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Original Research Article

A clinical study of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation

Shanmugapriya Kumaresan*, Devika Perumal

Department of Obstetrics and Gynecology, Government Dharmapuri Medical College and Hospital, Dharmapuri, Tamil Nadu, India

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***Correspondence:**
Dr. Shanmugapriya Kumaresan,
E-mail: drpriyakumaresan@gmail.com

ABSTRACT

Background: Abnormal uterine bleeding is a common clinical problem with myriad of causes. The diagnosis and management of abnormal menstrual function must be based on an understanding of the physiologic mechanisms involved in the regulation of the normal cycles. Diagnostic hysteroscopy is a valuable tool in diagnosing structural intra-cavital pathology, very suitable for out-patient clinic.
Methods: This is a prospective study which has been carried out in the Department of Obstetrics and Gynecology, Tirunelveli medical college hospital, Tirunelveli, Tamil Nadu from January 2011 to October 2011.
Results: A total of 50 cases were analysed among the 50 patients tested. 26 patients had some pathology of which 24were accurately detected by hysteroscopy, missed 2 cases of irregular shedding endometrium which was reported by histopathology.
Conclusions: Hysteroscopy is a safe, reliable and quick procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity and negative predictive value.

Keywords: Abnormal uterine bleeding, Hysteroscopy, Histopathology

INTRODUCTION

Although uterine bleeding is a normal physiologic episodic occurrence for most women, its characteristics nevertheless vary considerably.

The broad range of normal variation causes difficulty in identifying abnormal patterns. The problem is that uterine bleeding has a wide range of diagnostic possibilities and confusion is generated when review and reports fail to outline the diagnostic evaluation of the patient who presents with abnormal uterine bleeding patterns.

Goals of clinical management are primarily dependent upon attaining a correct etiological diagnosis. The history, physical and pelvic examinations attempt to determine the site of the bleeding and its source. Information gathered from this will suggest what direction the investigation would take. Traditionally, Dilatation and Curettage and Ultrasonography were the most common investigations employed in the evaluation of the causes of abnormal uterine bleeding.[1]

Dilatation and Curettage is a blind procedure and the endometrium has to be sent to the Pathologist to study histological patterns and for the report. The co-operation of the Pathologist is important. Ultrasonography clearly depicts the uterine contour and the status of the ovary, but fails to provide adequate information regarding the endometrium.

Hysteroscopy has ushered a new era in the evaluation of abnormal uterine bleeding. By direct visualization of the uterine cavity, it is possible to pin point the etiology in the majority of the cases. It can accurately detect endometrial hyperplasia and aids in the early diagnosis of endometrial carcinoma and uterine polyps.

Abnormal uterine bleeding is one of the most common complaints with which a patient presents to a Gynaecologist. D&C has long been the diagnostic gold standard for abnormal uterine bleeding. However only 70% - 80% of the endometrium can be curetted. Polyps and sub mucous fibroids are frequently undetected by curettage alone.[1]

The judicious use of hysteroscopy to manage this medical entity adds a new dimension in handling this often perplexing problem.

This study has been taken to analyze the place of hysteroscopy in the evaluation of Abnormal Uterine Bleeding in terms of accuracy of hysteroscopic findings and the contribution of the procedure to clinical diagnosis. It also aims to correlate hysteroscopic findings with histopathological results.

METHODS

The present study is a prospective study which has been carried out in the Department of Obstetrics and Gynecology, Tirunelveli Medical College Hospital, Tirunelveli, Tamilnadu.

The materials included all the AUB patients attending the OPD and were admitted for hysteroscopy and D&C.

Fifty cases of AUB were taken for the study. Any comorbid illness was excluded.

All the patients in the study were subjected through detailed history taking, general physical examination, specific examination in the form of per speculum and per vaginal examination (unless actively bleeding).

Routine blood and urine investigations (hemoglobin [Hb]%, ABO and Rhesus (Rh), blood sugar, bleeding time, clotting time, urine routine and microscopy) were ordered for all patients.

USG of all the patients were done. Detailed informed consent of all the patients was obtained before taking up for any procedure. Hysteroscopy and diagnostic D&C were done for each of these patients.

Hysteroscopic-guided curettings were also taken and sent for histopathological analysis. The findings at USG, D&C reports, hysteroscopy were compared with each other. The procedures were done under total intravenous (IV) anesthesia in operation theater.

Inclusion criteria

- Patients with age between 20 – 60 years with AUB
- Multiparous and nulliparous women
- Patients who do not require any emergency management.

Exclusion criteria

- Patients with profuse bleeding
- Cases with large or multiple fibroids
- Infection in the genital tract
- Malignancies of the genital tract.

RESULTS

In the present study, Panoramic hysteroscopy was performed using a 5mm hysteroscope with 30 degrees fore oblique lens in 50 patients who presented with Abnormal Uterine Bleeding by Dilatation and Curettage. The endometrium was sent for histopathological analysis.

Table 1: Age incidence.

Age group in years	No. of patients	Percentage
20-29	3	6
30-39	17	34
40-49	20	40
50-60	10	20

In the present study, maximum age incidence was between 40-49, 20 patients (40%). The youngest patient in this study was 24 yrs old and the oldest was 60 yrs old.

Table 2: Duration of symptoms.

Duration	No. of patients	Percentage
<6 months	13	26
6 months-1 year	17	34
>1 year	20	40

50 patients, majority: 20 patients (40%) had symptoms for more than 1 year, 17 patients (34%) had symptoms for 6 months to 1 year and 13 patients (26%) had symptoms for less than 6 months.

Table 3: Correlation between age and duration of symptoms.

Age/duration	< 6 months	6 months to 1 year	>1 year
20-29	2	1	0
30-39	0	9	8
40-49	5	4	11
50-60	6	3	1

Of the 50 patients, patients in the age group of 30-39 had symptoms for 6 months to 1 year duration.

Table 4: Parity.

Parity	No. of patients	Percentages
Nulliparous	6	12
Multiparous	26	56
Grandmulti	18	36

Table 5: Clinical presentation.

Clinical presentation	No. of patients	Percentage
Menorrhagia	22	44
Polymenorrhoea	9	18
Metorrhagia	6	12
Postmenopausal bleeding	13	26

Of the 50 patients, polymenorrhoea was the common clinical presentation in the age group of 40 -49 years and menorrhagia was the most common presentation in the age group of 30 -39 years.

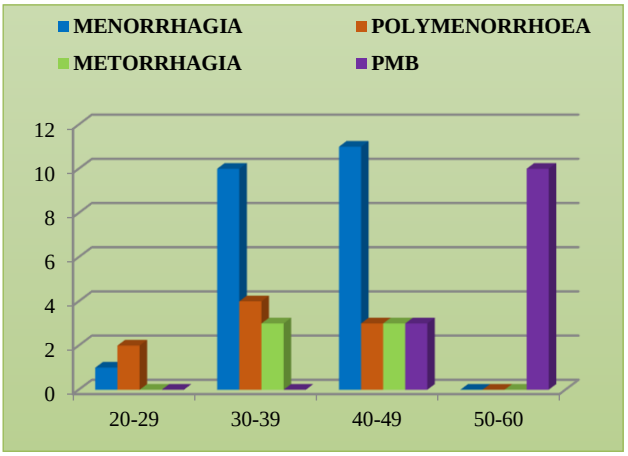

Figure 1: Age distribution and condition evaluated.

Abnormal findings were seen in 25 patients (50%), while in the remaining 25 patients (50%), no abnormality was detected.

The most common abnormality was endometrial hyperplasia (10 cases, 20%) followed by endometrial polyps (5 cases, 10%). There were also 5 cases (10%) of submucous myomas (4 cases, 8%) of endometrial atrophy.

Table 6: Findings at hysteroscopy.

Findings	No. of patients	Percentage
E. Polyp	5	10
Submucous myoma	5	10
E. hyperplasia	10	20
E. atrophy	4	8
Endometritis	1	2
Normal	25	50

Both hysteroscopy and curettage were accurate when an abnormality was diagnosed, giving a specificity of 95.8% and positive predictive value (PPV) of 96% and 94.7%.

Table 7: Findings at histopathology.

Findings	No. of patients	Percentage
Normal	30	60
Endometrial hyperplasia	11	22
Submucous myoma	0	0
E. atrophy	5	10
E. polyp	2	4
Endometritis	0	0
Irregular shedding	2	4

Table 8: Validity of hysteroscopy.

Hysteroscopy	Disease present	Disease absent
Normal	24 (a)	1 (b)
Endometrial hyperplasia	2 (c)	23 (d)

(a) true positive, (b) false positive, (c) false negative, (d) true negative

Table 9: Validity of dilation and curretage.

Dilation and curretage	Disease present	Disease absent
Normal	18 (a)	1 (b)
Endometrial hyperplasia	8 (c)	23 (d)

(a) true positive, (b) false positive, (c) false negative, (d) true negative

The ability to diagnose a lesion (sensitivity) was more with hysteroscopy in comparison to curettage (92.3% v/s 69.2%), while a negative diagnosis was less wrongly made with hysteroscopy (false negative ratio: 7.69% v/s 30.76%).

Table 10: Comparison of validities.

	Hysteroscopy	Histopathology
Sensitivity	92.3%	69.2%
Specificity	95.8%	95.8%
PPV	96.8%	94.7%
NPV	92%	74.19%
Accuracy	94%	82%

Of the 50 patients tested 24 patients had normal findings, 26 patients had abnormal findings, out of which 5 (10%) cases had endometrial polyp, 5 (10%) had sub mucous myoma, 10 (20%) cases had endometrial hyperplasia, (8%) had endometrial atrophy, and 2 (4%) had irregular shedding pattern of endometrium.

DISCUSSION

The present study was done with 50 patients of AUB from Jan 2011- Oct 2011at Tirunelveli Medical College.

The age group in this study was between 20 -6- years and maximum incidence was between 40-49 yrs. Panda2 found that maximum age incidence was between 35-45yrs in range between 25-70yrs. In Gianninoto's series, age range was 38-40yrs and commonest incidence was between 30-45yrs.[3] Trotsenburg reported maximum age incidence between 41-50yrs.[4]

Table 11: Final diagnosis after hysteroscopy and histopathology.

Diagnosis	Menorrhagia	Polymenorrhoea	Metorrhagia	PMB	Total	
					No.	%
Polyp	4	0	0	1	5	10%
Submucousmyoma	2	3	0	0	5	10%
Hyperplasia	4	0	3	3	10	20%
Endometritis	0	0	0	0	0	0%
E. Atrophy	0	0	0	4	4	8%
Irregular shedding	2	0	0	0	2	4%
Normal	10	6	3	5	24	485
Total	22	9	6	13	50	100

The commonest presenting complaint in this series was menorrhagia (44%) followed by Postmenopausal Bleeding (26%) and Polymenorrhoea (18%).

Table 12: Normal and abnormal findings at hysteroscopy in various series.

Author (Year)	No. of cases	Normal (%)	Abnormal (%)
Wamsteker	199	41.5	58.5
Gimpelson et al	276	60	40
Loffer	91	48.66	51.44
Sheth	51	44	56
Parasnis	96	73.95	26.05
Neumann	85	55.2	44.8
Panda	66	46.6	53.4
Trotsenburg	819	66	34
Garuti	1500	61.8	38.2
Gianninoto	512	25	75
De Wit AC	1045	54.2	45.8
Present series	50	48	52

Table 13: Comparison of accuracy of hysteroscopy findings.

Author	Accuracy	Misinterpretation
Baggish[5]	87.5	12.5
Barbot[6]	84	16
Sheth[7]	82	18
Parasnis[8]	92	8
Panda[2]	92.69	7.31
Present Series	94	6

Panda's series had 60% cases of menorrhagia followed by Polymenorrhagia and Metrorrhagia.[2] In this study, abnormal findings on hysteroscopy were found in 26 patients (52%) while in the remaining 24 patients (48%), no abnormality was detected. The following Table 12 compares normal and abnormal findings in hysteroscopy in various series.

Hysteroscopy accurately detected endometrial polyp, submucous fibroid and all cases of endometrial hyperplasia. A study conducted by European society of human reproduction and embryology concludes that hysteroscopy with endometrial biopsy is the "Gold standard" investigation for AUB.[9]

A Cochrane database systems review, compares Hysteroscopy and Dilatation and Curettage (D&C) showed D&C is obsolete because it is a blind method with a complication rate of 4 to 6% and low sensitivity for local and pendunculated intracavitary lesions. It required hospital stay and general anaesthesia. With hysteroscopic visualization, organic lesions are not missed and directed biopsy can be performed (Pellicano 2003). A study conducted at University of Winconsin, Madison showed hysteroscope with biopsy allows visualization of endometrial cavity and is regarded as gold standard for endometrial assessment.[10]

A comparison of sensitivity and specificity of D&C and hysteroscopy obtained in the present study with those obtained by other authors shows no significant difference between the obtained values (Table 14).[11,12]

In the present series, of the 50 patients tested, 26 actually had pathology, out of which, 18 was accurately diagnosed by histopathology. Among the 8 cases missed 5 had submucous myoma and 3 had endometrial polyp.

In the present study, the results of hysteroscopy and dilatation and curettage were in agreement in 76% patients; hysteroscopy revealed more information than curettage in 18% patients and curettage revealed more information than hysteroscopy in 4% patients. This is

comparable to other similar studies which show that Panoramic Hysteroscopy is better than curettage in the evaluation of abnormal uterine bleeding.

Table 14: Comparison of validity factors of hysteroscopy.

Author	Sensitivity	Specificity
Loverro	98	95
Garuti	94.2	88.8
Loffer	98	100
Parasnis	92	100
Panda	92.5	78.78
Present Series	92.3	95.8

Table 15: Comparison of validity factors of dilation and curettage.

Author	Sensitivity	Specificity
Loverro	79.2	95
Garuti	78	94
Loffer	65	100
Parasnis	76	100
Present Series	69.2	95.8

CONCLUSION

This study reveals the superior ability of hysteroscopy in evaluating patients with AUB, when compared to D&C and USG. Hysteroscopy is the safe, reliable and quick procedure in diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity and negative predictive value (ACOG 2011, A-1 level evidence). It is pivotal in the present day gynecological practice to arrive at an accurate diagnosis and specially not to miss any precancerous finding. The chances that succession would be missed is rare, if we stick to the criteria for negative hysteroscopic view and usually no further investigations may be necessary. At the same time, enough stress shall be laid on the importance of endometrial histopathology for diagnosis of any such lesion especially in peri- or post-menopausal patients inspite of negative hysteroscopic view.

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

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