

Research Article

ROLE OF DIAGNOSTIC HYSTEROSCOPY IN ABNORMAL UTERINE BLEEDING AND ITS HISTOPATHOLOGICAL CO-RELATION

***Dr. Anuja Sagamkunti¹, Dr Chandrashekar K², Dr Chandana M H³**

¹Assistant Professor, Department of Obstetrics and Gynaecology, Raichur Institute of Medical Sciences, Raichur

²Associate professor, Dept of OBG, BMCRC

³Associate professor, Dept of Anesthesia, BMCRC, Ballari

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ABSTRACT:

Introduction: Abnormal uterine bleeding (AUB) is a common gynecological concern that presents significant diagnostic challenges, particularly because it encompasses a wide range of possible underlying causes, from benign conditions like polyps and fibroids to more serious pathologies such as endometrial cancer. This study aimed to assess the diagnostic accuracy of hysteroscopy in AUB and its concordance with histopathological findings.

Materials and Methods: Thirty women, aged 30-60 years, with AUB were prospectively enrolled. Each underwent hysteroscopy followed by dilatation and curettage (D&C). Clinical data, hysteroscopic findings, and histopathological analysis of endometrial samples were systematically recorded and analyzed.

Results: The average age of participants was 42.7 years, with endometrial polyps being the most common abnormality detected on hysteroscopy, accounting for 50% of abnormal cases. Hysteroscopy demonstrated 100% sensitivity and 92% specificity. Histopathology, however, missed 25% of polyps. Mild anemia was present in 60% of patients, indicating potential blood loss due to AUB. **Conclusion:** Hysteroscopy showed a high diagnostic yield for structural causes of AUB, particularly in detecting endometrial polyps. Its integration into the diagnostic algorithm for AUB enhances diagnostic accuracy and can guide appropriate management decisions. Given its high sensitivity, hysteroscopy is a valuable tool for the evaluation and treatment planning of women with AUB, potentially reducing diagnostic delays and improving clinical outcome.

Keywords : Abnormal Uterine bleeding, hysteroscopy, Histopathological correlation, gynecology

INTRODUCTION: Abnormal uterine bleeding (AUB) means any deviation from the normal menstrual cycle in respect of regularity, frequency, volume, duration or amount of bleeding during or in between periods ¹⁻³. The term heavy menstrual bleeding is used if the bleeding is >80ml or if the duration of bleeding >7 days, frequent cycles if the duration of the cycle is <24 days, infrequent cycles if duration of the cycle is >38 days, scanty menses if bleeding <5ml.

More than one-third of gynecologic consultations and nearly two-thirds of hysterectomies are performed for the complaint of menstrual dysfunction. The proportion of women seeking gynecological consultation for AUB rises to more is considered ⁴. Goals of clinical management are

primarily dependent on attaining a correct etiological diagnosis. The patient history and physical and pelvic examinations attempt to determine the site of the bleeding and its source. Information gathered from this will suggest what

direction the investigation would take. Traditionally, dilatation and curettage and ultrasonography were the most common investigations employed in the evaluation of the causes of AUB ⁵ But this detects the cause in less than 50% of the cases ⁶.

Dilatation and curettage is a blind procedure, mainly diagnostic, useful in AUB to study the hormonal pattern causing abnormal bleeding. The endometrial sample collected is sent to the pathologist to study the histological pattern ⁷⁻¹⁰. Hysteroscopy is the inspection of the uterine cavity by endoscopy. It

allows the diagnosis of intrauterine pathologies such as endometrial hyperplasia and early diagnosis of endometrial carcinoma and uterine polyps. It also serves as a method for surgical intervention (operative hysteroscopy) for various gynecological conditions such as submucous myoma, intrauterine adhesions, septa, and corneal and interstitial tubal obstruction.

Traditionally D and C used to be mainstay of investigation for AUB but it is not accurate for diagnosing focal intrauterine lesion or located in areas difficult to curette so anything which improve the accuracy of diagnosing the cause of bleeding can reduce the frequency of hysterectomy as a cure. Dilatation and curettage i.e. the blind surgery method is now replaced by 'see and treat' strategy¹¹⁻¹³. Now hysteroscopy act as a surgeon's eye within the uterine cavity. If the correct etiology is not found, the diagnosis is difficult and hence the management of the condition. This study was taken up to analyze the role of hysteroscopy in evaluating abnormal uterine bleeding and contribution of the procedure for clinical diagnosis and treatment. It also aims to correlate histopathological results with hysteroscopy findings.

Aims and objectives:

1. To study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding.
2. To correlate hysteroscopic findings with histopathologic findings.

MATERIALS AND METHODS:

Study Design and Setting: This prospective study titled "Role of Diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation" was conducted within the Department of Obstetrics and Gynecology at Raichur Institute Medical Sciences, Raichur for a period of six months from Sep 2025 to Feb 2026. The study aimed to evaluate the diagnostic efficacy of hysteroscopy in patients presenting with abnormal uterine bleeding (AUB).

Patient Selection and Criteria: Thirty cases of AUB were included in the study.

Inclusion Criteria:

1. Patients with age between 30 and 60 years with AUB.
2. Both parous and nulliparous women.

Exclusion Criteria:

1. Patients with coagulopathy.
2. Cases with large or multiple fibroids.
3. Genital tract infection.
4. Cases of cervical carcinoma.

Hysteroscopic Procedure: Hysteroscopy was performed systematically post-menstrually in most cases, with exceptions made for patients with irregular menstrual cycles or continuous vaginal bleeding. The procedure was conducted in an operation theatre under intravenous anesthesia, utilizing a 4 mm hysteroscope with a 30° oblique lens (Kalelkar, India) and normal saline as the distending medium. Comprehensive evaluations of the cervical canal, internal os, and uterine cavity were meticulously documented.

Histopathological Evaluation: Following hysteroscopy, dilatation and curettage were performed to obtain tissue samples, which were then preserved in formalin and subjected to histopathological examination. The correlation between hysteroscopic findings and histopathological results was analyzed to assess diagnostic accuracy and inform subsequent patient management decisions.

This structured approach ensured systematic data collection and rigorous analysis, facilitating a comprehensive evaluation of the diagnostic utility of hysteroscopy in cases of AUB.

Statistical Analysis: The statistical analysis in the study included descriptive statistics to summarize continuous variables like age and endometrial thickness, and categorical data such as anemia severity and types of endometrial abnormalities. A comprehensive sensitivity and specificity analysis was meticulously conducted to rigorously evaluate the diagnostic performance of hysteroscopy. This analysis was crucial in determining the accuracy with which hysteroscopy could identify actual cases of endometrial conditions among the participants. The

sensitivity measure reflected the test's ability to correctly identify patients with the condition, while specificity assessed its ability to correctly exclude those without the condition. These metrics are vital for understanding the diagnostic value of hysteroscopy and ensuring reliable clinical assessments.

RESULTS: Out of thirty women, most of the them 17 (57%) belonged to 41- 50 years' age group, followed by 10 (33%) belonging to 31-40 years' age group and 3 (10%) belonging to 51-60 years' age group. **Table 1.**

Anemia categorized by measured hemoglobin (Hb) level at the time of hospital attendance of the women in our study. Depending on the reports, anemia was categorized into mild, moderate and severe according to WHO classification of anemia in nonpregnant women. It was seen that majority of women 18(60%) had mild anemia and 5(17%) had moderate anemia, 5 (17%) had severe anemia . **Table 2.**

In our study the endometrial thickness on TVS was predominantly between 5-10mm of 20 (67 %) women. Only one (3%) had endometrial thickness (ET) < 5mm and 9 (30%) had ET> 10mm **Table 3.**

The most common presenting menstrual complaint being heavy menstrual bleeding in 60% cases, frequent cycles in 20% cases, post menopausal bleeding in 10% cases and irregular cycles 10% of cases. In this study, abnormal findings on hysteroscopy were found in 24 patients (80%), while in the remaining 6 patients (20%), no abnormality was detected (negative hystroscopic view). The most common abnormal finding was endometrial polyp (12 cases, 50%), followed by endometrial hyperplasia seen in (5 cases, 21%), polypoidal endometrium seen in (3 cases, 12.5%), sub mucous fibroid seen in (3 cases, 12.5%) and endometrial carcinoma seen in (1 case, 4%) **Table 4.**

TABLE 1: AGE DISTRIBUTION OF PARTICIPANTS

Age group	Number	Percentage
31-40yrs	10	33%
41-50yrs	17	57%
51-60yrs	3	10%

TABLE 2: PREVALENCE OF ANEMIA SEVERITY

Number	Percentage
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Mild anemia	18	60%
Moderate anemia	5	17%
Severe anemia	5	17%
Normal	2	6%

TABLE 3: DISTRIBUTION OF ENDOMETRIAL THICKNESS

Endometrial thickness	Number	Percentage
<5mm	1	3%
5-10mm	20	67%
>10mm	9	30%

TABLE 4: TYPES OF ENDOMETRIAL ABNORMALITIES

Abnormality	Number	Percentage
Endometrial polyp	12	50%
Endometrial hyperplasia	5	21%
Polypoidal endometrium	3	12.5%
Fibroid	3	12.5%
Endometrial carcionma	1	4%

DISCUSSION: Abnormal uterine bleeding is a very common complaint in reproductive, peri-menopausal and post- menopausal age group and forms major bulk of gynecological consultations, management of which depends on diagnostic accuracy. History, clinical examination, ultra-sonography and hysteroscopy are part of the diagnostic evaluation.

The age group in this study was between 30-60 years and the maximum age incidence of AUB was between 40-50 years. Gianninoto *et al.* found AUB to be common between 30-45 years while Allameh *et al* between 40-50 years ¹⁴. Panda *et al.*¹⁵ series had 60% cases of menorrhagia, followed by polymenorrhagia and metrorrhagia.

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The most common abnormal finding was endometrial polyp (12 cases, 50%), followed by endometrial hyperplasia seen in (5 cases, 21%), polypoidal endometrium seen in (3 cases, 12.5%), sub mucous fibroid seen in (3 cases, 12.5%) and endometrial carcinoma seen in (1 case, 4%). Wamsteker *et al* ¹⁶ found endometrial polyp in 19%, endometrial

hyperplasia in 12.2%, and submucous myoma in 7.8%.

Study reported by Kumari A *et al*¹² shows 53.33% women had mild anaemia (10-10.9 gm %). In their study, moderate (7-9.9 gm %) and severe (<7 gm %) anaemia was found in 16.11% and 6.66% women respectively. On hysteroscopy endometrial polyps appeared as soft, pedunculated or sessile with smooth surface. 12 cases of endometrial polyps were diagnosed by hysteroscopy of which 9 were confirmed by histopathology. In this case the sensitivity was 100% and specificity was 92%. We noted that the diagnostic accuracy in this case was 94% while it was 100% in the study by Panda A *et al*¹⁷, a bit lower i.e. 88.6% was noted by Valle RF *et al*¹⁸.

A round white coloured bulge with smooth surface as seen on hysteroscopy was diagnosed as submucous myoma. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy in diagnosing submucosal myoma was 100%, 95%, 50%, 100% and 96% respectively.

CONCLUSION: Hysteroscopy is an important diagnostic tool in the evaluation of abnormal uterine bleeding and provides valuable insights into planning the management options.

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