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Original Research Article

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

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ABSTRACT

Background: Abnormal uterine bleeding is one of the leading causes for seeking gynaecological advice. The aim and objectives of the study was to determine the pattern of hysteroscopic abnormalities and histopathological features of Abnormal Uterine Bleeding and to correlate hysteroscopic findings with histopathological findings.

Methods: The present study “Role of Hysteroscopy and Histopathology in Evaluating patients with Abnormal Uterine Bleeding” was an observational study carried out in the Postgraduate Department of Obstetrics and Gynaecology and Postgraduate Department of Pathology of Government Medical college, Srinagar after obtaining clearance from the institutional ethical committee. The period of the study was One and a Half Years from April 2014 to September 2015.

Results: The most common abnormality detected by hysteroscopy was Endometrial Hyperplasia (27 cases, 27%) followed by endometrial polyps (21 cases, 21%). Endometrial Hyperplasia was the most common abnormality found in Menorrhagia followed by polyps while polyps were the most common finding in polymenorrhea and endometrial hyperplasia was the most common pathology in postmenopausal bleeding. 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.

Conclusions: This study confirms that hysteroscopy has a definitive role in evaluating patients with abnormal uterine bleeding and hysteroscopy and histopathology complement each other in the evaluation of a patient with Abnormal uterine bleeding.

Key words: Endometrial hyperplasia, Hysteroscopic abnormalities, Menorrhagia

INTRODUCTION

Abnormal uterine bleeding is one of the leading causes for seeking gynaecological advice. The incidence of Abnormal Uterine Bleeding is 30–40% of all gynaecological cases quoted by Devi and Menon.¹

The international federation of gynaecology and obstetrics (FIGO) has approved a new classification system (polyps, adenomyosis, leiomyoma, malignancy and hyperplasia – coagulopathy, ovulatory disorders,

endometrial causes, iatrogenic, not classified [PALMCOEIN]) for causes of Abnormal Uterine Bleeding in non gravid women of reproductive age.²

Hysteroscopy has ushered a new era in the evaluation of abnormal uterine bleeding. By direct visualization of uterine cavity it is able to pin point the etiology.³

Hysteroscopy allows direct visualization of the endometrial cavity and importantly, directed endometrial sampling of any suspicious areas.⁴

Aims and objectives

1. To determine the pattern of hysteroscopic abnormalities in Abnormal Uterine Bleeding.
2. To determine the Histopathological features of Abnormal Uterine Bleeding.
3. To correlate hysteroscopic findings with histopathological findings.

METHODS

The present study "Role of Hysteroscopy and Histopathology in Evaluating patients with Abnormal Uterine Bleeding" was an observational study carried out in the Postgraduate Department of Obstetrics and Gynaecology, Government Lalla Ded Hospital of Government Medical college, Srinagar and Postgraduate Department of Pathology of Government Medical college, Srinagar after obtaining clearance from the institutional ethical committee. The period of the study was One and a Half year from April 2014 to September 2015. 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 curettings 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 anaesthesia.

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.

The specimens were sent to the Department of Pathology, Government Medical College for Histopathological examination. Statistical package for social sciences

(SPSS - Version 16.0) was used to carry out the statistical analysis of data.

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 specimen was sent for histopathologic examination. The hysteroscopic and histopathologic patterns were studied and the measures of validities were computed taking histopathology as the gold standard.

Table 1: Age distribution of patients.

Age (years)	No. of patients	Percentage
25-30	10	10
31-40	49	49
41-50	33	33
51-60	8	8
Total	100	100

Table 2: Clinical presentation of patients.

Presentation	No. of Patients	Percentage
Menorrhagia	53	53
Polymenorrhea	17	17
Post menopausal bleeding	15	15
Polymenorrhagia	13	13
Metrorrhagia	2	2

In the present study, age group included was 25-60 years. Maximum age incidence was between 31-40 years (49%). Among the 100 patients, majority of the patients (53 cases, 53%) presented with complaints of menorrhagia, followed by Polymenorrhea (17 cases, 17%). Postmenopausal bleeding was present in 15% cases, polymenorrhagia in 13% cases while metrorrhagia was seen in 2% 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	56	56
Endometrial hyperplasia	27	27
Endometrial polyps	16	16
Endometritis	1	1

Abnormal findings were diagnosed in 50 cases (50%), 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 2 cases (2%).

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	13	1	3	0	17
Post menopausal bleeding	2	3		0	15
Polymenorrhagia	8	3	1	1	13
Metrorrhagia	2	0	0	0	2
Total	56	27	16	1	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	9	2	53
Polymenorrhea	11	1	5	0	17
Post menopausal bleeding	1	10	4	0	15
Polymenorrhagia	7	3	3	0	13
Metrorrhagia	1	1	0	0	2
Total	50	27	21	2	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, 10 patients had endometrial hyperplasia on histopathology, 3 patients had polyps 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	47	2	0	1	50
Endometrial hyperplasia	2	25	0	0	27
Endometrial polyps	5	0	16	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 9 patients and submucus myomas in 2 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, 3 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, 47 patients had normal endometrium on histopathology as well, 2 cases had hyperplasia and one case had endometritis detected on histopathology. Of the 27 cases showing hyperplasia on hysteroscopy, 25 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 16 cases and 5 cases were described as normal. 2 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

Abnormal uterine bleeding is one of the leading causes of seeking gynecological advice. The causes of Abnormal Uterine Bleeding and its differential diagnosis are heterogeneous and complex. Hysteroscopy has ushered a new era in the evaluation of abnormal uterine bleeding. By direct visualization of uterine cavity it is able to pinpoint the etiology.³ Hysteroscopy should ideally be done in all cases where a transvaginal ultrasound reveals a thickened endometrium.⁵ Diagnostic hysteroscopy is a commonly performed gynecologic procedure to evaluate the endometrial cavity. Broadly, 2 systems of diagnostic hysteroscopy exist: Panoramic and Contact.

The age group studied was 25-60 years. The maximum incidence found was between 31-40 years (49%) with the youngest patient being 26 years and oldest patient 60 years old; these findings are being supported by Sangeeta Series⁶ in which maximum age incidence was between 31-40 years (56%) and Dirgha⁷ 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 R⁸ series in which 60% of the cases had menorrhagia and Aisha Razzaq⁹ 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 R⁸ 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 Rajesh⁸ 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 Razzaq⁹ 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, 47 patients had normal endometrium on histopathology as well, 2 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 R⁸ 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 S¹⁰ 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%.

Of the 27 cases showing hyperplasia on hysteroscopy, 25 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 Torrejon R¹¹ series in which sensitivity was 71.8% and specificity 96.4%.

Of the 21 cases showing endometrial polyps on hysteroscopy, histopathology detected 16 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 Tajossadat¹² 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.

Measures of validities for submucous myomas were not calculated as only 2 cases of submucous myomas were detected.

CONCLUSION

This study confirms that hysteroscopy has a definitive role in evaluating patients with abnormal uterine bleeding. 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. The results of hysteroscopy are immediately available. Hysteroscopy and histopathology complement each other in the evaluation of a patient with abnormal uterine bleeding for accurate diagnosis and further treatment of abnormal uterine bleeding.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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