

Prospective Analytical Assessment of the Role of Hysteroscopy and Histopathology in Evaluation of Patients with Abnormal Uterine Bleeding

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Abstract

Aim: Role of hysteroscopy and histopathology in evaluating patients with abnormal uterine bleeding.

Methods: This prospective analytical study was carried out in the Department of Obstetrics and Gynecology, Netaji Subhas Medical College and Hospital, Bihta, Patna, Bihar, India for 12 months. 100 consecutive cases of abnormal uterine bleeding were taken up for the study. All the patients in this study underwent Hysteroscopy followed by Hysteroscopic guided biopsy or Dilatation and Curettage and the biopsy specimen or curetting's were sent for Histopathological analysis. Both Parous and nulliparous women with age between 25-60 years with Abnormal Uterine Bleeding who did not require any emergency management were included in the study.

Results: In the present study, hysteroscopy was performed in 100 patients presenting with complaints of abnormal uterine bleeding followed by hysteroscopic biopsy or curettage. The commonest presenting complaint in this series was menorrhagia (53%) followed by polymenorrhea (17%) followed by Postmenopausal bleeding (15%).

Conclusions: Hysteroscopy is a safe and reliable procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity, positive predictive value and negative predictive value.

Keywords: Hysteroscopy, menorrhagia, biopsy

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Introduction

Abnormal uterine bleeding is one of the most common problems that challenge the gynaecologist. Virtually every woman will at some point in her lifetime experience episodes of bleeding that will be perceived as abnormal. Abnormal uterine bleeding (AUB) is defined as any type of bleeding in which the duration, frequency, or

amount is abnormal for an individual patient.¹ Abnormal uterine bleeding is responsible for more than one-third of gynecologic consultations and nearly two-thirds of hysterectomies.^[1] It is estimated that a woman has a 1 in 20 lifetime chance of consulting her primary physician because of menorrhagia.^[2] Abnormal uterine bleeding occurs in 9 to 14% of

women between menarche and menopause, significantly affecting quality of life and imposing financial burden.[3]

Abnormal uterine bleeding can be caused by wide variety of disorders. Although it may represent a normal physiological state which warrants only observation, it can also be an indirect sign of other more or less serious underlying disease necessitating aggressive treatment that could even warrant a hysterectomy. Because of its broad range of differential diagnosis, the diagnosis of AUB can be quite challenging; despite a detailed history, various blood tests, and a thorough pelvic examination often involving ultrasonography, the cause of the bleeding is established only in 50-60% of cases.[4] Before instituting any therapy, the clinician should make a correct diagnosis. Many authors have suggested endometrial sampling must be taken in all women ≥ 35 years old with abnormal uterine bleeding. Though Dilatation & Curettage was the primary method of evaluating AUB before the evolution of hysteroscopy, it is a blind and incomplete procedure. It will only scrape less than 50% of the endometrial cavity in 60% of the patients.[5] D and C is less accurate than hysteroscopy in diagnosing structural pathology such as polyps, fibroids, intrauterine adhesions and congenital malformations and has a cancer detection failure rate of 0.9%.[6]

TVS has a high false-negative rate and less accurate than hysteroscopy in diagnosing focal intrauterine pathology.[7] Though the ultimate gold standard in uterine cavity evaluation is hysterectomy, it cannot be used as a diagnostic tool.[8] Instead of that, Hysteroscopy can be used as a diagnostic tool as it permits direct visualisation of the cervical canal and uterine cavity, enabling observation of intrauterine abnormalities. This safe procedure will lead to more accurate diagnosis and specific surgical or medical treatment directed at the specific pathology

and will avoid the need for major surgery. According to Valle, hysteroscopy is not a substitute for tissue diagnosis.[9] Hysteroscopy combined with histopathological examination is the new "gold standard" method for evaluating the cases of AUB.[10]

Material and Methods

This prospective comparative study was carried out in the Department of Obstetrics and Gynecology, Netaji Subhas Medical College and Hospital, Bihta, Patna, Bihar, India for 12 months.

Methodology

100 consecutive cases of abnormal uterine bleeding were taken up for the study. All the patients in this study underwent Hysteroscopy followed by Hysteroscopic guided biopsy or Dilatation and Curettage and the biopsy specimen or curetting's were sent for Histopathological analysis. Both Parous and nulliparous women with age between 25-60 years with Abnormal Uterine Bleeding who did not require any emergency management were included in the study. Patients with severe anaemia due to menorrhagia, with profuse bleeding, with large or multiple fibroids, patients with infection in the uterine tract and pregnant women were excluded from the study. Patients were selected by diagnosis on History, General Physical Examination, Abdominal and Pelvic Examination and Routine investigations. Patients were informed in local language about the study/ procedure and written consent was obtained. Hysteroscopy was performed under General anesthesia.

The instrument used was a Karl Storz hysteroscope. Patients were placed in the lithotomy position and the position of the uterus confirmed by bimanual examination. The Hysteroscope was connected to the distention medium which was Normal Saline or Glycine. The Hysteroscope was introduced into the cervical canal under direct vision until the

whole uterine cavity and fundus were seen to be well distended. Each uterine cornua was identified and the cavity inspected for pathological lesions. Hysteroscopic guided biopsy or polypectomy was performed wherever suspicious area present or a full Dilatation and Curettage was done.

Statistical package for social sciences (SPSS - Version 25.0) was used to carry out the statistical analysis of data.

Results

Table 1: Age distribution of patients

Age (years)	No. of patients	Percentage
25-30	9	9
31-40	50	50
41-50	34	34
51-60	8	7
Total	100	100

Table 2: Clinical presentation of patients

Presentation	No. of Patients	Percentage
Menorrhagia	52	52
Polymenorrhea	18	18
Post menopausal bleeding	14	14
Polymenorrhagia	13	13
Metrorrhagia	3	3

In the present study, age group included was 25-60 years. Maximum age incidence was between 31-40 years (50%). Among the 100 patients, majority of the patients (52 cases, 52%) presented with complaints

of menorrhagia, followed by Polymenorrhea (18 cases, 18%). Postmenopausal bleeding was present in 14% cases, polymenorrhagia in 13% cases while metrorrhagia was seen in 3% cases.

Table 3: Findings at hysteroscopy

Findings	No. of patients	Percentage
Normal	50	50
Endometrial hyperplasia	27	27
Endometrial polyps	21	21
Submucous myoma	2	2

Table 4: Findings at histopathology

Findings	No. of patients	Percentage
Normal	55	55
Endometrial hyperplasia	26	26
Endometrial polyps	17	17
Endometritis	2	2

Abnormal findings were diagnosed in 55 cases (55%), while in the remaining 50 cases, normal endometrium was seen on hysteroscopy. The most common abnormality detected was Endometrial

Hyperplasia (27 cases, 27%) followed by endometrial polyps (21 cases, 21%) while Submucous myomas were detected in 3 cases (3%).

Table 5: Correlation of type of abnormal uterine bleeding with histopathology

Clinical presentation	Findings at histopathology				Total
	Normal	Endometrial Hyperplasia	Endometrial Polyps	Endometritis	
Menorrhagia	31	13	9	0	53
Polymenorrhea	12	2	3	0	17
Post menopausal bleeding	2	3	9	1	15
Polymenorrhagia	8	3	1	1	13
Metrorrhagia	2	0	0	0	2
Total	55	28	15	2	100

Table 6: Correlation of type of AUB with hysteroscopy.

Clinical presentation	Findings at histopathology				Total
	Normal	Endometrial Hyperplasia	Endometrial Polyps	Endometritis	
Menorrhagia	30	12	8	3	53
Polymenorrhea	11	1	5	0	17
Post menopausal bleeding	1	10	4	0	15
Polymenorrhagia	8	2	3	0	13
Metrorrhagia	1	1	0	0	2
Total	51	26	20	3	100

Of the 53 patients with menorrhagia, 31 cases had normal endometrium on histopathology, 13 cases had endometrial hyperplasia while Endometrial polyps were detected in 9 cases. Among the 17 patients with polymenorrhea, polyps were detected on histopathology in 3 cases and hyperplasia was present in 1 case. Of the 15 patients with postmenopausal bleeding, 9 patients had endometrial hyperplasia on

histopathology, 3 patients had polyps and 1 had endometritis while 2 patients had normal endometrium on histopathology. Of the 13 patients with polymenorrhagia, histopathology detected normal endometrium in 8 patients, 3 patients had hyperplasia and there was one case each of polyp and endometritis. Both the cases of metrorrhagia had normal endometrium.

Table 7: Hysteroscopic and histopathological correlation in study patients

Hysteroscopy findings	Findings at histopathology				Total
	Normal	Endometrial Hyperplasia	Endometrial Polyps	Endometritis	
Normal	46	3	0	2	50
Endometrial hyperplasia	2	24	1	0	27
Endometrial polyps	5	1	15	0	21
Submucous myoma	2	0	0	0	2
Total	56	27	16	1	100

Among the 53 patients with menorrhagia, endometrial hyperplasia was seen in 12 patients, endometrial polyps in 8 patients and sub mucus myomas in 3 patients. Of The 17 patients with polymenorrhea, 5 patients had endometrial polyps and one patient had endometrial hyperplasia. Of the 15 patients with postmenopausal bleeding, 10 patients had endometrial hyperplasia, 4 patients had endometrial polyps and one patient had normal endometrium on hysteroscopy. Of the 13 patients with polymenorrhagia, 2 patients had

endometrial hyperplasia and 3 patients had endometrial polyps. Out of the 2 patients of metrorrhagia, 1 case had normal endometrium and 1 case had hyperplastic endometrium detected on hysteroscopy.

Of the 50 cases showing normal endometrium on hysteroscopy, 46 patients had normal endometrium on histopathology as well, 3 cases had hyperplasia and one case had endometritis detected on histopathology. Of the 27 cases showing hyperplasia on hysteroscopy, 24 had hyperplasia on histopathology as well while 2 patients had normal endometrium on histopathology examination.

Of the 21 cases showing endometrial polyps on hysteroscopy, histopathology detected polyps in 15 cases and 5 cases were described as normal. 1 cases of

submucous myomas were detected on hysteroscopy. In this study, hysteroscopy had a sensitivity of 93.2%, specificity of 83.9%, positive predictive value of 82%, Negative Predictive Value of 94% in diagnosing etiology of abnormal uterine bleeding. For detecting hyperplasia, hysteroscopy has a sensitivity of 92.6%, specificity of 97.3%, Positive Predictive Value of 92.6 %, Negative Predictive Value of 97.3%. For detecting endometrial polyps, hysteroscopy has a sensitivity of 100%, specificity of 94.1%, Positive Predictive Value of 76.2%, Negative Predictive Value of 100%.

Discussion

The age group studied was 25-60 years. The maximum incidence found was between 31-40 years (50%) with the youngest patient being 26 years and oldest patient 60 years old; these findings are being supported by Sangeeta Series [11] in which maximum age incidence was between 31-40 years (56%) and Dirgha [12] series in which maximum age incidence was between 31-40 years (42.7%). The commonest presenting complaint in this series was menorrhagia (53%) followed by polymenorrhea (17%) followed by Postmenopausal bleeding (15%). These findings are supported by Phalak R[13] series in which 60% of the cases had menorrhagia and Aisha Razzaq[14] series in which menorrhagia was seen in 38.8% cases.

Of the 50 cases with abnormal findings on hysteroscopy, commonest pathology seen was Endometrial hyperplasia (27%) followed by endometrial polyps (21%) and submucous myomas were seen in 2% of the cases; these findings are being supported by Phalak R[13] series in which hyperplasia was found in 40% cases, Polyps were found in 32% cases and submucous fibroids were seen in 8% cases. In this study, histopathology showed abnormal findings in 44 cases (44%). Of these, 27 cases had hyperplasia, 16 cases had polyps and 1 case had endometritis; these findings are in accordance with Phalak Rajesh [13] in which abnormal histopathology findings were present in 44% cases of which 45.46% cases had hyperplasia, 27.27% cases had polyps and 9.09% cases had submucosal fibroids and Aisha Razzaq[14] series in which histopathology detected abnormalities in 60% cases of which hyperplasia was present in 20% cases, polyps in 18.8% cases and fibroids in 11.3% cases.

Of the 50 cases showing normal endometrium on hysteroscopy, 46 patients had normal endometrium on histopathology as well, 3 cases had hyperplasia and one case had endometritis detected on histopathology. Statistically, true positives were 41, false positives 9, true negatives 47 and false negatives were 3. Calculating these data, hysteroscopy had a sensitivity of 93.2%, specificity of 83.9%, positive predictive value of 82%, negative predictive value of 94% and diagnostic accuracy of 88% for diagnosing etiology of abnormal uterine bleeding; These results are being supported by Phalak R[13] series which showed hysteroscopy to have a sensitivity of 95.65%, specificity of 88.46%, positive predictive value of 88%, negative predictive value of 95% and diagnostic accuracy of 91.84% and Pop Trajković Dinić S¹⁵ series in which hysteroscopy had a sensitivity of 100% in the detection of

intrauterine pathology, specificity of 81%, the positive predictive value of 92% and the negative predictive value of 100%. [15]

Of the 27 cases showing hyperplasia on hysteroscopy, 24 had hyperplasia on histopathology as well while 2 patients had normal endometrium on histopathology examination. Hence, true positives were 25, false positives 2, false negatives 2 and true negatives 71, hence hysteroscopy had a sensitivity of 92.6%, specificity of 97.3%, positive predictive value of 92.6%, negative predictive value of 97.3% and accuracy of 96%; these findings are being supported by Torreón R [16] series in which sensitivity was 71.8% and specificity 96.4%.

Of the 21 cases showing endometrial polyps on hysteroscopy, histopathology detected 15 cases and 5 cases were described as normal. Thereby, true positives were 16, false positives 5, false negative 0 and true negatives 79. Hence hysteroscopy had a sensitivity of 100%, specificity of 94.1%, positive predictive value of 88%, negative predictive value of 100% and accuracy of 96%. These findings are being supported by Tajossadat[17,18] series in which hysteroscopy had a sensitivity of 93%, specificity of 100%, positive predictive value of 100%, negative predictive value of 95.4% in diagnosing endometrial polyps.

Conclusion

Hysteroscopy is a safe and reliable procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity, positive predictive value and negative predictive value.

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