

TO STUDY THE USEFULNESS OF HYSTEROSCOPY IN EVALUATING AUB IN REPRODUCTIVE AGE GROUP

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Abstract

Background: Abnormal uterine bleeding is a common problem attributes as a cause for 25% of total gynaecological surgeries performed by a gynaecologist. The aim is to study the usefulness of Hysteroscopy in evaluating AUB in reproductive age group in comparison to Dilatation and Curettage. **Materials and Methods:** 100 patients who presented with Abnormal Uterine Bleeding underwent hysteroscopy and subsequent Dilatation and Curettage. Cured endometrium was sent for histopathological examination. **Result:** Age group of the patients ranged from 15-44 and most common age group was 30-34 years. Hysteroscopy reported 50 % as normal view and 50 % as view. Endometrial hyperplasia 22% was the most common abnormality followed by endometrial polyp 10%. The sensitivity, specificity, NPV and PPV for Hysteroscopy was 70%, 70%, 70% and 70% respectively and for D & C was 36%, 70%, 52.2% and 54.5% respectively. The most consistent finding has been the detection of endometrial polyp and sub-mucous myomas, IUCD, Synechiae with 100% accuracy using hysteroscopy. By hysteroscopy there were 15 false negative results, 15 cases of hyperplasia. Histopathology of endometrium missed 8 cases of endometrial polyps and 8 cases of submucous myoma and 9 cases of adhesions, 1 case of IUCD, 15 cases of hyperplasia. D & C correctly diagnosed all cases of endometrial hyperplasia (21 cases). Polypectomy was done in 10 cases, 8 cases of sub-mucous myoma was removed surgically, IUCD removed by hysteroscopy and in 9 cases adhesiolysis done. **Conclusion:** 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.

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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 patients 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 examination 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.^[1,2]

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. 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 able to pin point the abnormal focal area for biopsy.^[3]

Abnormal uterine bleeding is one of the most common complaints with which a patient 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 created polyps and sub-mucous fibroids are frequently undetected by curettage alone.

The judicious use of hysteroscopy to manage this medical entity adds a new dimension in handling this often-perplexing problem.^[2] This study has been taken up to analyse the usefulness 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.

MATERIALS AND METHODS

This study was conducted in Modern Government Maternity Hospital, Petlaburz, under Osmania Medical College, Hyderabad which is a tertiary referral centre from February 2021-January 2022 (12 Months). Women of reproductive age group (15 to 44 years) attending Gynaecology OP at MGMH.

All the patients in this study underwent Hysteroscopy followed by Dilatation and Curettage and the curetting's were sent for Histopathology analysis.

The results of Hysteroscopy and Endometrial Histopathology were studied and analysed. The analysed data was compared with other series in literature and discussed. A master chart dealing with all aspects has been designed and. All were well informed about the study in all aspects and informed consent was obtained. Ethical clearance obtained.

Inclusion Criteria

Patients with age between 15- 44 years with abnormal uterine bleeding, Both parous and nulliparous women and in patients who do not require any emergency management.

Exclusion Criteria

Pregnancy / Abortions / Ectopic pregnancy, Uterine and cervical infections and PID, STD's and vaginitis, lower genital tract malignancies, medical contraindications to any invasive procedures, thyroid disease bleeding disorder and adnexal mass. Cases were selected by diagnosis on history, general physical examination, abdomen and pelvic examination and basic investigations. proforma specially made for the study was used.

Patients were advised to have a light dinner before 10PM on the night prior to hysteroscopy. The patients were prepared as for any other surgical procedure.

Laboratory investigation as Complete blood picture, complete urine examination, urine culture and sensitivity, Blood grouping and R-h typing, BT, CT, HIV, HbsAg, Blood urea, Serum creatinine, random blood sugar, chest x-ray, ECG, were done Anaesthesia: In this study, hysteroscopy was performed under IV sedation.

Hysteroscopy done by Model storz instrument is a modified cytoscope consisting of a stainless-steel

sheath equipped with stop cock, controlled channers for medium and the passage of ancillary instruments. An abturator to facilitate introduction of the sheath is a feature of the hysteroscope. Telescope used was of 4mm in diameter and has fore oblique lenssystem, Illumination provided by a standard 150w bulb and is transmitted by a fibre optic cable.

Procedure

The patient is put in lithotomy position, the pubis and perineum are washed with Savlon. The perineum is draped. Cervix and vagina washed with betadine.

Under anaesthesia, after catheterizing the bladder, a bi-manual pelvic was done. After introducing Sim's speculum, the anterior lip of the cervix was held with vulsellum. After measuring the length of the uterine cavity, the internal os was dilated with Hegar's dilator (whenever necessary). up to 8 Hegar's dilator was needed in some patients. The Hysteroscope was introduced into the cervical canal under. The uterine cavity was distended with 0.9% normal saline and examined. The pressure is applied up to 150mm of Hg telescope connected to the light source.

The points were noted as the nature of surface and colour of endometrium, glandular openings, vascular pattern, tubal ostia and any other abnormalities.

Patients with normal uterine cavities without any questionable areas were labelled as

"NORMAL HYSTEROSCOPIC VIEW" when the following 3 criteria were met:

1. Good visualization of entire uterine cavity
2. No structural abnormalities in the cavity
3. A uniformly thin, homogenous appearing endometrium without variation in thickness.

Under the same anesthesia, endometrial curettage was done with a sharp curette and the curetting's were sent for histopathological examination.

Post-operative

Patient was put on a broad-spectrum antibiotic and were observed for any complications. Most of the patients were discharged on the next day.

RESULTS

In the present study, hysteroscopy was performed using hysteroscope in 100 patients who presented with Abnormal Uterine Bleeding followed by Dilation and curettage. The curetted endometrium was sent for histopathological analysis.

Table 1: Distribution of Patients according to demographic variables (n value =100)

Age Distribution	No. Of Patients	%
15-19	2	2
20-24	8	8
25-29	20	20
30-34	28	28

35-39	22	22
40-44	20	20
Total	100	100
Parity		
Para 0	4	4
Primi Para	18	18
Para 2	30	30
Para 3	32	32
Para 4	12	12
Para 5	4	4
Presentation		
Menorrhagia	28	28
Metrorrhagia	15	15
Menometrorrhagia	14	14
Polymenorrhoea	10	10
Oligomenorrhoea	13	13
Polymenorrhoea	10	10
Hypomenorrhoea	10	10

Mean age is 29.5 years and maximum age incidence was between 30-34 years, 28 patients. Parity -2.5. 4% of patients were nulliparous, 18% were primiparous, 32% were para 3. Majority of the patients 28% presented with menorrhagia, the second commonest group had metrorrhagia 15% and followed by menometrorrhagia 14%.

Table 2: Findings at Endometrial Histopathology (D & C)

Findings	No. Of Patients	Percentage
Normal	67	67
Endometrial Hyperplasia	30	30
Endometrial Polyps	3	3
Submucous myoma	0	0
IUCD	0	0
Synaechiae	0	0
Total	100	100%

The diagnosis of 8 cases of Endometrial polyps and g cases of submucous myoma, 9 cases of adhesions, I case of IUCD was missed by Endometrial histopathology by D & C.

Table 3: Comparison between Hysteroscopic and D & C Findings (n value: 100)

S.No.	Hysteroscopic Findings	D&C Findings							Total	Alterations Between Hysteroscopic and D & C findings	%
		Normal	Polyp	Fibroid	Hyperplasai	Adhesions	IUCD				
1.	Normal	35	0	0	15	0	0	50	15	15	
2.	Polyp	3	2	0	5	0	0	10	8	8	
3.	Fibroid	4	0	0	4	0	0	8	8	8	
4.	Hyperplasia	15	1	0	6	0	0	33	16	16	
5.	Adhesions	9	0	0	0	0	0	9	9	9	
6.	IUCD	1	0	0	0	0	0	1	1	1	
	Total	67	3	0	30	0	0	100	37	57%	

Table 4: Validity of Hysteroscopy

Hysteroscopy	Disease actually		
	Present	Absent	
Positive (50 abnormal)	35(a)	15(b)	a + b = 50
Negative (50 Normal)	15(c)	35(d)	c + d = 50
	a + c = 50	b + d = 50	

- Sensitivity: $a/a + c \times 100 = 35/50 \times 100 = 70\%$
- Specificity: $d/b + d \times 100 = 35/50 \times 100 = 70\%$
- Positive Predictive value: $a/a + b \times 100 = 35/50 \times 100 = 70\%$
- Negative Predictive value: $d/c + d \times 100 = 35/50 \times 100 = 70\%$
- False Positive Rate: $b/b + d \times 100 = 15/50 \times 100 = 30\%$
- False Negative Rate: $c/c + d \times 100 = 15/50 \times 100 = 30\%$
- Concordance (Accuracy): $a + d/a + b + c + d \times 100 = 70/100 \times 100 = 70\%$.

Table 5: Validity of dilatation and Curettage

Hysteroscopy	Disease actually		
	Present	Absent	
Positive (50 abnormal)	18(a)	15(b)	a + b = 33
Negative (50 Normal)	30(c)	35(d)	c + d = 67
	a + c = 50	b + d = 50	

- Sensitivity: $a/a + c \times 100 = 18/50 \times 100 = 36\%$
- Specificity: $d/b + d \times 100 = 35/50 \times 100 = 70\%$
- Positive Predictive value: $a / a + b \times 100 = 18 / 33 \times 100 = 54.5\%$
- Negative Predictive value: $d / c + d \times 100 = 35/67 \times 100 = 52.2\%$
- False Positive Rate: $b / b + d \times 100 = 15 / 50 \times 100 = 30\%$
- False Negative Rate: $b/ b+ d \times 100 = 32 / 50 \times 100 = 64\%$
- Concordance (Accuracy): $a + d / a + b + c + d \times 100 = 53 / 100 \times 100 = 53\%$.

Table 6: Comparison of Validities

	Hysteroscopy in %	Dilatation and curettage in %
Sensitivity	70	36
Specificity	70	70
PPV	70	54.5
NPV	70	52.2
Accuracy	70	53

Both hysteroscopy and curettage were accurate giving a specificity of 70% for both. The ability to diagnose a lesion (Sensitivity) was more with Hysteroscopy in comparison to Curettage (70 % v/s 36 %), while a negative diagnosis was less wrongly made with Hysteroscopy. (False negative ratio: 30 % v/s 64 %).

Table 7: The following table compares normal and abnormal findings in hysteroscopy in various series

Author	No. Of Cases	Normal %	Abnormal %
Wamesteker, ^[3]	199	41.5	58.5
Gimpelson & Rappold, ^[4]	276	60	40
Loffer, ^[5]	91	48.66	51.44
Sheth, ^[6]	51	44	56
Parasnins, ^[7]	96	73.95	26.05
Panda, ^[8]	66	46.6	53.4
Trosten burg, ^[9]	819	66	34
Garuti, ^[10]	1500	61.8	38.2
Gianninoto, ^[11]	512	25	75
De wit AC, ^[12]	1045	54.2	45.8
Present Series	100	50	50

Table 8: Comparison of Accuracy of Hysteroscopy findings

Accuracy of Hysteroscopy	Accuracy	Misinterpretation
Sheth 6	82	18
Parasnins 7	92	8
Panda 8	92.69	7.31
Present Series	70	30
Validity factors Hysteroscopy		
Garuti 10	94.2	88.8
Loffer 5	98	100
Parasnins 7	92	100
Panda 8	92.5	78.78
Present Series	70	70
Validity factors dilatation and curettage		
Garuti 10	78	94
Loffer 5	65	100
Parasnins 7	76	100
Present series	36	70

Test used F test $P = 1 > 0.05$ NS

Table-9: Panoramic Hysteroscopy V/S Curettage

Results	Gimpelson & Rappold, ^[4]	Gimpelson, ^[13]	Present Series
Panoramic Hysteroscopy equal to Curettage	79	73	43
Hysteroscopy greater than Curettage	18	24	42
Hysteroscopy less than curettage	3	3	15

DISCUSSION

In the present study is diagnostic hysteroscopy was performed in 100 consecutive cases of AUB and its correlation with histopathological findings were sought. The age group in this study was between 15-44 years and maximum incidence was between 30-34yrs. Panda found that maximum age incidence was between 35-45yrs in range between 25-70 yrs.

In Gianninoto's series, age range was 38-80 yrs and commonest incidence was between 30-45yrs. Trotsenburg reported maximum age incidence between 41-50yrs. The commonest presenting complaint in this series was menorrhagia (28%) followed by metrorrhagia (15%) and menometrorrhagia (14 %). Panda's series had 60% cases of menorrhagia followed by polymenorrhagia and Metrorrhagia. In this study, abnormal findings

on hysteroscopy were found in 50 patients (46%) while in remaining 50 patients (54%), no abnormality was detected.

Of the 50 cases with abnormal findings on hysteroscopy, commonest seen was Endometrial hyperplasia 22 cases (22%), followed by endometrial polyps 10 cases (10%) and sub-mucous myoma 8 cases (8%), Synechiae 9 cases (9%), IUCD 1%, panda found endometrial hyperplasia n 28.3%. Wamsteker³ found endometrial polyp in 19%, endometrial hyperplasia in 12.2% and submucous myoma in 7.8%. Trotsenburg⁹ observed myomas and polyps in 14 % and Dewit¹² reported myomas in 21% and polyps in 14.4%.

Hysteroscopy diagnosed all cases of endometrial hyperplasia, polyps and myomas with a specificity of 100%. Sheth⁶ reported 81.8% accuracy in diagnosis of polyps and myomas, while Garuti¹⁰ reported 95.4% specificity in diagnosis of polyps.

In the present study, hysteroscopy made a false positive diagnosis of hyperplasia in 15 cases, which were normal in histology. The accuracy of hysteroscopy in this study was 70% and that of endometrial histopathology was 53%.

A comparison of the accuracy with other similar studies is given below:

A statistical analysis of the accuracy obtained by various authors and of the present study shows that there is no significant difference between the values. Statistical analysis of the sensitivity and specificity of Hysteroscopy. There is no difference between sensitivity and specificity obtained in this study and that obtained by various authors. This confirms the validity of hysteroscopy done in the present study.

A comparison of sensitivity and specificity of D and C obtained in the present study with those obtained by other authors shows no significant difference between the obtained values.

In the present study, the results of hysteroscopy and dilatation and curettage agreed in 43% patients, hysteroscopy revealed more information than curettage in 42% patients and curettage revealed more information than hysteroscopy in 15% patients. This is comparable to other similar studies, which shows that Hysteroscopy is better than Curettage in the evaluation of abnormal uterine bleeding.

CONCLUSION

This study confirms that hysteroscopy is superior to curettage in evaluating patients with abnormal

uterine bleeding. 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.

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