM

The purpose is to determine whether office hysteroscopy is practical in an Indian environment.

METHODS

Patient Selection

This hospital-based retrospective analysis took place between 2011 and 2022 in India at a tertiary care teaching institute. Before the operation, women were counseled in the outpatient clinic and a signed informed consent was acquired.

Surgical Technique

The patient was positioned with her buttocks protruding from the table in the lithotomy posture. There was a single tablet of cefixime 200 mg used 4 hours, tablet 200 microgram misoprostol per vaginal 5 hours before the procedure and injection atropine 30 minutes before the surgery, and the hysteroscopy was carried out using a vaginoscopic technique without the use of Sim's speculum and vulsellum to find and stabilize the cervix. "No touch method," in which the labia majora are simply separated with a light touch without any cervical dilatation, allowing the 30° oblique hard tiny scope to be placed into the vagina. The distension medium was normal saline in diagnostic and glycine in operative hysteroscopy, and the pressure used was the same as the intrauterine pressure. Between 2011 and 2022, 3200 hysteroscopy procedures utilized 2.9 mm Bettocchi scopes and 1627 procedures used 1.9 mm Bettocchi scopes. The patient received assistance from a nurse or a resident during the treatment (a "vocal local"), which helped to reduce her anxiety. The surgeon additionally included the patient in the process by inviting her to look at the monitor while also clarifying any irregularities that could have been present. The posterior fornix was seen following the insertion of the scope perpendicular to the axis of the vagina. The scope was advanced into the internal OS, aligned with the localized external OS, which had fluid distension. The uterine cavity was assessed upon entry and from a sweeping vantage point. The lateral walls and bilateral tubal ostia could be seen, thanks to the scope's barrel and bridge being turned. The posterior wall may be seen by 180° twisting the barrel. A negative hysteroscopy is avoided by closing the inflow, lowering the pressure, and ruling out any minor intrauterine lesions at the conclusion of the test. Each pathology that was discovered was assessed and treated in accordance with its kind. To treat vasovagal episodes, additional anesthetic support and emergency medications such injectable atropine were kept on hand. After the treatment, the patient was released home after being monitored for 30 minutes for any pain, discomfort, or other issues. After five days, the patient was contacted for a follow-up appointment or called the doctor with any problems.

Data Collection

Retrospective data collection and analysis were used.

Inclusion requirements were any female patients who need to have their endometrial cavities evaluated for abnormal uterine bleeding (AUB), postmenopausal bleeding, fibroid, polyp, infertility, or before doing *in vitro* fertilization, teenage females with related congenital abnormalities and menstruation difficulties, and geriatric (older than 65 years). Excessive menstrual bleeding and active genital infections, such as herpes, are exclusion criteria. Others are suspected pregnancy, ectopic pregnancy, or abortion and secretory phase of the menstrual period.

The following criteria were used to gauge how well the process worked:

- Anesthesia/analgesia is required.
- According to the visual analog scale (VAS) score, the pain level.

Table 1: Hysteroscopy performed on a range of age groups

S. No.	Group	No. of cases	Total percent (N = 4827)
1.	Adolescent	16	0.57
2.	Reproductive	2620	54.27
3.	Premenopausal	1578	32.7
4.	Postmenopausal	613	13.62
Total completed procedures:		4821	
Total incomplete procedures:		6	

Table 2: Diagnostic office hysteroscopies

S. No.	Diagnosis	No. of cases (N = 2470)	Percent (N = 4827)
1.	Normal	2435	50.45
2.	Endometritis	202	4.18
3.	Endometrial carcinoma	8	0.16
4.	Uterine septum	1537	31.84
5.	Superficial adenomyosis	645	13.36

Table 3: Operative office hysteroscopies

S. No.	Procedure	No. of cases (N = 2357)	Percent (N = 2357)
1.	Polypectomy	1548	65.7
2.	Myomectomy	67	2.84
3.	Asherman syndrome adhesiolysis	84	3.56
4.	Uterine septal resection	339	14.38
5.	Retained products of conception removal	302	12.8
6.	Impacted IUCD removal	16	0.67
7.	Procedure: Osseous metaplasia	1	0.04

- Finalization of the process.
- Complications such profuse bleeding and vasovagal attacks.
- Second sitting is necessary; Asherman syndrome.
- Endometritis-like infection.

RESULTS

Age Group of the Patients

The bulk of the 4827 instances (2620) belonged to the reproductive age group, while 1578 were premenopausal (28 ± 2 years) and 16 were young adults, and 613 were postmenopausal (51 ± 4 years and no menstruation for 1 year) women (Table 1). Six of the 4827 hysteroscopic operations that were attempted had to be finished in the second setting because the polyps were larger than 4 cm. Patients received counseling and approved of a second appointment (Table 2).

Classifying among Diagnostic and Operative Hysteroscopy

A total of 2470 of the 4827 performed hysteroscopies were diagnostic tests, while 2357 were surgical procedures (Table 3). Endometritis, as defined by the macroscopic Cicinelli hallmarks of micropolyps, hyperemic regions surrounding glands, and stromal edema, was discovered in 202 instances among patients undergoing diagnostic hysteroscopies; 135 of these cases were

Table 4: VAS score

Scope	None	Mild (1 ± 3)	Moderate (4 ± 7)	Severe (8 ± 10)
2.9 mm (n = 1627)	1043	477	107	0
1.9 mm (n = 3200)	2146	1012	42	0

later identified as having tuberculous endometritis by tuberculosis polymerase chain reaction). *In vitro* fertilization failures accounted for 810 cases. Eighty women had endometrial cancer that had been identified. Approximately 645 people were identified as having superficial adenomyosis, while 1537 were confirmed to also have a uterine septum. The bulk (2435) had a healthy uterus (Table 4). 1548 instances of polypectomy, 302 cases of excision of retained tissues, including 67 instances of submucous myoma (4.0–5.0 cm) received myomectomy using bipolar needle by slicing method or monopolar resectoscope, with each piece being removed afterwards, as part of operational hysteroscopy. The excision of 339 septa was performed using a combined of scissors and a bipolar needle. In 16 cases, affected intrauterine contraceptive devices (IUCDs) were removed, and in one instance, osseous metaplasia occurred. Semirigid scissors were used to treat intrauterine adhesions, such as those caused by Asherman syndrome (84 instances), and a bipolar hook was needed for thick adhesions.

Pain Scoring

The majority of the patients provided a VAS score of 0 (1627 with 2.9 mm and 3200 with 1.9 mm).

DISCUSSION

The therapy of intrauterine diseases in women having AUB has changed as a result of hysteroscopy.⁷ The majority of surgical hysteroscopies was polypectomies. They were removed with a grasper and hysteroscopy, tenaculum, or sliced into pieces by a bipolar needle and removed piece by piece, depending on their size and consistency. The bulk of the participants in 1920 research by Tangri et al.⁷ were infertile sufferers. A total of 445 (23.6%) individuals who had diagnostic office hysteroscopy exhibited anomalies, whereas 1435 (76.3%) had a normal uterine cavity. According to Tangri et al.'s study,⁷ 94 women (59.11%) had normal uterine cavities whereas 65 women (40.8%) displayed abnormalities. In this study, abnormalities detected were endometritis (10.7%), endometrial carcinoma (9.8%), uterine septa (1.43%), and superficial adenomyosis (1.7%). In the study by Tangri et al.,⁷ anomalies such as endometrial polyps (24.5%), polypoidal hypertrophic endometrium (8.8%), submucous fibroids (3.1%), hyperemic cavity (1.2), and others were found. The success rate was 98.66% of 3000 attempted hysteroscopies. In each and every hysteroscopy, the vaginal route was used effectively. According to a research conducted by Cooper, the vaginoscopic procedure was effective in the majority of hysteroscopies (83–98%).² The two-step approach seems to be efficient and secure, according to a research of Di SpiezioSardo et al.,⁸ but the prolonged GnRH agonist (gonadotropin hormone releasing hormone) medication and repeated hysteroscopies might make patients feel worse. In our investigation, the GnRH medication was administered to patients with more than 3 cm of submucosal grade 0 myoma. As hysteroscopy may be performed while protecting the hymenal ring, it is beneficial for the detection and treatment of Mullerian malformations.⁹ Indications in our series included primary amenorrhea with endometrial Koch's, vaginal septum, and cervical stenosis with hematometra. In 213

(4.4%) of the instances, uterine septa were discovered; none of the individuals in our research had vaginal septal excision. According to a case report by Shih et al.,⁹ a vaginal septum was removed from a teenage virgin with uterine didelphys, blocked right hemivagina with vertical vaginal septum, and right renal agenesis without harming the hymen ring. According to Tasma et al.,¹⁰ misoprostol was previously utilized for dilatation in postmenopausal women with a stiff cervix. Owing to the gastrointestinal side effects and the hypoestrogenic condition, it is ineffective for treating pain and encourages these women to have office hysteroscopy instead. When there is fibrosis, we employ a 5 Fr grasper in the surgical channel to open up the stenotic internal or external OS without inflicting pain as there are no blood vessels or nerve terminals in the fibrosed tissue. Intrauterine contraceptive device users may be treated in an office environment, which is more accessible and less costly for the patients and the hospital¹¹ when there are absent strings on thread checks or during removal. Prabhakaran and Chuang claim that office hysteroscopic removal, which does not involve anesthesia or cervical dilatation, can alleviate the agony of intrauterine examination for a misplaced IUCD.¹¹ With speedier rehab and a quicker return to regular activities, office hysteroscopy is widely accepted.¹² There is a learning curve for the process, and mastery of the skill requires intensive practice with this modality.³ Office hysteroscopy may be recommended as the reference standard for the study and treatment of diseases associated with heavy menstrual bleeding due to its reusability, which supports our “see and treat” approach.¹³ Two of the patients in our research had vasovagal attacks, which is presumably why saline was used as the distension medium. There were no more issues found. According to Agostini et al., who assessed the incidence of vasovagal crisis in 2079 women undergoing ambulatory hysteroscopy, episodes were considerably more common when CO₂ was used, independent of the patient's menopausal state, parity, or the reason for the hysteroscopy.¹⁴ There was no discernible difference between the local analgesic and control groups in the occurrence of vasovagal episodes among women having office hysteroscopy in a research by Cooper et al.¹⁵ In a research by Carlos De Angelis et al., it was discovered that group B (2.7 mm mini-hysteroscope) had a lower incidence of moderate-to-severe pain than group A (4 mm conventional scope) when pain intensity was graded using the four VAS classifications (severe, moderate, mild, no pain).¹⁶ In our study, 1.9 scope had less pain. As a result, the diameter of the scope can be directly proportionate to the intensity of the discomfort. Hysteroscopic operations are now safer because to bipolar electrosurgical technology, tiny diameter scopes with operating channels, and continuous flow systems. Treatment of adhesions and endometrial polyps that are comparable in size to or smaller than the procedure may be accomplished with the use of holding forceps and scissors.⁶ Therapeutic operations, such as submucous myomectomy and polypectomy, adhesiolysis, can also be carried out in an outpatient setting, minimizing the need for an extra sitting.¹¹ The idea of a “see and treat” environment that is effective, safe, and convenient with “one stop” gynecology in an outpatient setting where the patient “ambulates in” and “ambulates out” has matured.³ As a result, diagnostic and surgical hysteroscopy performed outside of a hospital is becoming more popular.¹⁵ A large number of samples and a retrospect study methodology were advantages of our investigation. The study's assessment of participants from various age groups and reduced selection bias were both advantages. Our study had a few drawbacks, including the absence of unreported data that may have introduced bias. The study was carried out at a single

center, which may not accurately represent the findings across all of India's centers. Moreover, proper training and supervision are required for office hysteroscopy. The 30-degree forward oblique scope must be used to enter the cervical canal and subsequently the internal OS to perform the vaginoscopic procedure (no touch), according to Bettocchi.

CONCLUSION

Office hysteroscopy is a quick and easy way to examine the uterine cavity and undertake diagnostic and therapeutic treatments for a variety of gynecological causes all in one place ("see and treat" approach). The additional benefit of the vaginoscopic technique is that it allows for vaginal examination and may be done in an office environment, which increases patient compliance with the treatment. Office operational hysteroscopy advances surgical techniques and reduces operating room expenses by reducing the necessity of both regional and general analgesia and hastening recovery times. The ease of office hysteroscopy is enhanced by the fact that many operations may be carried out with basic tools like graspers and scissors. Hence, outpatient hysteroscopy is more practical, safe, effective, convenient, quick to recover from, and cost-efficient than day care treatments. Just a small percentage of gynecologists conduct office hysteroscopy, but technological advancements have lowered the learning curve and should encourage more gynecologists to do this procedure because it is both patient- and operating surgeon-friendly.

AUTHOR CONTRIBUTIONS

Vineet Mishra and Smit Bharat Solanki wrote the main manuscript text. Khushboo Patel collected the data, and Smit Bharat Solanki performed the data analysis. All authors reviewed the manuscript.

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

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