

## PROSPECTIVE CLINICAL STUDY

# Role of Hysteroscopy in Gynecological Conditions

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## ABSTRACT

**Introduction:** Hysteroscopy offers a valuable extension of the gynecologist armamentarium, as uterine cavity can be explored in detail for making exact diagnosis. Hysteroscopy can be used for diagnosis as well as management of various gynecological problems. A study was conducted to evaluate the role of hysteroscopy in gynecological conditions.

**Materials and methods:** A prospective clinical study was conducted in the Department of Gynecology, Hindu Rao Hospital. Total 69 patients with abnormal uterine bleeding attending gynecology outpatient department were selected and subjected to hysteroscopic examination after detail history, examination and consent. Subjects were divided into six groups as per their history and examination.

**Observation:** In group I (DUB) 40.5%, in group II (infertility) 21.7%, in group III (postmenopausal bleeding) 11.6%, in group IV (suspected leiomyoma) 11.6%, in group V (lost IUCD) 7.3% and in group VI (secondary amenorrhea) 7.3% patients were there. Abnormal hysteroscopic findings were observed as follows, in group I: 85.71%, group II: 80%, group III: 80%, group IV: 62.5%, group V: 60%, group VI: 60% had. Out of 69 patients, in 73.91% patient's intrauterine pathology was seen on hysteroscopic examination. In our study commonest cause of abnormal bleeding was endometrial hyperplasia (28.5%), endometrial polyp (18%), proliferative endometrium (28.59%), endocervical polyp (3.6%), submucous myoma (3.6%) and atrophic endometrium (3.6%) patients. In patients with lost IUCD, removal of IUCD was done and adhesionolysis was performed in patient with secondary amenorrhea.

**Conclusion:** Hysteroscopy is simple, safe, quick, and economical technique which allows exploration of uterine cavity in precise manner with speed and safety. Diagnostic and operative procedures can be performed in the same time.

**Keywords:** Hysteroscopy, Endometrial cavity, Dysfunctional uterine bleeding, Submucous myoma, Endometrial polyp.

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## INTRODUCTION

Endoscopy has helped the medical science to improve and make more accurate diagnosis. It can pick up morphological

and functional changes in the organ more accurately. Evaluation of the epithelial surfaces of endocervical canal and endometrium, internal os, shape of the uterine cavity, tubal ostia is needed for proper diagnosis and observation of histological changes during menstrual cycle.

The curette has been the main tool in the hands of the gynecologist to feel and search for pathology in the uterine cavity. Hysteroscopy can be considered as a perfected curettage which can see and decide, because the uterine cavity can be observed and the area in question can be curettaged under direct vision. It also helps in avoiding the risks and difficulties of the alternative investigating procedures. After hysteroscopy the elective surgery of the patient can be better planned.

The hysteroscopy can be used in the diagnosis and treatment of gynecological patients which includes evaluation of abnormal uterine bleeding, uterine anomalies, abnormal hystero grams, and management of intrauterine adhesion, location and removal of misplaced IUDs, biopsy of potentially malignant lesions, verification of results of treatment. Performing a biopsy under vision gives a more accurate diagnosis. Therapeutic hysteroscopy is utilized in the removal of submucous leiomyomas, thick connective tissue adhesions, uterine septae, tubal insufflations and sterilization by tubal coagulation. The present study aims to evaluate the role of hysteroscopy in gynecology as an inexpensive, easy, diagnostic procedure by which pathological lesion can be directly visualized and managed especially, where there is difficulty in visualizing and reaching the diagnosis otherwise.

## MATERIALS AND METHODS

This study was conducted in the Department of Obstetrics and Gynecology of Hindu Rao Hospital, New Delhi, over a period of 1 year after obtaining approval ethical clearance. The cases were selected from outpatient department as well as those, admitted in gynecology wards.

A total of 69 patients were included in the study and these patients were classified into 6 groups (Table 1) as per their clinical history and diagnosis as follows:

*Group I:* Dysfunctional uterine bleeding

*Group II:* Infertility

*Group III:* Postmenopausal bleeding

*Group IV:* Suspected leiomyoma uteri

*Group V:* Lost IUDs with missing filament

*Group VI:* Secondary amenorrhea.

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## Preparation

All patients were admitted in the hospital prior to the procedure. Patients were kept nil orally since morning on the day of hysteroscopy. The patients were divided into 2 groups:

*Group A:* Patients were given injection pethidine 50 mg IV and injection phenargan 25 mg IM.

*Group B:* General anesthesia—This group included patients who were very uncooperative or those who needed concomitant surgery.

All hysteroscopy examinations were carried out in operation theater with 4 mm olympus telescope with full aseptic precautions Saline was used as distending medium. The anesthetist was available in the theater to provide general anesthesia if required. Once the hysteroscope was introduced, inspection of cervical canal and uterine cavity was done. Uterine fundus, each tubal ostium and the remaining cavity were inspected. Video camera was used for diagnostic purpose. In the end hysteroscope was removed under vision. A curettage was done and specimen sent for histopathology.

## OBSERVATION

The age of patients varied from 21 to 70 years, maximum patients, i.e. 26 (37.7%) were 31 to 40 years and 25 patients (36.3%) were in 21 to 30 age group. Out of 69 patients 18 patients (26.15%) were nullipara. The highest parity noted was para 6 (1.4%) in one case only. Nine patient (13.05%) were para 1, 12 patient (17.4%) were para 2, 12 patient (17.4%) were para 3, 12 (17.4%) were para 4 and 5 patient (7.2%) were para 5.

Minimum time taken for procedure was 15 minutes, including the time needed for cleaning and draping the parts. Maximum time taken was 30 minutes, these were the patients, where other concomitant surgical procedure had to be carried out along with the hysteroscopy.

Sixty patients where hysteroscopy was carried under pethidine + phenargan, were observed in the hospital for 4 hours. Those where general anesthesia was given were kept in the hospital for a duration of 24 hours. Patients were called to attend the OPD after an interval which depended upon case to case and further treatment planned.

Various indications for hysteroscopy are shown in Table 1. The common indication was DUB (40.50%), other indications for hysteroscopy were infertility (21.70%), Postmenopausal bleeding (11.60%), suspected leiomyoma (11.60%), Lost IUCD with irregular bleeding (07.30%) and secondary amenorrhea (07.30%).

In group 1 (DUB) 24 patient (85.71%) out of 28 had abnormal hysteroscopic finding (Table 1). Various pathological hysteroscopic findings observed in 28 patients is shown below (Table 2).

In group II (Infertility) 12 (80%) out of 15 had shown abnormal hysteroscopic finding as shown in Table 3. The commonest finding observed on hysteroscopy was blocked tubal ostia in 10 (66.6%) patients. In these cases, distending media was not seen passing through the ostia. In 9 out of these 10 patients diagnostic laparoscopy was carried out, the tubes were confirmed to be blocked in 7 (77.7%).

In group III (Postmenopausal bleeding) 4 patients (80%) out of 5 showed abnormal hysteroscopic findings. Atrophic endometrium was seen in 3 (37.5%) patients and endometrial polyp was seen in 1 (12.5%) patients. In

**Table 1:** Indications for hysteroscopy and abnormal findings in different groups

Groups	Indications	No. of patients	Abnormal findings
I	Dysfunctional uterine bleeding	28 (40.50%)	24/28 (85.71%)
II	Infertility	15 (21.70%)	12/15 (80%)
III	Postmenopausal bleeding (PMB)	08 (11.60%)	04/08 (50%)
IV	Suspected leiomyoma	08 (11.60%)	05/08 (62.5%)
V	Lost IUCD with irregular bleeding	05 (07.30%)	03/05 (60%)
VI	Secondary amenorrhea	05 (07.30%)	03/05 (60%)
Total patients		69	

**Table 2:** Various hysteroscopic findings in group I (DUB) (n = 28)

Sl. no.	Observations	No. of cases	Percentage
I	Abnormal findings	24	85.7
	Hyperplastic endometrium	8	28.5
	Endometrial polyp	5	17.8
	Proliferative endometrium	8	28.5
	Endocervical polyp	1	3.6
	Submucous fibromyoma (Fig. 1)	1	3.6
	Atrophic endometrium	1	3.6
II	Normal finding	4	14.3

**Table 3:** Various hysteroscopy findings in group II (infertility) (n = 15)

Sl. no.	Observations	No. of cases	Percentage
A	Hysteroscopic observation		
	(i) Abnormal findings	12	80
	Tubercular endometritis	1	6.7
	Leiomyoma uterus	1	6.7
	Blocked tubal ostia	10	66.7
	(ii) Normal findings	3	20
B	Histopath observation		
	– Proliferative endometrium	1	6.7
	– Secretory endometrium	14	93.3
C	Diagnostic laparoscopy observation		
	– Blocked tubes	7	77.7
	– Patent tubes	2	22.3

Group IV (suspected leiomyoma uteri) in 3 (37.5%) out of 8 patients leiomyoma was diagnosed, however in rest of the patients no myoma was revealed on hysteroscopy.

In group V (lost IUCD with irregular bleeding) in 3 patients (60%) out of 5 cases hysteroscopy revealed Cut in the uterine cavity. In one patient arms of copper T were embedded into the myometrium (Fig. 2). In all these 3 cases copper T was removed vaginally. In the 2 cases where IUD was not present in the cavity, IUD was seen to be lying in the abdominal cavity. In one patient IUD was removed laproscopically and in other patient by minilaparotomy as the IUD was found to be perforating the myometrium into the bladder. Rest of the 2 patients had expelled the IUCD per vaginally unnoticed. In group VI (secondary amenorrhea) 3 (60%) out of 5 had abnormal hysteroscopic findings. All these 3 patients had atrophic endometrium.

In the present study on 69 patients, the procedure failed on first attempt in 4 patients (7.25%). In 3 of these cases there was cervical stenosis and in 1 patient visualization of the uterine cavity was not very clear due to uterine bleeding provoked by the passage of the instrument. In all 4 cases, procedure was successful on 2nd attempt, however one patient required general anesthesia.

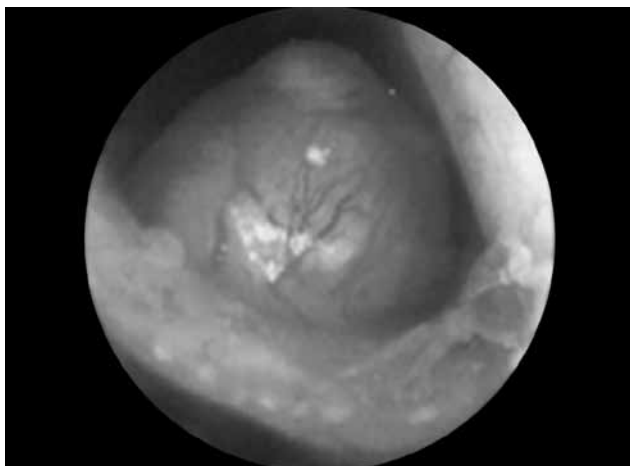


Fig. 1: Submucous myoma



Fig. 2: Arms of IUD embedded into the myometrium

## DISCUSSION

Fritz Nagele et al<sup>1</sup> evaluated the feasibility and acceptability of outpatient diagnostic hysteroscopy and found that most common indication for hysteroscopy was abnormal uterine bleeding (87%). Ariel Reviel et al<sup>2</sup> found hysteroscopy revealed more information than curettage in cases of abnormal uterine bleeding.

Garuti G et al<sup>3</sup> found that hysteroscopy showed sensitivity and specificity of 94.2 and 88.8% respectively in predicting normal or abnormal histopathology of endometrium. Arslan S et al<sup>4</sup> reported hysteroscopy has a positive predictive value of 71.4% and negative predictive value of 95.4% in diagnosing hyperplasia.

In the present study on 69 patients significant findings were detected in 74% patients. Among 69 patients, there were 28 patients (40.5%) with dysfunctional uterine bleeding. Dysfunctional uterine bleeding was the commonest indication for hysteroscopy in the present study. Lasmar RB et al<sup>5</sup> studied 4044 patients with abnormal uterine bleeding.

Dysfunctional uterine bleeding has been the commonest indication for hysteroscopy because it is difficult to make the correct diagnosis by pelvic examination. In the present study, 85.7% significant findings were observed in DUB group and in 14.29% no pathology was seen. Normal uterine cavity and cervical canal were found in 814 (20.1%) patients in Lasmar RB et al<sup>5</sup> study.

In our series the commonest cause of bleeding has been hyperplastic endometrium found in 28.50% cases, the endometrial polyp seen in 18% and proliferative endometrium was observed in 28.9% of patients. Endocervical polyp, submucous myoma and atrophic endometrium were the cause of bleeding in 3.6% patients. Lasmar RB et al<sup>5</sup> in their large study on 4044 patients with abnormal uterine bleeding found endometrial polyp as the most frequent hysteroscopic finding, accounting for 1,374 (33.9%) cases. Endometrial hyperplasia was diagnosed in 613 (15.1%) patients only.

In the present study, 15 patients were included in the group of infertility. Uterine and tubal pathology taken together were responsible for infertility in 80% patients. The uterine pathology was observed in 13.4% and ostial pathology in 66.6% in the present study. Tubercular endometritis was diagnosed in 6.7% cases which were proved on histopathological examination. Alwani et al<sup>6</sup> have also reported tubercular endometritis in 9.09% of his infertility patients in India.

In the present study, submucous leiomyoma uterus were detected in 6.7% infertility patients, Valle RF (1980)<sup>7</sup> observed myoma in 7.7% and Roll and Hilgrath<sup>8</sup> in 10% of cases. The results of the above authors are quite near to our study.

In the present study, tubal ostia were found to be blocked in 66.6% of cases. In 10 patients tubal blockage

was found on hysteroscopy, the diagnosis of blocked ostia by hysteroscopy was further evaluated by diagnostic laparoscopy with chromopertubation in 9 patients. In 7 patients, the hysteroscopic findings were confirmed by diagnostic laparoscopy. But in 2 patients (22.22%), diagnostic laparoscopy with chromopertubation revealed patent tubes, where ostia were seen to be blocked on hysteroscopy.

It can be concluded, that diagnostic laparoscopy with chromopertubation is probably the best way at present to find out the tubal patency, but the lumen of the fallopian tube can only be delineated by hystero-gram. Hysteroscopy is the method to detect intrauterine cause of infertility. Therefore the above 3 tests are complementary to each other in evaluating the uterine and tubal cause of infertility. Koskas et al<sup>9</sup> proposed office hysteroscopy as part of first line examination infertile women.

In postmenopausal bleeding hysteroscopy is invaluable, especially in confirming or ruling out the suspicion of endometrial carcinoma.<sup>10</sup>

In the present study, atrophic endometrium was the commonest finding seen on hysteroscopy in 37.5% cases in postmenopausal group. Alwani et al<sup>6</sup> observed atrophic endometrium in 60% of his cases.

Endometrial polyp was detected on hysteroscopy in 1 patient (12.5%) in our study. Lasmar RB et al<sup>5</sup> in their study found endometrial polyp in 1,374 (33.9%) cases.

Gorostiaga D et al<sup>11</sup> reported atrophic endometrium in 44% of cases in his study. Metello J et al<sup>10</sup> studied the diagnostic accuracy of hysteroscopy with endometrial biopsy for diagnosing endometrial carcinoma and found high accuracy in the diagnosis of endometrial neoplasia and its precursors. None of the patient had endometrial carcinoma in our study.

Diagnosis of leiomyoma can be established either by USG, HSG and curettage. However, these techniques can give false positive and false negative results. Hysteroscopy is more precise and confirmatory procedure. Hysteroscopy was carried out in the present series on 8 patients (11.6%) with the clinical diagnosis of leiomyoma uteri. Submucous myoma was confirmed in 37.5% patients only on hysteroscopy and in 62.5% patients cavity revealed no fibroid.

In the present study, 5 patients (7.3%) with missing filaments (group V) were included. Device was located in 60% of the cases and was removed in all the cases. Though X-ray abdomen and pelvis, and ultrasonogram can locate the IUD, but the exact localization of the device is difficult. Hysteroscopy protects the patient from the hazards of radiation. Moreover, it is easier and convenient than the radiological procedures. Hysteroscopy also obviates the need for blind and dangerous manipulations.

In our study in secondary amenorrhea group (group VI), In 60% of cases, atrophic endometrium was seen on

hysteroscopy. Khandwala<sup>12</sup> has studied 7 patients. He described synechia in 4 patients and normal uterine cavity in three patients.

The procedure failure rate in the present study was 7.25%. Hilgarth<sup>13</sup> and Khandwala<sup>12</sup> have reported low failure as 1.9 and 3.1% respectively. Patil et al<sup>14</sup> and Pellicano M et al<sup>15</sup> used normal saline as distending media in their study and observed that it is better tolerated by patients. We also used isotonic saline as distending media, which provides good visualization and better tolerated by patients.

## REFERENCES

1. Nagele F, O' Connor H. 2500 outpatients diagnostic hysteroscopies. *Obstet Gynecol* 1996;88(1):16-20.
2. Reviel A, Shushan A. Investigation of infertile couple. *Human Reproduction* 2002;17(8):1947-1949.
3. Garuti G, Sambruni I, Colonnelli M, Luerti M. Accuracy of hysteroscopy in predicting histopathology of endometrium in 1500 women. *J Am Assoc Gynecol Laparosc* 2001;8(2):207-213.
4. Arslan S, Aytan H, Gunyeli I, Koi O, Tuncay G, Tapisiz OL. Office hysteroscopic evaluation of endometrium: can we hit the target. *Arch Gynecol Obstet* 2004;13.
5. Lasmar RB, Dias R, Barrozo PR, Oliveira MA, Coutinho Eda S, da Rosa DB. Prevalence of hysteroscopic findings and histologic diagnoses in patients with abnormal uterine bleeding. *Fertil Steril* 2008 Jun;89(6):1803-1807.
6. Alwani CM, Ambiyen VR, Merchant RM. Diagnostic hysteroscopy: preliminary study of 60 cases 1983;33:250.
7. Valle RF. Hysteroscopy in the evaluation of female infertility. *Am J Obstet Gynecol* 1980;137:425.
8. Roll H, Hilgarth M. A report of 560 hysteroscopic operations. *Hysteroscopy: principles and practice*, chapter 3, page 25. Editor Siegler and Lindemann, 1984.
9. Koskas M, Mergui J, Yazbeck C, Uzan S, Nizard J. Office hysteroscopy for infertility: a series of 557 consecutive cases. *Obstet and Gynecol Int* 2010 (2010).
10. Metello J, Relva A, Milheras E, Colaço J, Retto H. Hysteroscopic diagnostic accuracy in postmenopausal bleeding. *Acta Med Port* 2008 Sep-Oct;21(5):483-488.
11. Gorostiaga D, AM Arrizabalaga J-L Lobato I Brouard J-M, Usandizaga A. Hysteroscopy: an alternative to dilatation and curettage in the diagnosis of post menopausal bleeding. *J Obstet Gynecol* 2001;21(1):67-69.
12. Khandwala SD. Hysteroscopy using CO<sub>2</sub> tubal insufflators without the vacuum cannula. *J Obstet Gynaecol Ind* 1986;36:955.
13. Roll H, Hilgarth M. A report of 560 hysteroscopic operations. *Hysteroscopy: principles and practice*, chapter 3, page 25, Editor Siegler and Lindemann, 1984.
14. Patil SG, Bhute SB, Inamdar SA, Acharya NS, Shrivastava DS. Role of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathologic correlation. *J Gynecol Endosc Surg* 2009 Jul-Dec;1(2):98-104.
15. Pellicano M, Guida M, Zullo F, Lavitola G, Cirillo D, Nappi C. Carbon dioxide versus normal saline as a uterine distension medium for diagnostic vaginoscopic hysteroscopy in infertile patients: a prospective, randomized multicenter study. *Fertil Steril* 2003;79(2):418-421.