

# A hysteroscopic view of abnormal uterine bleeding

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## ABSTRACT

**Background:** Abnormal uterine bleeding (AUB) is the most common presenting complaint in reproductive age women. A complete real time visualization of endometrial cavity by hysteroscopy would be the best modality to investigate the etiology of AUB and give targeted treatment to women avoiding unnecessary hysterectomies. **Aims and objectives:** 1. To evaluate the diagnostic relevance of hysteroscopy in cases of abnormal uterine bleeding; 2. To correlate findings on hysteroscopy with ultrasound findings and histopathology of uterine tissue. **Materials and methods:** A prospective study was undertaken in the Department of Obstetrics and Gynaecology of RKDF Medical College, Bhopal from December 2018 to January 2022. 100 consecutive patients were enrolled in the study. All cases underwent pelvic ultrasound followed by hysteroscopy. Endometrial sampling and histopathological study were done. The findings of ultrasonography, hysteroscopy and histopathology were compared and analyzed. **Results:** On hysteroscopy among 100 patients abnormal findings were documented in 71 patients. In comparison, on histopathology among these 100 cases, pathology was detected in 64 cases. The most common abnormality detected in the 71 hysteroscopy positive cases was endometrial hyperplasia, in 41 cases. The sensitivity of hysteroscopy was found to be 71.83% with 95% confidence intervals and specificity was found to be 55.17% when compared using histopathology as the gold standard. **Conclusion:** Hysteroscopy is the gold standard diagnostic modality in the evaluation of AUB as it combines the diagnostic benefits of sonography and histology. In combination, ultrasonography, hysteroscopy with endometrial biopsy can be a potent tool to diagnose gynaec pathologies and treat them without resorting to hysterectomy.

**Keywords:** Hysteroscopy, uterine bleeding, uterine haemorrhage, abnormal uterine bleeding, dysfunctional uterine bleeding.

Abnormal uterine bleeding (AUB) is any variance of a woman's menstrual pattern from the normal defined pattern of menstrual cycle for a period of 6 months or more. It may be deviant in rhythm, regularity, amount or duration.

Abnormal uterine bleeding (AUB) is reported to be prevalent among 17.9 % of Indian women<sup>1</sup>. It is widely accepted as the most common cause for gynaecological consultation. It leads to loss of health, anaemia, decreased productivity and hampered quality of life of half the country's workforce.

AUB has varied etiology, classified succinctly by FIGO's (International Federation of Gynaecology and Obstetrics)

PALM-COEIN classification. Identifying the correct etiology thus, forms the crux of management of AUB. While ultrasonography has traditionally been at the center stage for diagnosis of AUB and histopathology has played a confirmatory role, it is hysteroscopy that brings together the benefits of both by direct visualization of the target tissue in question combined with magnification offered by the hysteroscope. Hysteroscopy combined with biopsy increases the certainty of diagnosis up to 100%<sup>2</sup>.

The objective of this research was therefore to evaluate the diagnostic relevance of hysteroscopy in cases of abnormal uterine bleeding and to correlate findings on

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hysteroscopy with ultrasound findings and histopathology of uterine tissue.

**Materials and methods**

A prospective study was undertaken in the Department of Obstetrics and Gynaecology of a tertiary care hospital, RKDF Medical College Hospital and Research Centre, Jatkhedhi, Bhopal from December 2018 to January 2022.

The study sample consisted of patients above 30yrs of age who were admitted in the gynaecology ward with diagnosis of abnormal uterine bleeding. 100 consecutive such patients were enrolled in the study. All study cases underwent pelvic ultrasound followed by hysteroscopy under IV anaesthesia. All cases were informed about the study and written consent was taken from them. Appropriate preoperative preparation was done. Single shot of intraoperative antibiotic was given to the patients at induction of anaesthesia.

Hysteroscopy was performed using a 30 degree, 4mm hysteroscope with a 16Fr continuous flow diagnostic sheath. Patient was placed in modified lithotomy position and painting and draping was done. The bladder was emptied using a disposable urethral catheter. Vaginal walls were retracted using Sim’s specula. Anterior lip of cervix was held with Alli’s forceps and internal os was dilated using Hegar’s dilators if needed. Normal saline was used as the distension medium. The cervical canal, uterine cavity, endometrial characteristics thickness, vascular patterns, glandular patterns etc. and ostia were visualized and noted. Endometrial sampling was done using a blunt curette and the sample was sent for histopathology. Patients were discharged the following day. The findings of ultrasonography, hysteroscopy and histopathology were compared and analyzed.

The inclusion criteria for our study were that the study cases should be women admitted in gynae ward who were more than 30yrs of age with diagnosis of abnormal uterine bleeding. Their past menstrual cycles, thyroid profile and PAPs smear should be normal and no obvious pathology was found on their pelvic ultrasound. The exclusion criteria for the study were pregnancy, signs of acute pelvic infection and abnormal PAPs smear.

The statistical tool used for our study was the SAS - statistical analysis software.

**Results**

In the present study maximum age of incidence of AUB was found to be between 40-49 years (42%). The oldest being 68 yrs old and the youngest was 30 yrs old (table 1).

Most (71%) of the study patients approached us for treatment within 6 months of the onset of symptoms (table 2). The most common symptom with which the patients presented was menorrhagia (table 3).

**Table 1: Age distribution of study cases**

| Age range   | Percentage of cases |
|-------------|---------------------|
| 30-39 years | 37                  |
| 40-49 years | 42                  |
| 50-59 years | 15                  |
| >59 years   | 6                   |
| Total       | 100                 |

**Table 2: Distribution of duration of symptoms**

| Duration of symptoms | Percentage of cases |
|----------------------|---------------------|
| <6 months            | 71                  |
| 6-12 months          | 20                  |
| >12 months           | 09                  |
| Total                | 100                 |

**Table 3: Distribution of symptoms in the study cases**

| Symptoms                 | Percentage of cases |
|--------------------------|---------------------|
| Intermenstrual spotting  | 05                  |
| Menorrhagia              | 36                  |
| Metrorrhagia             | 27                  |
| Polymenorrhea            | 10                  |
| Post menopausal bleeding | 22                  |
| Total                    | 100                 |

**Table 4: Distribution of study cases as per parity**

| Parity      | Percentage of cases |
|-------------|---------------------|
| Nulliparous | 6                   |
| Multiparous | 94                  |
| Total       | 100                 |

**Table 5: Distribution of hysteroscopy findings in study cases**

| Hysteroscopy findings     | Percentage of cases |
|---------------------------|---------------------|
| Negative (no abnormality) | 29                  |
| Endometrial polyp         | 26                  |
| Submucosal fibroid        | 2                   |
| Endometrial Hyperplasia   | 41                  |
| Atrophy                   | 2                   |
| Total                     | 100                 |

**Table 6: Distribution of histopathological findings in study cases**

| Histopathological findings | Percentage of cases |
|----------------------------|---------------------|
| Negative (no abnormality)  | 36                  |
| Endometrial polyp          | 38                  |
| Submucosal fibroid         | 1                   |
| Endometrial Hyperplasia    | 23                  |
| Neoplasia                  | 2                   |
| Total                      | 100                 |

**Table 7: Distribution of sonographic findings amongst study cases**

| USG findings        | Percentage |
|---------------------|------------|
| Fibroid             | 16         |
| Polyp               | 26         |
| Endometrium <5mm    | 5          |
| Endometrium 5-10 mm | 29         |
| Endometrium >10mm   | 24         |
| Total               | 100        |

The sensitivity of hysteroscopy was found to be 71.83% with 95% confidence intervals and specificity was found to

be 55.17% when compared using histopathology as the gold standard (table 10).

**Table 8: Association between hysteroscopy and sonographic findings amongst study cases**

| USG      | Hysteroscopy |        | Total |
|----------|--------------|--------|-------|
|          | Abnormal     | Normal |       |
| Abnormal | 50           | 26     | 76    |
| Normal   | 21           | 3      | 24    |
| Total    | 71           | 29     | 100   |

**Table 9: Association between hysteroscopic and histopathology findings in study cases**

| Histopathology |            | Hysteroscopy |        | Total |
|----------------|------------|--------------|--------|-------|
|                |            | Abnormal     | Normal |       |
| Abnormal       | Count      | 51           | 13     | 64    |
|                | Percentage | 71.8%        | 44.8%  |       |
| Normal         | Count      | 20           | 16     | 36    |
|                | Percentage | 28.2%        | 55.2%  |       |
| Total          |            | 71           | 29     | 100   |

**Table 10: Measures of accuracy of hysteroscopy vis-à-vis histopathology**

| Measures                    | Estimate |
|-----------------------------|----------|
| Sensitivity of hysteroscopy | 71.83%   |
| Specificity                 | 55.17%   |
| Positive predictive value   | 79.69%   |
| Negative predictive value   | 44.44%   |

**Discussion**

In this study the diagnostic efficacy and accuracy of hysteroscopy in 100 cases of abnormal uterine bleeding (AUB) was evaluated and compared with that of pelvic ultrasound. Hysteroscopy guided endometrial biopsy is currently considered the gold standard in diagnosing endometrial pathologies<sup>3</sup>. As hysteroscopy is a subjective diagnostic test, its accuracy depends on the experience of the physician performing it<sup>4</sup>.

Taking endometrial biopsy under hysteroscopic view has advantages over blind biopsy. Dilation and curettage done blindly can miss focal lesions like submucous fibroids and polyps. On the other hand, hysteroscopic appearance permits a magnified diagnosis of lesions and directed biopsy. A meticulous study of surface, color, vascular arrangement, and general appearance permits estimation of the risk of malignancy and identifying areas of suspicion for biopsy. Dr. Frank Loffer in 1989 described the look of the normal tissue on hysteroscopy also called the negative hysteroscopic view<sup>5</sup>.

In our study most patients of AUB were between 40-49 years (42%). Gianninoto performed diagnostic hysteroscopy in 512 women with complaints of AUB, age ranging from 38 to 80 years and with mean age of 63 years<sup>6</sup>. Panda found the maximum incidence was in the age range of 35-45yrs<sup>7</sup>. In the present study 71% women consulted us within 6 months of symptoms of AUB. Siegler reported that

maximum number of patients consulted the gynaecologists within 1 year of symptoms<sup>8</sup>.

Menorrhagia as the primary indication for hysteroscopy was reported in 49.6% by Sciarra and Valle<sup>9</sup>. The same indication was found to be 37.5% by Hamou<sup>10</sup>. Incidence of positive findings on hysteroscopy was 52% in studies of Baggish and Barbot<sup>11</sup>. Positive findings in hysteroscopy were found to be 66% in study of Bhattacharya<sup>12</sup>. It was 74% in the present study and as high as 94.6% in Hamou's study<sup>10</sup>. The more rigorous the patient selection criteria and the more meticulous the procedure, the greater is the likelihood of a pathological causative lesion being found. Also, in women with seemingly disturbing symptoms of AUB as to warrant a hysteroscopy, a negative finding may be reassuring both to the patient and the gynaecologist considering conservative treatment, particularly in the perimenopausal and postmenopausal ages.

In a 2000 study by Trotensburgout of 819 cases 66% had a negative finding on hysteroscopy<sup>13</sup>. In a 2001 study by Garutiout of 1500 cases 61.8% were negative on hysteroscopy<sup>14</sup>. Likewise, a study by De Wit AC in 2003 detected a normal uterine cavity in 54.2% cases<sup>15</sup>.

Of the 71 AUB cases with abnormal findings on hysteroscopy, commonest pathology detected was endometrial hyperplasia (41 cases) followed by endometrial polyps (26 cases). Panda found endometrial hyperplasia in 28.3%<sup>7</sup>. Wamsteker found endometrial polyp in 19% cases and endometrial hyperplasia in 12.2%<sup>16</sup>. In the present study the incidence of CA endometrium was 2% as compared to Gianninoto's series which had an incidence of 16.4%<sup>6</sup>. The finding of atrophic endometrium was 2% in our study and is a finding which relieves the patient of bleeding. Endometrial atrophy was found to be 6% in Sciarra and Valle's study<sup>9</sup>.

In the present study, all ultrasound findings were confirmed by hysteroscopy. When correlated with histopathology hysteroscopy has proved to be better than sonography of the pelvis. The sensitivity of USG is found to be 70.42% and specificity as 10.34%. Janet R Albers et al in a series of 289 patients compared office hysteroscopy, ultrasound and endometrial biopsy in evaluation of abnormal uterine bleeding. The sensitivity of USG was 60% and specificity was 55%<sup>17</sup>.

As compared to USG, hysteroscopy was able to identify endometrial hyperplasia better (41% detected in hysteroscopy as compared to 24% on sonography) in our study. Polyps were diagnosed equally by both. Submucosal fibroids were identified in only 2% of patients on

hysteroscopy while they were seen in 16% cases on USG. Atrophy was not identified on USG but was detected in 2 cases on hysteroscopy.

### Conclusion

This study confirms that hysteroscopy is superior to only ultrasonography in evaluating patients with abnormal uterine bleeding. Hysteroscopy is a gold standard tool in evaluation of AUB because of its high sensitivity, specificity and negative predictive value. When combined with endometrial sampling and pelvic ultrasound it can establish the diagnosis accurately in majority of patients thereby reducing the burden of hysterectomy. Office hysteroscopy would further negate the need for anaesthesia or even hospitalization and make this procedure more affordable, shorter in duration and safer. It requires adequate training in hysteroscopy and its equipment. Apart from diagnosis hysteroscopy also provides the option of on-the-spot treatment in case of endometrial polyp or submucous fibroids. Hysteroscopy must always be undertaken with endometrial sampling to make sure that malignant pathologies are not missed out.

**Conflict of interest:** None. **Disclaimer:** Nil.

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