

# Clinical Study of Diagnostic Hysteroscopy in Abnormal Uterine Bleeding and its Histopathological Correlation

P Padmaja, P Deepa

Assistant Professor, Department of Obstetrics and Gynecology, Government Maternity Hospital, Kakatiya Medical College, Warangal, Telangana, India

## Abstract

**Background:** Abnormal uterine bleeding (AUB) is the most common complaint in gynecology and an important source of morbidity. It may be evaluated by hysteroscopy or by dilatation and curettage.

**Materials and Methods:** Between January 2015 and August 2016, 50 patients with AUB who got admitted at MNR Medical College in the Department of Obstetrics and Gynaecology were subjected to panoramic hysteroscopy and subsequent dilatation and curettage. Data were collected and analyzed.

**Results:** AUB was more common in 30–39 years. The most common presenting complaint was menorrhagia. Negative hysteroscopic view was seen in 54% of cases. Abnormalities seen were endometrial hyperplasia, polyps, submucous myoma, and endometrial atrophy. Both hysteroscopy and curettage were accurate when an abnormality was diagnosed, giving a specificity of 96.15% and positive predictive value of 96.65%. However, the ability to diagnose a lesion (sensitivity) was more with hysteroscopy in comparison to curettage (91.66 vs. 79.16). Forty-one patients (82%) had the same tissue diagnosis in both hysteroscopy and curettage. Hysteroscopy revealed more information than curettage in 12% and curettage had more information in 6% of cases.

**Conclusion:** This study confirms the conclusion of many others that hysteroscopy is superior to dilatation and curettage in evaluating patients with AUB.

**Key words:** Abnormal uterine bleeding, Dilatation and curettage, Hysteroscopy

## INTRODUCTION

Although uterine bleeding is a normal physiologic episodic occurrence for most women, its characteristics nevertheless vary considerably. The broad range of normal variation causes difficulty in identifying abnormal patterns. The problem is that uterine bleeding has a wide range of diagnostic possibilities, and confusion is generated when review and reports fail to outline the diagnostic evaluation of the patient who presents with abnormal uterine bleeding (AUB) patterns.

Goals of clinical management are primarily dependent on attaining a correct etiologic 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.<sup>[1]</sup>

Ultrasonography, though it can determine and confirm the presence or absence of pelvic pathology; determine size, texture, and contour of the lesion; and establish the origin and anatomic relationship of lesion with other pelvic structures and the status of the ovary, fails to provide adequate information regarding the endometrium.

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.

Access this article online



www.ijss-sn.com

**Month of Submission :** 06-2019  
**Month of Peer Review :** 07-2019  
**Month of Acceptance :** 08-2019  
**Month of Publishing :** 08-2019

**Corresponding Author:** Dr. P Padmaja, H. No 35-6-771, Gopalpur, TV Tower Colony, Hanmkonda, Warangal - 506 009, Telangana, India.

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.

AUB has been used to cover all forms of abnormal bleeding for which an organic cause cannot be found. It is one of the most common complaints with which a patient presents to a gynecologist. Dilation and curettage (D and C) has long been the diagnostic test for AUB. However, endometrial polyps and submucous fibroids are frequently undetected by curettage alone.<sup>[1-8]</sup>

The judicious use of hysteroscopy to manage this medical entity adds a new dimension in handling this often perplexing problem. This study has been taken up to analyze the place of hysteroscopy in the evaluation of AUB in terms of accuracy of hysteroscopic findings and the contribution of the procedure to clinical diagnosis. It also aims to correlate hysteroscopic findings with histopathological results.

### Aims and Objectives of the Study

The aim of the study is to evaluate the role of hysteroscopy in the diagnosis of cases with AUB and its correlation with histopathological findings.

## MATERIALS AND METHODS

### Source of Data

The present study “a clinical study of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation” is a prospective study, which has been carried out in the Department of Obstetrics and Gynecology, Kakatiya Medical College and C.K.M Hospital, Warangal.

The material for the present study was collected from patients who attended and were admitted in the Department of Obstetrics and Gynecology with AUB. Fifty consecutive cases of AUB were taken up for the study. All the patients in this study underwent hysteroscopy, followed by dilatation and curettage, and the curettings were sent for histopathology analysis.

The period of the study was from 2014 to 2016; the results of hysteroscopy and endometrial histopathology were studied and analyzed. The analyzed data were compared with other series in literature and discussed. A master chart dealing with all aspects has been designed and presented.

All patients were well informed about the study in all aspects, and informed written consent was obtained.

### Method of Collection of Data

#### Inclusion criteria

1. Patients with age between 20 and 60 years with AUB
2. Both parous and nulliparous women
3. Patients who do not require any emergency management.

#### Exclusion criteria

1. Patients with severe anemia due to menorrhagia were excluded since they required immediate intensive care
2. Patients with profuse bleeding
3. Cases with large or multiple fibroids
4. Infection in the uterine tract
5. Cases of cervical carcinoma.

Cases were selected by diagnosis on history, general physical examination, abdomen and pelvic examination, and routine investigations. Pro forma specially made for the study was used.

Patients were advised to have a light dinner before 10 pm on the night prior to hysteroscopy. The patients were prepared as for any other surgical procedure.

## RESULTS

In the present study, panoramic hysteroscopy was performed using a 4 mm hysteroscope with 30° for oblique lens (Kalelkar, India) in 50 patients who presented with AUB, followed by dilatation and curettage. The curetted endometrium was sent for histopathological analysis.

In the present study, the maximum age incidence was from 30 to 39 (20 patients, 40%). The youngest patient in this study was 24 years old and the oldest was 60 years old.

Of the 50 patients, majority of the patients, i.e., 21 (42%), had symptoms for more than 1 year, 15 patients (30%) had symptoms for 6 months–1 year, and 14 patients (28%) had symptoms for <6 months.

Majority of the patients, i.e., 23 (46%), presented with menorrhagia. The second most common group had post-menopausal bleeding (16 cases, 32%). There were 6 cases (12%) with polymenorrhagia and 5 patients (10%) with metrorrhagia.

Of the 50 patients, 28 cases (56%) were multipara, 19 cases (38%) were grand multi, and 3 cases (6%) were nulliparity.

Abnormal findings were seen in 23 patients (46%), while in the remaining 27 patients (54%), no abnormality was detected (negative hysteroscopic view) [Tables 1-5].

The most common abnormality was endometrial hyperplasia (10 cases, 20%), followed by endometrial polyps (7 cases, 14%). There were also 2 cases (4%) of submucous myomas, 3 cases (6%) of endometrial hypertrophy, and 1 case (2%) of endometritis.

The most common abnormality was endometrial hyperplasia (10 cases, 20%), followed by endometrial polyps (7 cases, 14%). There were also 2 cases (4%) of submucous myomas, 3 cases (6%) of endometrial hypertrophy, and 1 case (2%) of endometritis.

The most common abnormality was endometrial hyperplasia (10 cases, 20%), followed by endometrial polyps (7 cases, 14%). There were also 2 cases (4%) of submucous myomas, 3 cases (6%) of endometrial hypertrophy, and 1 case (2%) of endometritis.

Of the 30 normal cases (60%) reported, 5 cases had abnormal findings. The diagnosis of 4 cases of endometrial polyps and 1 case of submucous myoma was missed by endometrial histopathology.

Histopathology correctly diagnosed all cases of endometrial hyperplasia (10 cases, 20%), atrophic endometrium (4 cases, 8%), endometritis (1 case, 2%), and irregular ripening (1 case, 2%) with 100% accuracy.

Both hysteroscopy and curettage were accurate when an abnormality was diagnosed, giving a specificity of 96.15 and positive predictive value (PPV) of 95.65 (for both).

The ability to diagnose a lesion (sensitivity) was more with hysteroscopy in comparison to curettage (91.66 vs. 79.16), while a negative diagnosis was less wrongly made with hysteroscopy (false-negative ratio: 8.33% vs. 20.83%).

Of the 50 patients who underwent hysteroscopy and dilatation and curettage, 41 patients (82%) had the same tissue diagnosis in both hysteroscopy and curettage. Hysteroscopy revealed more information than curettage in 6 cases (12%), and curettage had more information in only 3 cases (6%).

Five cases who presented with post-menopausal bleeding were on hormone replacement therapy.

**Complications among Patients Noted Postoperatively**

- Vomiting: 10 cases
- Bleeding: 2 cases
- Infection: 0
- Perforation: 0.

There was no procedure-related mortality in this study.

**DISCUSSION**

In the present study, “a clinical study of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation,” diagnostic hysteroscopy was performed in 50 consecutive cases of AUB and its correlation with histopathological findings was sought.

The age group in this study was between 20 and 60 years, and the maximum incidence was between 30 and 39 years. Panda *et al.*<sup>[2]</sup> found that the maximum age incidence was between 35 and 45 years in range between 25 and 70 years. In Gianninoto *et al.*<sup>[3]</sup> series, the age range was 38–80 years and the most common incidence was between 30 and 45 years. van Trotsenburg *et al.*<sup>[4]</sup> reported the maximum age incidence between 41 and 50 years.

**Table 1: Age incidence**

Age group	Number of patients	Percentage
20–29	2	4
30–39	20	40
40–49	18	36
50–60	10	20

**Table 2: Duration of symptoms**

Duration	Number of patients	Percentage
<6 months	14	28
6 m–1 year	15	30
>1 year	21	42

**Table 3: Clinical presentation**

Presentation	Number of patients	Percentage
Menorrhagia	23	46
Polymenorrhoea	6	12
Metrorrhagia	5	10
Post-menopausal bleeding	16	32

**Table 4: Parity**

Parity	Number of patients	Percentage
Nulliparous	3	6
Multiparous	28	56
Grand multi	19	38

**Table 5: Findings at hysteroscopy**

Findings	Number of patients	Percentage
Normal	27	54
Endometrial hyperplasia	10	20
Endometrial polyps	7	14
Submucous myoma	2	4
Endometrial atrophy	3	6
Endometritis	1	2

The most common presenting complaint in this series was menorrhagia (46%), followed by post-menopausal bleeding (32%) and polymenorrhea (12%). Panda *et al.*<sup>[2]</sup> series had 60% cases of menorrhagia, followed by polymenorrhagia and metrorrhagia.

In this study, abnormal findings on hysteroscopy were found in 23 patients (46%), while in the remaining 27 patients (54%), no abnormality was detected.

The following Table 6 compares normal and abnormal findings in hysteroscopy in various series:

Of the 23 cases with abnormal findings on hysteroscopy, the most commonly seen was endometrial hyperplasia (10 cases, 20%), followed by endometrial polyps (7 cases, 14%) and submucous myoma (2 cases, 4%). Panda *et al.*<sup>[2]</sup> found endometrial hyperplasia in 28.3%; Wamsteker<sup>[5]</sup> found endometrial polyp in 19%, endometrial hyperplasia in 12.2%, and submucous myoma in 7.8%; van Trotsenburg *et al.*<sup>[4]</sup> observed myomas and polyps in 14%; and de Wit *et al.*<sup>[6]</sup> reported myomas in 21% and polyps in 14.4%.

Hysteroscopy diagnosed all cases of endometrial hyperplasia, polyps, and myomas with a specificity of 100%. Sheth *et al.*<sup>[7]</sup> reported 81.8% accuracy in the diagnosis of polyps and myomas, while Garuti *et al.*<sup>[8]</sup> reported 95.4% specificity in the diagnosis of polyps.

In the present study, hysteroscopy made a false-positive diagnosis of endometritis in 1 case and missed the diagnosis of 1 case each of endometrial atrophy and endometritis.

The accuracy of hysteroscopy in this study was 94% and that of endometrial histopathology was 88%.

A comparison of the accuracy with other similar studies is given Table 7:

A statistical analysis of the accuracy obtained by various authors and of the present study shows that there is no significant difference between the values.

### Statistical Analysis of Sensitivity and Specificity of Hysteroscopy

There is no significant difference between sensitivity and specificity obtained in this study and that obtained by various other authors. This confirms the validity of hysteroscopy done in the present study.

A comparison of sensitivity and specificity of D and C obtained in the present study with those obtained by other authors shows no significant difference between the obtained values.

In the present study, the results of hysteroscopy and dilatation and curettage were in agreement in 82% of patients; hysteroscopy revealed more information than curettage in 12% and curettage revealed more information than hysteroscopy in 6% of patients [Tables 8-10].

This is comparable to another similar study which shows that panoramic hysteroscopy is better than curettage in the evaluation of AUB.

### Summary

- Fifty patients who presented with AUB underwent panoramic hysteroscopy and subsequent dilatation and curettage
- Curretted endometrium was sent for histopathological examination
- Age group of the patients ranged from 20 to 60 years, and the most common age group was 30–39 years (40%)
- Most of the patients (42%) had symptoms for more than 1 year, and the most common presenting symptom was menorrhagia (46%) and post-menopausal bleeding (32%)
- Hysteroscopy reported 27 patients (54%) as negative view and 23 patients (46%) as abnormal view
- Endometrial hyperplasia (20%) was the most common abnormality, followed by endometrial polyp (14%)
- The sensitivity, specificity, negative predictive value (NPV), and PPV for hysteroscopy were 91.66%, 96.15%, 92.59%, and 95.65%, respectively, and for D and C were 79.16%, 96.15%, 83.33%, and 95.65%, respectively
- The most consistent finding has been the detection of endometrial hyperplasia, endometrial polyp, and submucous myomas with 100% accuracy using hysteroscopy
- By hysteroscopy, there were 2 false-negative results: 1 case each of endometrial atrophy and endometritis and a false positive result of 1 case of endometritis

**Table 6: Normal and abnormal findings at hysteroscopy in various series**

Author (year)	Number of cases	Normal (%)	Abnormal (%)
Wamsteker (1984)	199	41.5	58.5
Gimpelson and Rappold (1988)	276	60	40
Loffer (1989)	91	48.66	51.44
Sheth (1990)	51	44	56
Parasnis (1992)	96	73.95	26.05
Neumann (1994)	85	55.2	44.8
Panda (1999)	66	46.6	53.4
Trotsenburg (2000)	819	66	34
Garuti (2001)	1500	61.8	38.2
Gianninoto (2003)	512	25	75
de Wit AC (2003)	1045	54.2	45.8
Present series	50	54	46



**Table 7: Comparison of accuracy of hysteroscopy findings**

Author	Accuracy	Misinterpretation
Baggish (1979)	87.5	12.5
Barbot (1980)	84	16
Sheth (1990)	82	18
Parasnis (1992)	92	8
Panda (1999)	92.69	7.31
Present series	94	6

Test used: F test  $P=1>0.05$  NS

**Table 8: Comparison of validity factors- hysteroscopy**

Author	Sensitivity	Specificity
Loverro (1996)	98	95
Garuti (2001)	94.2	88.8
Loffer (1989)	98	100
Parasnis (1992)	92	100
Panda (1999)	92.5	78.78
Present series	91.66	96.15

Test used: F test  $P=0.2688>0.05$  NS

**Table 9: Comparison of validity factors - dilatation and curettage**

Author	Sensitivity	Specificity
Loverro (1996)	79.2	95
Garuti (2001)	78	94
Loffer (1989)	65	100
Parasnis (1992)	76	100
Present series	79.16	96.15

Test used: F test  $P=0.9962>0.05$  NS

**Table 10: Panoramic hysteroscopy versus curettage**

Results	Gimpelson and Rappold (1988)	Gimpelson (1984)	present series
Panoramic hysteroscopy equal to curettage	79	73	82
Hysteroscopy greater than curettage	18	24	12
Hysteroscopy less than curettage	3	3	6

Test used: F test  $P=1>0.05$  NS

- Histopathology of endometrium missed 4 cases of endometrial polyps and 1 case of submucous myoma and gave a false-positive report of 1 case of endometrial atrophy
- D and C correctly diagnosed all cases of endometrial hyperplasia (10 cases), endometrial atrophy (4 cases), endometritis (1 case), and irregular ripening (1 case)
- In the present study, in 82% of patients, the results of

hysteroscopy and curettage were in agreement

- Hysteroscopy revealed more information than curettage in 12% and curettage revealed more information than hysteroscopy in 6% of cases
- Complications among patients noted postoperatively Vomiting: 10 cases, bleeding: 2 cases, infection: 0, and perforation: 0
- There was no procedure-related mortality in this study.

## CONCLUSION

- This study confirms that hysteroscopy is superior to curettage in evaluating patients with AUB
- Hysteroscopy is a safe, reliable, and quick procedure in the diagnosis of cases with AUB with high sensitivity, specificity, and NPV
- The concern of today's gynecologist while evaluating AUB is not to miss a significant cancerous lesion. The chances that such a lesion would be missed are rare, if we stick to the criteria for negative hysteroscopic view, and usually, no further investigation may be necessary.

It would be prudent to obtain endometrial tissue for histopathological examination, especially in peri- or postmenopausal patients in spite of negative hysteroscopic view.

## REFERENCES

1. Jones HW 3<sup>rd</sup>, Rock JA. Operative hysteroscopy. In: TeLinde's Operative Gynecology. 11<sup>th</sup> ed. Ch. 18. Philadelphia, PA: Wolters Kluwer; 2015. p. 307-36.
2. Panda A, Parulekar SV, Gupta A. Diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation. J ObstGyn India 1999;175:74-6.
3. Gianninoto A, Morana C, Campione C. Diagnostic hysteroscopy in abnormal uterine bleeding. Five-years' experience. Minerva Ginecol 2003;55:57-61.
4. van Trotsenburg M, Wieser F, Nagele F. Diagnostic hysteroscopy for the investigation of abnormal uterine bleeding in premenopausal patients. Contrib Gynecol Obstet 2000;20:21-6.
5. Wamsteker K. Hysteroscopy in the management of abnormal uterine bleeding in 199 patients. In: Siegler AM, Lindemann HJ, editors. Hysteroscopy: Principles and Practice. Philadelphia, PA: JB Lippincott; 1984. p. 128-131.
6. de Wit AC, Vleugels MP, de Kruijff JH. Diagnostic hysteroscopy: A valuable diagnostic tool in the diagnosis of structural intra-cavitary pathology and endometrial hyperplasia or carcinoma? six years of experience with non-clinical diagnostic hysteroscopy. Eur J Obstet Gynecol Reprod Biol 2003;110:79-82.
7. Sheth SS, Nerurkar NM, Mangeshkar PS. Hysteroscopy in abnormal uterine bleeding. J Obstet Gyn India 1990;40:451.
8. 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;8:207-13.

**How to cite this article:** Padmaja P, Deepa P. Clinical Study of Diagnostic Hysteroscopy in Abnormal Uterine Bleeding and its Histopathological Correlation. Int J Sci Stud 2019;7(5):81-85.

**Source of Support:** Nil, **Conflict of Interest:** None declared.