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Original Research Article

Through the lens: a retrospective observational study of hysteroscopic findings in women attending a rural tertiary care centre

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ABSTRACT

Background: Hysteroscopy is considered the gold standard modality for direct visualization of the uterine cavity and evaluation of intrauterine pathology. It serves both diagnostic and therapeutic purposes in gynaecological practice. With increasing use of minimally invasive techniques, hysteroscopy has become an essential tool in the evaluation of abnormal uterine bleeding, infertility, recurrent pregnancy loss, and postmenopausal bleeding.
Methods: This retrospective observational study was conducted in the Department of Obstetrics and Gynaecology at a rural tertiary care centre. Medical records of women who underwent hysteroscopy during the study period were reviewed. Demographic details, indications for hysteroscopy, hysteroscopic findings and histopathological reports were collected from registers and digital hospital records. Data was analysed after entering into Google forms and Microsoft Excel.
Results: Among the 157 patients studied, most were perimenopausal women aged 40–49 years, followed closely by those aged 30–39 years. Polyps were the commonest indication for hysteroscopy, followed by infertility and leiomyoma. Hysteroscopic findings most frequently revealed endocervical polyps and normal uterine cavities, while polypectomy was a common procedure performed. Histopathological examination predominantly showed proliferative endometrium, with smaller proportions demonstrating endometrial hyperplasia and malignancy.
Conclusion: Hysteroscopy is a minimally invasive procedure which has proven to be valuable for evaluation of intrauterine pathology and provides accurate assessment of uterine cavity abnormalities. It plays a significant role in diagnosis and management planning in gynaecological practice.

Keywords: Hysteroscopy, Abnormal uterine bleeding, Infertility, Intrauterine pathology, Endometrial polyp

INTRODUCTION

Hysteroscopy is a minimally invasive gynaecological procedure that enables direct visualization of the vaginal canal, cervical canal along with the uterine cavity and it has emerged as the gold standard for diagnosis of intrauterine abnormalities. Owing to its ability to provide direct visualization of the endometrial cavity with the option of immediate tissue sampling or treatment, hysteroscopy is considered the reference standard for evaluating suspected intrauterine pathology, particularly

when non-invasive imaging findings are inconclusive.[1] The procedure has diagnostic as well as operative applications and is widely used in the evaluation of various gynaecological conditions such as abnormal uterine bleeding, infertility, recurrent implantation failure, recurrent pregnancy loss, retained products of conception, and postmenopausal bleeding.[2] It has an added advantage of accurate identification of lesions that may be missed by ultrasonography or blind curettage.[3] Overall , common hysteroscopic findings include endometrial polyps, submucosal fibroids, intrauterine adhesions, septate uterus, endometrial hyperplasia, and atrophic endometrium.[4,5]

Diagnostic hysteroscopy has demonstrated superior sensitivity and specificity compared with transvaginal ultrasonography, hysterosalpingography, and saline infusion sonography for detecting focal intrauterine lesions such as endometrial polyps, submucous fibroids, and intrauterine adhesions.[6] Furthermore, the vaginoscopic approach using small-diameter hysteroscopes has been shown to reduce procedural pain and improve patient acceptability without compromising procedural success.[7] Modernization in optics, miniaturization of hysteroscopes, and availability of office-based procedures have reduced the need for hospitalization and anaesthesia along with observed improved compliance. Hysteroscopy also possesses the advantage of simultaneous diagnosis and treatment, thereby reducing patient morbidity and healthcare costs.8

Hysteroscopy plays an important role in work up of infertility by aiding identification of subtle intrauterine abnormalities which may hinder implantation and affect pregnancy outcomes.[9,10] Additionally, it facilitates simultaneous therapeutic interventions to improve reproductive outcomes, hence reducing need for repeat procedures.[9] In infertile women, hysteroscopy not only detects unsuspected uterine cavity abnormalities but also permits immediate correction of treatable lesions, which may improve reproductive outcomes in appropriately selected patients.[6,11]

Despite the rising use of hysteroscopy in gynaecological practice, the spectrum of hysteroscopic findings varies according to patient population, indications, and institutional settings. Nevertheless, the prevalence and pattern of hysteroscopic abnormalities reported in the literature vary considerably across geographical regions, referral patterns, and clinical indications, emphasizing the importance of institution-specific data to guide clinical practice.[6] Hence, this study was undertaken to evaluate the pattern of hysteroscopic findings among women undergoing hysteroscopy at a rural tertiary care centre.

METHODS

This retrospective observational study was conducted in the Department of Obstetrics and Gynaecology at Mahatma Gandhi Institute of Medical Sciences, Sevagram: a rural tertiary care hospital. Duration of study was from January 2023 to April 2026.

Case records of women who underwent diagnostic and/or operative hysteroscopy during the study period were reviewed retrospectively using hospital information system, operative notes and procedure registers.

Data regarding age, indications for hysteroscopy, hysteroscopic findings, histopathological reports and Ultrasonography findings were collected and studied.

Inclusion criteria

All patients who underwent hysteroscopy in the study duration with complete medical records. Patients with primary or secondary infertility. Patients of reproductive age group with abnormal uterine bleeding. Perimenopausal women with abnormal uterine bleeding. Postmenopausal women with bleeding.

Exclusion criteria

Cases with incomplete medical records non availability of any parameter being studied. Patients with high risk co morbidities like cardiovascular diseases, diabetes mellitus etc. Patients with suspected or confirmed active genital infections.

Hysteroscopy was performed using a 30-degree rigid hysteroscope under appropriate anaesthesia and all aseptic precautions in the operation theatre. Normal saline was used as the distension medium. Findings observed during hysteroscopy were documented systematically as per routine.

Ethical approval was taken from the Institutional Ethics Committee.

The collected data was entered into Google Forms, Microsoft Excel and analysed using descriptive statistical methods.

RESULTS

Among the 157 patients studied, the majority were perimenopausal and belonged to the 40–49 years age group (35.03%), followed closely by the 30–39 years age group (33.12%). Patients aged 20–29 years constituted 20.38% of the study population. Lesser proportions were seen in the age groups 50–59 years (9.55%), 60–69 years (1.27%), and ≥70 years (0.64%) (Table 1). There was a total of 110 babies in the study including 3 sets of twins. There were 46 (41.8%) babies with IUGR. Eleven major adverse outcomes were noted in the study- 2 stillbirths, 6 babies required immediate respiratory support and three babies had respiratory distress subsequently. The commonest indication for hysteroscopy was polyps, accounting for 24.84% of cases, followed by infertility (22.92%) and leiomyoma (21.01%). Heavy menstrual

bleeding was experienced by 17.19% of patients, while menstrual irregularities and postmenopausal bleeding constituted 8.28% and 5.7% of cases, respectively (Table 2). Hysteroscopic evaluation showed endocervical polyps and normal findings as the most frequent observations, each seen in 39 cases. Leiomyoma was seen in 36 patients, while endometrial polyps were observed in 29 patients. Adhesions were present in 12 cases. Less common findings included uterine septum and ostial blockage, each identified in 2 cases, and intrauterine device with missing threads in 1 case (Table 3). Looking at procedures performed during hysteroscopy, polypectomy was the most common intervention, carried out in 49 patients. Endometrial biopsy was taken in 32 cases, followed by adhesiolysis in 11 patients. Resection of myoma was performed in 5 cases, while extraction of retained intrauterine device was performed in 1 patient (Table 4). Histopathological examination demonstrated proliferative endometrium as the most predominant finding in 56.05% of patients, followed by secretory endometrium in 16.5% of cases. Endometrial hyperplasia without atypia was observed in 11.46% of patients. Menstrual phase endometrium accounted for 3.82%, while endometrial hyperplasia with atypia and leiomyoma were both noted in 3.18% of cases. Endometrial carcinoma was diagnosed in 1.91% of patients. Other less frequent findings included absence of endometrial glands (2.54%), endocervicitis (0.63%), and cystic hyperplasia (0.63%) (Table 5).

Table 1: Age distribution.

Age group (in years)	Frequency	%
40-49	55	35.03
30-39	52	33.12
20-29	32	20.38
50-59	15	9.55
60-69	2	1.27
70 or more	1	0.64
Total	157	100

Table 2: Indication for hysteroscopy.

Indication	Frequency	%
Polyps	39	24.84
Infertility	36	22.92
Leiomyoma	33	21.01
Heavy menstrual bleeding	27	17.19
Post menopausal bleeding	9	5.7
Menstrual irregularities	13	8.28
Total	157	100

Table 3: Hysteroscopic findings.

Findings	Frequency
Endocervical polyp	39
Normal findings	39
Leiomyoma	36
Endometrial polyp	29
Adhesions	12
Uterine septum	2
Retained IUD	1
Ostial blockage	2

Table 4: Procedure done.

Procedure	Frequency
Endometrial biopsy	32
Polypectomy	49
Adhesiolysis	11
Resection of myoma	5
Extraction of retained IUD	1

Table 5: Histopathological findings.

Histopathology	Frequency	%
Proliferative endometrium	88	56.05
Secretory endometrium	26	16.5
Endometrial hyperplasia without atypia	18	11.46
Menstrual Phase	6	3.82
Endometrial hyperplasia with atypia	5	3.18
Leiomyoma	5	3.18
No glands seen	4	2.54
Endometrial carcinoma	3	1.91
Endocervicitis	1	0.63
Cystic hyperplasia	1	0.63
Total	157	100

DISCUSSION

The present study highlights the significant role of diagnostic hysteroscopy in evaluating intrauterine pathology among women presenting with abnormal uterine bleeding, infertility, postmenopausal bleeding, and other gynecological symptoms. Diagnostic hysteroscopy allowed direct visualization of the uterine cavity and facilitated accurate identification of intrauterine lesions, even in absence of detection on ultrasonography thereby improving diagnostic precision compared with conventionally used blind procedures such as dilatation and curettage. In the present study, the most common indication for hysteroscopy was abnormal uterine bleeding (AUB). Similar findings were reported by Sahu et al who observed that AUB constituted the leading indication for diagnostic hysteroscopy in gynecological practice.[12] Hysteroscopy has increasingly become the gold standard for evaluation of AUB because it enables direct visualization of the endometrial cavity and targeted biopsy of suspicious lesions. Chan and Fraser also emphasized that hysteroscopy demonstrates higher sensitivity and specificity than blind curettage in detecting endometrial pathology, especially focal lesions such as polyps and submucous fibroids.[13]

The age distribution in the present study showed a predominance of women in the reproductive and perimenopausal age groups. This finding correlates with previous studies, where hysteroscopy was most frequently performed in women aged 31–50 years because menstrual abnormalities and benign intrauterine lesions are more common during this period.[12] The higher prevalence in perimenopausal women may be related to hormonal imbalance, endometrial hyperplasia, and increased incidence of structural uterine abnormalities. In the study, normal hysteroscopic findings constituted a substantial proportion of cases, while endometrial polyps, hyperplasia, submucous fibroids, and atrophic endometrium were among the common abnormal findings. Similar observations were reported in the study by Bettocchi et al where hysteroscopy effectively identified focal intrauterine lesions that could be missed on ultrasonography or blind curettage.[14] Diagnostic hysteroscopy has the advantage of identifying subtle endometrial changes, synechiae, and localized pathology that may not be detected through conventional methods. The incidence of endometrial polyps in the present study was comparable to that observed in earlier studies. Polyps are commonly associated with abnormal uterine bleeding and infertility and are best diagnosed by hysteroscopy because of its ability to provide direct visualization of the uterine cavity.[14] Similarly, submucous fibroids identified in this study were effectively visualized hysteroscopically, supporting previous evidence that hysteroscopy remains superior for diagnosing intracavitary myomas.[12] In patients evaluated for infertility, hysteroscopy detected abnormalities such as uterine septum, adhesions, and endometrial polyps. This supports the observations of previous authors who recommended hysteroscopy as an important tool in infertility workup because even minor intrauterine lesions may adversely affect implantation and pregnancy outcomes.[14] The ability to diagnose and simultaneously treat certain lesions during the same procedure adds to the therapeutic value of hysteroscopy.

The correlation between hysteroscopic and histopathological findings in the present study was high, indicating good diagnostic accuracy of hysteroscopy. Previous studies have similarly demonstrated excellent concordance between hysteroscopy and histopathology in diagnosing endometrial pathology.[15] However, histopathological examination remains essential for confirmation, particularly in cases suspicious for hyperplasia or malignancy. The procedure was found to be safe and well tolerated with minimal complications. Most patients experienced only mild discomfort, and serious complications such as uterine perforation, hemorrhage, or infection were rare. Chan and Fraser also reported that diagnostic hysteroscopy is a safe outpatient procedure associated with low complication rates when performed by trained personnel.[13] The shift toward office hysteroscopy using smaller diameter hysteroscopes has further improved patient compliance and reduced the need for anesthesia and hospital admission. Overall, the findings of the present study reinforce the importance of diagnostic hysteroscopy

as an effective, safe, and reliable modality for evaluation of intrauterine pathology. It provides superior diagnostic accuracy compared with blind procedures and facilitates directed biopsy and early therapeutic intervention. In a rural setting, where higher radiological diagnostic investigations like MRI are not available or sometimes not affordable, hysteroscopy has proven to be a very useful tool for diagnosing simple as well as complex uterine pathologies which otherwise require these higher radiological investigations for diagnosis, thereby improving gynaecological management and patient outcomes.

CONCLUSION

This study demonstrates hysteroscopy as a highly effective and minimally invasive modality for the evaluation of intrauterine pathology, particularly among women with abnormal uterine bleeding, infertility, and suspected endometrial lesions. The predominance of endocervical polyps, leiomyomas, and normal uterine cavities observed in this study coincides with existing literature, highlighting the diagnostic utility of hysteroscopy. The high concordance between hysteroscopic findings and histopathological examination strengthens its diagnostic accuracy and emphasizes its importance for definitive diagnosis, especially in cases of hyperplasia and malignancy.

In addition, hysteroscopy enables simultaneous therapeutic interventions, thereby reducing the need for repeat procedures. Its safety, minimally invasive nature, and ability to provide real-time visualization make it an invaluable tool in routine gynaecological practice. Furthermore, in resource-limited rural settings where advanced imaging modalities may be inaccessible or unaffordable, hysteroscopy serves as an alternative for the diagnosis and management of intrauterine pathologies.

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