

Hysteroscopic Evaluation Of Abnormal Uterine Bleeding In A Tertiary Care Institute — An Observational Study

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ABSTRACT

Objectives: To assess the feasibility of diagnostic hysteroscopy in the diagnosis of abnormal structure and pathological lesions in the uterine cavities of women presenting abnormal bleeding of the uterus.

Methods: This is a Prospective Cross-sectional study conducted in the Department of Gynaecology at Prathima Institute Of Medical Sciences, Karimnagar: one hundred women presenting with Abnormal Uterine Bleeding, over a period of one year from December 2020 to November 2021, were subjected to the procedure.

Results: The results of our study show that hysteroscopy has high accuracy for detecting the pathology in women with abnormal uterine bleeding, especially in benign lesions such as endometrial polyp and submucosal fibroid and it can be used as the first line diagnostic method for these abnormalities.

Conclusion: Hysteroscopy provides a more accurate diagnosis than dilatation and curettage or ultrasonography alone to diagnose pathology in women with abnormal bleeding of the uterus. It is very sensitive for diagnosing intracavitary lesions like submucous myoma and endometrial polyp.

KEYWORDS: Abnormal Uterine Bleeding, Hysteroscopy, Transvaginal sonography

INTRODUCTION:

Abnormal uterine bleeding (AUB) is defined as bleeding from the uterine body that is abnormal in duration, frequency, and amount arising in the absence of pregnancy. Abnormal Uterine Bleeding is responsible for more than one-third of gynecologic consultations and nearly two-thirds of hysterectomies^[1].

Traditionally Dilatation and Curettage (D&C) and Ultrasonography were the most common investigations employed in the evaluation for the causes of Abnormal Uterine Bleeding. The gold standard in uterine cavity evalu-

ation is hysterectomy but it cannot be used as a diagnostic tool. Therefore, hysteroscopy can be used as a diagnostic tool as it permits direct visualization of the cervical canal and uterine cavity, enabling observation of intrauterine abnormalities. Hysteroscopy is useful for more accurate diagnosis and specific surgical or medical treatment directed at the specific pathology and will avoid the need for major surgery.

In the reproductive age group a misplaced IUCD, placental polyp, submucous myoma, structural abnormalities of the uterine cavity, Asherman's syndrome are frequently diagnosed with this modality of diagnostic hysteroscopy. In postmenopausal women, endometrial polyp, hyperplasia, malignancy are diagnosed with this approach. A single-step approach, especially in high-risk women as well as in women with endometrial hyperplasia, of combining the office hysteroscopy directed biopsy in the presence of a focal lesion and vacuum sampling of the endometrium, all without anaesthesia is the most minimally invasive and yet accurate approach in current practice^[2]. Hence, There is a need for hysteroscopic evaluation of patients with Abnormal Uterine Bleeding.

METHODS:

This study was conducted in the department of Obstetrics and Gynecology, Prathima Institute Of Medical Sciences, Nagnur, Karimnagar. The ethics committee's approval was obtained for this study. Written consent was obtained from all the participants of the study after explaining the nature of the study with expected outcomes in their own language

Inclusion criteria of the patients were patients visiting the gynaecological outpatient department with a history of Abnormal Uterine Bleeding. Exclusion criteria were Women with intrauterine pregnancy, Ectopic pregnancy, All types of abortions, Women diagnosed as carcinoma of cervix/ lower genital tract, Women with chronic pelvic inflammatory disease, Women with cervical fibroid, Gestational trophoblastic disorders

Study protocol

After counseling the patient & obtaining informed consent, all the patients were subjected to a thorough general examination and gynaecological examination. Routine investigations like Hb%, ABO & Rh typing, blood sugar, complete urine examination, coagulation profile, thyroid function tests, urine pregnancy test, and transvaginal ultrasound were done followed by hysteroscopy, followed by endometrial sampling under general anaesthesia, and sampled endometrium was sent for histopathological analysis.

The results of hysteroscopy and endometrial histopathology were noted, studied and analysed. Further patient management was determined by age, proportion, disease severity, hysteroscopy, and histopathological report.

RESULTS:

In the present study, hysteroscopy was performed on 100 patients who presented with Abnormal Uterine Bleeding followed by endometrial sampling. The sampled endometrium was sent for histopathological analysis. In the present study, the maximum age incidence was between 40-49 years, the youngest patient was 24 years old and the oldest was 56 years old.

In the present study menorrhagia (42%) was the most frequent indication for hysteroscopy. 23% of the patients presented with polymenorrhagia. 9% of the patients presented with postmenopausal bleeding. 8% with continuous bleeding per vaginum; 8% patients with polymenorrhoea; 7% with metrorrhagia and only 2% of the patients had metropathia haemorrhagica.

In the present study, 55% of patients had normal ultrasound findings. Table 2 Endometrial hyperplasia (23%) was the most commonly detected pathology, followed by Fibroid uterus (17%). The Endometrial polyp was found in 3 cases and an intrauterine device in the endometrial cavity was diagnosed on USG in 2 cases.

Abnormal findings on hysteroscopy were seen in 45% of the patients, while in the remaining 55%, no abnormality was detected (negative hysteroscopic view). The most common abnormality was Endometrial hyperplasia (18%), followed by endometrial polyp (8%). There were also 7 cases of Submucous myoma, 6 cases of Endometrial atrophy, 3 cases of suspected Carcinoma endometrium, 2 cases of Misplaced Cu-T, and 1 case of Endometritis, detected on hysteroscopy. Table 1

Of the 100 patients, 63 had normal findings (proliferative or secretory endometrium) on histopathology. 19% of the patients had Endometrial hyperplasia. 5 cases of Submucous myoma and 5 cases of Endometrial polyp were confirmed by histopathology. 4 cases of Endometrial atrophy and 2 cases of Endometritis were confirmed. 2 of the 3 suspected Carcinoma endometrium cases on hysteroscopy were confirmed by histopathology.

Hysteroscopy showed 7 cases of submucous myoma; out of which 5 were confirmed on histopathology. Out of 8 cases of endometrial polyp diagnosed on hysteroscopy, only 5 cases were confirmed on histopathology. On hysteroscopy, 6 cases showed atrophic endometrium, out of which 4 cases were confirmed on histopathology.

Out of 3 cases suspected as carcinoma endometrium on hysteroscopy, 2 cases were confirmed on histopathology. One showed adenocarcinoma of the uterus and the other one showed papillary serous carcinoma of the endometrium. One case of suspected carcinoma was diagnosed as proliferative endometrium. Tables 3 and 4

| Hysteroscopy for Myoma | Histopathology | | Total |
|------------------------|----------------|----------|-------|
| | Positive | Negative | |
| Positive | 05 | 02 | 07 |
| Negative | 00 | 93 | 93 |
| Total | 05 | 95 | 100 |

Sensitivity= TP/TP+FN=5/5* 100=100%
 Specificity= TN/FP+TN=93/95* 100=97.89%
 Positive predictive value= TP/TP+FP=5/7 * 100=71.42% Negative predictive value=TN/FN+TN=93/93* 100=100%

Table 3: Accuracy of hysteroscopy for submucous myoma (n=100)

| Hysteroscopy for Polyp | Histopathology | | Total |
|------------------------|----------------|----------|-------|
| | Positive | Negative | |
| Positive | 05 | 03 | 08 |
| Negative | 00 | 92 | 92 |
| Total | 05 | 95 | 100 |

Sensitivity= TP/TP+FN=5/5* 100=100%
 Specificity= TN/FP+TN=92/95* 100=96.84%
 Positive predictive value= TP/TP+FP=5/8 * 100=62.5% Negative predictive value=TN/FN+TN=92/92* 100=100%

Table 4: Accuracy of hysteroscopy for endometrial polyp (n=100)

DISCUSSION

Menstrual dysfunction is the cause of the discomfort, inconvenience and disruption of a healthy lifestyle, which affects millions of women in both developed and developing world [3]. Abnormal Uterine Bleeding is one of the most common gynaecological disorders that prompts a patient to consult a physician. As quoted by Devi and Menon, the incidence is 30–40% of all gynaecological cases [4].

Transvaginal sonography alone or D&C alone cannot accurately diagnose the cause for Abnormal Uterine Bleeding.

| Hysteroscopic Finding | Histopathological report | | | | | | | Total |
|-----------------------|--------------------------|-------------|----------|----------|----------|-----------|--------------|------------|
| | Normal | Hyperplasia | Myoma | Poly p | Atrophy | Carcinoma | Endometritis | |
| Normal | 54 | 1 | 0 | 0 | 0 | 0 | 0 | 55 |
| Hyperplasia | 2 | 16 | 0 | 0 | 0 | 0 | 0 | 18 |
| Submucous myoma | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 7 |
| Endometrial polyp | 2 | 1 | 0 | 5 | 0 | 0 | 0 | 8 |
| Atrophy | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 6 |
| Carcinoma endometrium | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Endometritis | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Misplaced Cu-T | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Total | 63 | 19 | 5 | 5 | 4 | 2 | 2 | 100 |

Table 1: Correlation between hysteroscopic and histopathological findings

| Hysteroscopy | Histopathology | | Total |
|--------------|----------------|-----------|------------|
| | Abnormal | Normal | |
| Abnormal | 36 | 09 | 45 |
| Normal | 01 | 54 | 55 |
| Total | 37 | 63 | 100 |

Sensitivity= TP/TP+FN=36/37* 100=97.2%

Specificity= TN/FP+TN=54/63* 100=85.7%

Positive predictive value= TP/TP+FP=36/45* 100=80% Negative predictive value= TN/FN+TN=54/55* 100=98.1%

Table 2: Overall comparison between hysteroscopy and histopathology (n=100)

Therefore, TVS followed by Hysteroscopy with guided biopsy is preferred. Hysteroscopy combined with guided biopsy is more sensitive in disclosing the type of lesion than D&C [5]. It is considered as the gold standard for determining the cause of endometrial pathologies presenting with Abnormal Uterine Bleeding [6].

Majority of patients in our study (48%) belonged to the age group of 40-49 years. These findings were similar to Chandra et al [7] and Jyotsana et al [8]. Panda et al [9] and Hunter et al. [10] also reported similar findings from which we can infer that AUB is common finding pre and perimenopausal women.

Menorrhagia (42%) was the chief complaint and the indication for hysteroscopy, followed by polymenorrhagia (23%) in our study. 9% of patients presented with postmenopausal bleeding. These findings were similar to Sheetal et al [11] who reported menorrhagia in 25% cases, polymenorrhagia in 13% and postmenopausal bleeding in 7%. Menorrhagia as the primary indication for hysteroscopy was reported in 49.6% by Sciarra and Valle [12] and 37.5% by Hamou [13]

while postmenopausal bleeding (43.7%) and abnormal perimenopausal uterine bleeding (56.3%) were the main indications in the study by Pasqualotto et al. [14]. 8% of patients had complaints of continuous bleeding per vaginum, another 8% had polymenorrhoea, 7% had metrorrhagia, 2% had metropathia haemorrhagica and only 1% had menometrorrhagia in our study. 55% of patients had normal findings on ultrasonogram. Endometrial hyperplasia (23%) was the most common pathology, followed by fibroid uterus (17%), endometrial polyp (3%) and intrauterine contraceptive device (2%). Sheetal et al. [11] reported normal USG findings in 62% of the patients in their study from which we can infer that USG findings can be normal in more than 50% of patients presenting with AUB.

Hysteroscopy showed normal findings in 55% of patients and positive/abnormal findings in 45% of patients in our study. The incidence of positive findings was 52% in studies by Baggish and Barbot [15] and Schwarzler [16], 66% in study by Bhattacharya [17], 74% in study by Gita [18] and 94.6% in study by Hamou [19]. As Per our study the overall diagnostic accuracy of hysteroscopy for diagnosing

intrauterine pathology was 90%. Panda et al. [9] had reported a similar diagnostic accuracy of the procedure as 92.5%. In our study, sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of hysteroscopy in patients with AUB were 97.2%, 85.7%, 80% and 98.1% respectively. In the study of Allameh et al. [19], the sensitivity, specificity, PPV and NPV of hysteroscopy in the diagnosis of intrauterine lesions were 100%, 80.5%, 88.9% and 100% respectively. Barati et al [20] reported sensitivity, specificity, PPV and NPV of 97.8%, 99%, 94% and 99% for hysteroscopy in diagnosing intra cavity pathology in women with AUB. The results of these studies are similar to the results of our study. In this study, sensitivity, specificity, PPV, and NPV of hysteroscopy in detecting submucosal myoma were 100%, 97.89%, 71.42%, and 100% respectively. In the study of Allameh et al. [19], the sensitivity, specificity, PPV, NPV of hysteroscopy for submucosal myoma were 100%, 96.4%, 88% and 100% respectively. Sheetal et al [11] reported sensitivity, specificity, PPV, and NPV of hysteroscopy for fibroid as 100%, 89.89%, 90.9%, and 100%, respectively. Pasqualotto et al [14] also reported the sensitivity of hysteroscopy for detection of submucosal myoma as 100%. In the study of Kelekci et al. [21] hysteroscopy had sensitivity, specificity, PPV, and NPV of 100%, 100%, 100%, and 100% respectively in detecting submucosal myoma. Therefore, hysteroscopy is highly sensitive and specific for detecting submucous myoma in patients with AUB. The Diagnostic accuracy of hysteroscopy in detecting submucous myoma was found to be 98% in our study. The Diagnostic accuracy of hysteroscopy for endometrial polyp was 97% when compared to histopathology. Anuradha Panda [9] had reported diagnostic accuracy of 100% in diagnosing polyp. But Valle [22] and Sheth [23] had obtained a diagnostic accuracy of 88.6 and 81.8%, respectively.

In our study detection of endometrial polyp by hysteroscopy had a sensitivity of 100%, specificity of 96.84%, PPV of 62.5%, and NPV of 100%. Sheetal et al. reported sensitivity, specificity, PPV, and NPV of hysteroscopy for endometrial polyp compared to histopathology as 100%, 95.78%, 55.55%, and 100%, respectively. In the study of Allameh et al. [19], the sensitivity, specificity, PPV, and NPV of hysteroscopy for detecting endometrial polyp were 93%, 100%, 100%, and 95.4% respectively.

Pasqualotto et al. reported the sensitivity of hysteroscopy for detection of endometrial polyp as 99%. Therefore, our study shows a high sensitivity of hysteroscopy in the detection of an endometrial polyp, and these findings are similar to the findings of the above-mentioned studies.

Thus, hysteroscopy has high diagnostic accuracy in detecting localized intracavitary uterine lesions such as polyp and myoma.

CONCLUSION:

Hysteroscopy was very accurate (100%) in diagnosing intrauterine diseases such as endometrial polyp, submucous

myoma, Cu-T placement rather than endometrial biopsy or dilatation and curettage only.

The results of our study indicate that hysteroscopy has high accuracy in detecting women with abnormal uterine bleeding, especially in lesions such as endometrial polyp and submucosal fibroid and can be used as a first diagnostic tool for these abnormalities. However, hysteroscopy should be combined with endometrial biopsy to increase the accuracy of the diagnosis.

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