

## Hysteroscopy in Abnormal Uterine Bleeding

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### ABSTRACT

**Aims:** To evaluate the role of hysteroscopy in abnormal uterine bleeding in women of reproductive age group and to correlate the hysteroscopic findings with histopathology.

**Methods:** The study was carried out in the Department of Obstetrics and Gynecology at Patan Academy of Health Sciences, Kathmandu. Thirty patients of age group 20-61 years with abnormal uterine bleeding were included. Demonstrable pelvic pathology like cancer of cervix, vagina or endometrium and active pelvic inflammatory disease (PID) were excluded. All patients were assessed using hysteroscopy and findings were correlated with histopathology.

**Results:** On hysteroscopy, endometrium was normal in 30%, hyperplastic in 30%, polyps found in 20% and atrophic in 10%. Endometrial polyp and submucous fibroid was seen in 6.7% cases and 3.3% cases each. On confirmation by histopathology the findings were: normal endometrium in 40% cases, hyperplastic in 40%, polyp in 16.7% and atrophic in 3.3%. Submucous fibroid and suspicious endometrium came to be endometrial hyperplasia on histopathology.

**Conclusions:** Hysteroscopy has more than 90% diagnostic accuracy to diagnose endometrial morphology and diagnostic agreement of endometrial finding is 63.33%.

**Keywords:** abnormal uterine bleeding, hysteroscopy, predictive value

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### INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as bleeding from uterine corpus and is abnormal in volume, regularity and or timing for last six months. It may be excessively heavy or light and may be prolonged, frequent, or random.<sup>1</sup> AUB is a common problem mainly encountered in reproductive women. The prevalence of abnormal uterine bleeding is up to 30 percent among reproductive age group. It attributes as a cause for about 30% of total gynaecological surgeries.<sup>2</sup>

Diagnostic dilatation and curettage (D&C) or vacuum aspiration biopsy are the most commonly employed diagnostic modalities in the evaluation of causes of abnormal uterine bleeding. However, these are blind procedures and tend to miss the diagnosis ranging from 10 to 25 %.<sup>3</sup>

Hysteroscopic visualization of endometrial cavity

has revolutionized the detection and management of endometrial pathologies in last few decades. Hysteroscopy is a simple, safe, well tolerated and reliable procedure in the diagnosis of AUB across all age groups. In fact, it is an eye in the uterus.<sup>4</sup> The properties of hysteroscopy includes direct real time visualization and augmented vision of uterine cavity which makes it more accurate in detecting minute focal endometrial pathology and aids in taking biopsies from a suspicious area.<sup>5</sup> Recognition of normal variant or benign lesion would reduce burden to the pathologist by decreasing the number of unnecessary sampling. It will also decrease anxiety of the patient as the report can be instant in many cases.

Considering its advantages, hysteroscopy is replacing D&C in the present era. It is emerging as a golden method in the evaluation of cause of AUB. The present study tries to explore its accuracy

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in the evaluation of abnormal uterine bleeding and correlating it with histopathology.

## METHODS

The present study was conducted on 30 women attending to gynecology OPD with abnormal uterine bleeding who have undergone hysteroscopy at Patan Academy of Health Sciences from January 2017 to December 2019. All reproductive women presenting with abnormal uterine bleeding were included and women with pelvic inflammatory disease, patient in menstruation phase, suspected cervical malignancy, active uterine bleeding pregnancy/suspected pregnancy complications, systemic disorders causing abnormal uterine bleeding were excluded from the study. Normal saline was used as distension media for hysteroscopy under intravenous anaesthesia. Hysteroscopic biopsy was taken and sent for histopathology examination. The clinical, hysteroscopic and histopathological findings were documented and analyzed.

## RESULTS

A total of 30 women were enrolled in this study. The mean age was 42.7years. The commonest affected patients were para 2 or more (80%). Majority of the patients had excessive bleeding for a year and the most frequent indication for hysteroscopy was menorrhagia.[Table-1]

**Table-1: Symptom duration and clinical presentation**

	Variable	Frequency	%
Duration of symptoms	6 months	14	46.7%
	6 to 12 months	11	36.7%
	12 months	5	16.7%
Clinical presentation	Menorrhagia	13	43.3%
	Polymenorrhoea	6	20%
	Postmenopausal bleeding	6	20%
	Metrorrhagia	5	16.7%

There was 63.33% agreement between hysteroscopy and histopathology findings (Fisher's exact Test=38.33, p=0.01) [Table-2].

**Table 2: Cross-tabulation of hysteroscopy and histopathology findings**

Hysteroscopy findings	Histopathology findings				Total
	Endometrial polyp	Endometrial atrophy	Endometrial hyperplasia	Endometrium normal	
Endometrial polyp	4	0	2	0	6
Endometrial atrophy	0	1	0	2	3
Endometrial hyperplasia	1	0	6	2	9
Normal endometrium	0	0	1	8	9
Suspicious endometrium	0	0	2	0	2
Submucous fibroid	0	0	1	0	1
Total	5	1	12	12	30

Diagnostic accuracy of hysteroscopy was more than 90% in submucous fibroid, atrophic and suspicious endometrium and endometrial polyp [Table-3].

**Table-3: Diagnostic accuracy of hysteroscopy**

Hysteroscopy	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy (%)
Normal endometrium	88.89	80.95	66.67	94.44	83.33
Hyperplastic endometrium	66.67	71.43	50	83.33	70
Endometrial polyp	66.67	95.83	80	92	90
Atrophic endometrium	33.33	100	100	93.1	93.33
Suspicious endometrium	0.00	100	0.00	93.33	93.33
Submucous fibroid	0.00	100	0.00	96.67	96.67

PPV-Positive predictive value, NPV-Negative predictive value

One patient had profuse bleeding during hysteroscopy so was admitted for observation. Injectable tranexamic acid was given and discharged after 24 hours of observation.

## DISCUSSION

The mean age was 42.7 years in the our study which was close to Reethu et al study of 43.64 years.<sup>6</sup> Majority of the patients (80%) were multiparous in our study, and was similar to Shubhankar D et al study where majority of patients were multiparous ( 88.5%).<sup>7</sup> Fonsena M et al also observed 60% of the patients to be multiparous.<sup>8</sup> The duration of symptoms in 6 months,6-12 months, 12 months onwards was 46.7%,36.7,16.7% in our study which was different from Sinha et al who reported 60.7%,28.6%,10.7% respectively.<sup>3</sup> Commonest presentation in the study was menorrhagia in 43.3% patients, followed by post-menopausal bleeding 20% and polymenorrhoea seen in 20% patients. A similar finding was observed in the study conducted by Jyotsana et al. where menorrhagia was seen in 40% of the patients.<sup>9</sup> Kaur et al also reported menorrhagia in 40% and postmenopausal bleeding in 20% of the patients.<sup>10</sup>

In this study normal hysteroscopic findings were observed in 30% (9) of the cases which was similar to the study by Reethu et al and Jyotsana et al who observed 30% and 33.3% of cases, respectively.<sup>6,9</sup> Sheetal G et al and Dasgupta et al observed normal hysteroscopic findings in 50% and 39.1% respectively.<sup>5,7</sup> Most common abnormality detected was hyperplastic endometrium i.e. 30%(9) which was same to that observed in Guin et al and Dasgupta et al which was 30% and 30.6% but slightly higher than 22.6% as reported by Kaur et al.<sup>11,7,10</sup> Endometrial polyp was seen in 20%(6) of the cases which was same in Sinha et al and Dinic et al i.e 21.4% and 21.8% respectively.<sup>12,13</sup> but Sheetal et al reported only 6%.<sup>5</sup> Atrophic endometrium was present in 10%(3) of cases in our study which was similar in Kaur et al which was 10.4% but was more in Guin et al study i.e.18%.<sup>10,11</sup> Although in present study no case of endometrial cancer was diagnosed, 6.7%(2) cases of suspicious endometrium was

observed which came endometrial hyperplasia in histopathology. 1.7-4.1% of endometrial cancer was detected in Nandan and Singh study.<sup>14,15</sup> submucous fibroid was observed in 3.3%(1) cases in our study while in studies of Kaur et al , Dasgupta et al, Reethu et al and Sinha et al it was 7.4%,8%,10% and10.7% respectively.<sup>10,7,6,12</sup>

On hysteroscopic with histopathology finding correlation, there was 63.33% agreement (accuracy) between these two findings.

Regarding sensitivity, specificity, PPV, NPV and accuracy for normal endometrium it was88.89%,80.95%,66.67%,94.44% and 83.33% respectively in our study while in Kaur et al study it was 82.2%, 91.6%, 92.5%,80.4% respectively<sup>10</sup> and in Dasgupta at al study it was 69%, 100%, 100%, 71.4%, 82.5% respectively.<sup>7</sup> Sensitivity, specificity, PPV, NPV and accuracy of hysteroscopy for hyperplastic endometrium in our study was 66.67%,71.43%,50%,83.33% and70% respectively while in Sheetal et al study it was 75%, 92.5%,71.4%, 93.67% and 72% respectively.<sup>8</sup>

For endometrial polyp sensitivity, specificity, PPV, NPV and accuracy was 66.67%, 95.83%, 80%, 92%and 90% respectively but Sheetal et al and Reethu et al study reported 100% each respectively.<sup>8,6</sup>

Hysteroscopy revealed a sensitivity, specificity, PPV, NPV and accuracy for atrophic endometrium was 33.33%,100%,100%,93.1 %and 93.33% in our study while Kaur et al reported 100%, 99.3%, 94.1%, 100% and 99.3% respectively.<sup>10</sup> In case of suspicious endometrium and submucous fibroid specificity was 100% , NPV and accuracy was 93.33% and 96.67% each but Pietro Let al reported to be 100, 49.6, 81 and 100%, respectively.<sup>16</sup>

## CONCLUSIONS

Hysteroscopy is an important tool in the diagnostic workup of abnormal uterine bleeding and it is 100% specific for intrauterine pathologies like suspicious, atrophic endometrium and submucous fibroid. Thus, it can be considered a gold standard for diagnosis of intrauterine pathologies and it should be included in management of patients with abnormal uterine bleeding.

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