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Diagnostic Accuracy of Transvaginal Sonography and Hystoroscopic Sampiling of Endometrium in Abnormal Uterine Bleeding In Perimenopausal Age Group Women

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***Background And Objectives*:** *Abnormal uterine bleeding (AUB) in peri-menopausal age group is a commaon but ill-defined entity which needs proper evaluation. goldstein et al.1997 has defined AUB as "Patients having either metrorrhagia defined as vaginal bleeding separated from expected menses or menorrhagia defined as patients subjective complaints of either increased duration or increased volume of flow or both". Ultrasonography and D&C were the most common investigation employed in the evaluation of causes of abnormal uterine bleeding. 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 etiology in the majority of the cases. Endometrial biopsy alone may miss some of the lesions in abnormal uterine bleeding in perimenopausal age group women. By combining Transvaginal sonography and Hysteroscopic sampling of Endometirium, the diagnostic accuracy is enhanced.*

Methods: *The women recruited underwent tarnsvaginal sonogaraphy fallowed by hysterosciopic sampling of the endometrium and the samplings were sent for hystopathological analysis. Women with severe anaemia, with large or multiple fibroids were excluded from study.*

Results: *Total women in the study were 50.36 were of 40-45yrs age group and 14 were of 46-50yrs age group. In TVS 29 patient's normal thickened endometrium – 18 & polyp – 03. In hysteroscopy normal are 23. Endometitis – 02. EH – 12.Polyp – 08. Atropic endometrium – 02. Uterine synechae – 01.*

Interpretation and conclusion: *TVS reported 29 patients (58%) as normal study and 21 patients (42%) as abnormal,hysteroscopy reported 23 patients (46%) as negative view and **27** patients as (54%) abnormal view. The most commonest findings has been the detection of endometrial hyperplasia,endometrial polyp and submucous myomas with 100% accuracy using hysteroscopy. From the present study it is clear that, endometrial biopsy alone may miss some of the lesions in abnormal uterine bleeding in perimenopausal age group women. TVS may be considered as a screening test only. In detecting anatomical abnormalities like polyp or fibroid none of the imaging studies appeared to be superior to hysteroscopy. The concern of today's Gynaecologist while evaluating abnormal uterine bleeding is not to miss a significant lesion. The chances that such a lesion would be missed are rare, by combining transvaignal sonography and hysteroscopic sampiling of endometrium.*

Keywords: *Abnormal uterine bleeding,Transvaginal sonography,Hysteroscopy,Endometirial sampiling and histopathalogical examination.*

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I Intorduction

Abnormal uterine bleeding (AUB) in peri-menopausal age group is a common but ill-defined entity which needs proper evaluation. Goldestein et al.1997 has defined AUB as "patients having either metrorrhagia defined as vaginal bleeding separated from expected menses or menorrhagia defined as patients subjective complaints of either increased duration or increased volume of flow or both". Variations from the normal cyclical pattern in the pre-menopausal age may be due to physiological hormonal changes on one hand or may be due to neoplastic changes either bengin or malignant, on the other hand. Therefore, accurate diagnosis of the causative factor of AUB in this age group is utmost importance so that appropriate management can be established.

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 cause. Information gathered from this will suggest which 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.

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 etiology in the majority if the cases. It aids in the early diagnosis of endometrial carcinoma and uterine polyps. D&C has long been the diagnostic gold started for abnormal uterine bleeding. However only 70% - 80% of the endometrium can be curreted.This study has been taken up for comparing diagnostic accuracy of trans vaginal sonography and hysteroscopic sampiling of endometrium in evaluation of abnormal uterine bleeding in perimenopausal age group (40-50 years) of women. It also aims to combine TVS and hysteroscopic sampling of the endpmetrium to enhance the diagnostic accuracy.

II Materials And Methods

This study is carried out in the Department of Obstetrics & Gynaecology, Guntur Medical College, Guntur. The study was conducted from Feb, 2016 – July, 2016. Data was collected from patients belonging to the age group 40-50 years with abnormal uterine bleeding.

Study Design:-

- It is a prospective clinical study of 50 cases AUB
- All the patients in this study underwent transvaginal sonogaphy, followed by hysteroscopic sampiling of the Endometrium, and the sampling were sent for histopathological analysis.

Inclusion criteria:

1. Patients with age between 40 – 50 yrs with abnormal uterine bleeding.
2. Both parous and nulliparous women.
3. Patients who do not require any emergency management.

Exclusion criteria:

1. Patients with severe anemia due to menorrhagia were excuded since they required immediate intensive care.
2. Patients with profuse bleeding.
3. Cases with large or multiple fibroids.

Transvaginal sonography (Thoshiba – B – Mode- 2d machine 6.5 MHz)

- Endometirial cavity was examined from internal Os to fundus in both saggital and coronal planes and findings noted.

Hysteroscopy: (rigid 30-degree hysteroscopy and diagnostic sheath of 5mm diameter, storz endoscopy) illumination provided by a standard 150W bulb and is transmitted by a fibre optic cable.

Light source: halogen vapor lamp.

Distension medium: Normal saline.

Procedure

Anaesthesia: in this study, hysteroscopy was performed under IV anaesthesia.

Under anaesthesia. After catheterzing the bladder, a bimanual pelvic examination was done. After introducing Sim's speculum,the anterior lip of the cervix was cought with vulsellum. After measuring the length of the uterine cavity,the internal os dialted with Hegar's diltor (Whenever necessary).the hysteroscope was introduced into the cervical canal under vision. The uterine cavity was distended with normal saline and exmined.

The following points were noted:

1. The nature of surface and colour of endometrim.
2. The glandular openings.
3. The vascular openings.
4. The tubal ostia.
5. Any other abnormalities.

Patients with normal uterine cavities without any questionable areas were labelled as "NEGATIVE 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 was done and the samplings were sent for histopathological examination.

POST-OPERATIVE:

Patients were observed for any complications and were put on a board spectrum antibiotic. Most of the patients were discharged on the next day.

III Observation

In the present study, Transvaginal sonography was done and endometrial cavity was examined from internal os to fundus in both saggital and coronal planes. On the following day, hysteroscopy guided targeted biopsy was prefarmed using 4mm hysteroscope with 30 degrees fore oblique lens in 50 patients who presented with abnormal uterine bleeding. The tissue samples were sent for histopathalogical analysis.

Table no.1

Age group	No. Of patients	Percentage
40-45	36	72
46-50	14	28
Total	50	100

Table no.2 Clinical Presentation

Symptom	No. Of patients	Percentage
Menorrhagia	15	30
Metrorrhagia	14	28
Polymenorrhea	12	24
Oligomenorrhea	9	18
Total	50	100

Majority of the patients, 15(30%) presented with menorrhagia. The second commonest group had metrorrhagia. 14 cases (28%, followed by polymenorrhea 12 cases (24%) and 9 cases (18%).

Table no.3 Sonographic (TVS) results

Findings	No. Of patients	Percentage
Normal study	29	58
Thickend Endometrium	18	36
Polyps	3	6
Fibroid	0	0
Total	50	100

Normal findings were seen in 29 patients (58%). The most common abnormality in thickened endometrium (18 cases 36%) followed by polyps (3 cases 6%) and no cases of fibroids.

Table No.4 Findings At Hysteroscopy

Findings	No of patients	Percentage
Normal	23	46
Endometrial Hyperplasia	12	24
Endometrial polyp	8	16
Submucous Myoma	2	4
Atrophic Endometrium	2	4
Endometirites	2	4
Uterine synechae	1	2
Total	50	100

Abnormal findings were seen in 27 patients (54%) while in the remaining 23 patients (46%), no abnormality was detected (negative hysteroscopic view) the most common abnormality was endometrial hyperplasia (12 cases 24%) followed by endometrial polyp (8 cases 16%). There were also 2 cases endometritis. 1 case (2%) of uterine synechae.

In the 23 cases (46%) of negative hysteroscpic view, 3abnormal findings were detected on histpathology, 1 case of atrophic endometirium and 2 cases of endometritis. 1case of endometrities reported on hysteroscopy was later diagnosed as normal.One of the most consistent findings in this study has been the detection of intrauterine pathology like endometrial hyperplasia (12 cases 24%), endometrial poly (8 cases, 16%) and submucous myuomas (2 cases 4%) with 100% accuracy with hysteroscopy.

Table no. 5 Endometrial Histopatholgy

Findings	No. Of patients	Percentage
Normal • Proliferative • Secretary	21 12 9	42
Endometrial hyperplasia	12	24
Simple	8	
Cystoglandular	3	
Adenomatous	1	
Endometrial polyps	8	16
Submucous myoma	2	4
Atrophic endometrium	3	6
Endomtrities	4	8
Total	50	100

Abnormal findings were seen in 29 cases 58% while in the remaining 21 patients (42%),there was no abnormality detected and the endometrium wa sin either proliferative or secretary phase.The most common abnormality was endometrial hyperplasia (12 cases 24%) which was either simple hyperplasia (8 cases 16%) or cystoglandular hyperplasia (3 cases 6%) or adenomatous hyperplasia (1 case 2%). There were also 8 cases of (6%) atrophic endometrium 2 cases of (4%) submucous myoma and 4 cases (8%) of endometrities. Histopatholgy correctly diagnosed all cases of endometrial hyperplasia. Atrophic endometrium, endometrial polyps, endometritis and submucous myomas with 100% accuracy.

Table no.6 Findings of diagnosis procedures n=50

Findings	TVS	Hysteroscopy	Histopathology
Normal	29	23	21
Endometitis		2	4
Thickend endometrium	18		
Endometrial Hyperplasia		12	12
Simple			8
Cystoglandular			3
Adinomatous			1
Polyp	3	8	8
Fibroid		2	2
Atrophic endometrium		2	3
Uterine synechae		1	
Total	50	50	50

Table no.7 Distribution of test results

Test	Normal		Abnormal	
		Poly p	Fibroid	AUP
TVS	29 (58%)	3(6%)	-	18 (36%)
Hysteroscopy	23 (46%)	8 (16%)	2 (4%)	17 (34%)
Histopathology	21 (42%)	8(16%)	2 (4%)	19 (38%)

Table no.8 Final diagnosis after trancvaginal sonography,hysteroscopy and histopatholgy.

Findings	Menorrhagia	Metrorrhagia	Polymenorrhea	Oligomenorrhea	Total	
					No	%
Polyp	2	6			8	16%
Fibroid	1	1			2	4%
Hyperplasia	3	7	2		12	24%
Endometritis	2			2	4	8%
E.Atrophy	1			2	3	6%
Normal	6		10	5	21	42%
Total	15	14	12	9	50	100%

Of the 50 patients who under went TVS and hysteroscopy, in 21 patients abnormality was detected in both hysteroscopy revealed nore information in 6 patients and HPE reveale more information in another cases.

IV Discussion

In the present study, "Diagnostic accuracy of Transvaginal sonography, hysteroscopic sampling of endometrium in abnormal uterine bleeding in perimenopausal age group women", evaluation of 50 consecutive

cases of AUB is done by TVS and hyteroscopic sampling of endometrium and correlation with histopathalogical findings were sought.Peri menopause includes the period beginning with the first clinical, biological and endocrinological features of the approaching menopause and ending twelve months after the last menstrual period. Accurate diagnosis of the cause of AUB perimenopausal age group is critical.Meta analysis has demonstated that sonographic measurement of endometrial thickness is an acceptable test for prediction of endometrial pathology, but it has its limitation in correctly diagnosing the type of endometrial pathology. Minimum endometrial thickness considered to be abnormal was accepted as 5 mm in the present study as it is well proved that the risk of endometrial malignancy in patients with post menopausal bleeding and with an endometrial thickness <=4 mm is less than 1%.performining a hysterectomy and histopathological examination of the resected uterus would be an ideal reference standard but as this is not always possible in perimenopausal patients on ethical ground and at the same time is unacceptable to the patients.

Vercellini et al8 evaluated the role of transvagnal ultrasonography and diagnostic hyteriscopy in premenopausal menorrhagic patients irrespective of their age. In the 40 to 50 years age group of their study population, hysteroscopy was able to diagnose polyp and fibroid in 23.5% and 14 % of the women respectively and was negative in 53.8% of the cases. In the present study the corresponding figures were 16%, 4% and 46% respectively. However, it should be remembered that their patient population was 'premenopausal menorrrhagic' while our patients were perimenopasal with AUB' similarly, in their study.39% of the overall patients were normal in TVS and sensitivity & specificity of TVS was 96% and 86% respectively. In the present study the corresponding figures were 65.52% and 90.48% respectively. The incidence of polyp in Allameh et al9 series was 38% and that of laifer-narin et al10 was 42%. Both were surprisingly high in comparison to our findings and are probably due to difference in patient selection. There is no significant difference between sensitivity and specificity obtained in this study and that obtained by various other authors. This confirms the validity of hysteroscopy done in the present study.

Another problem of the radiologists arises when they have to diagnose the exact from of hyperplasia as it can be established by pathological examination only. Hysteroscopy offers the possibility of visua;izing macroscopic or focal abnormalities suggestive of endometrial hyperplasia and of taking biopsy under visual control known as 'targeted hysteroscopic biopsy'. But the lack if established hysteroscopic criteria for 'abnormal endometrial hyperplasia'and its overlapping pattern with the normal late secretory endometrium, mainly in pre menopausal women, is a limitation theat still arouses some doubt to the reliability of this procedure 12. Another problem of hysteroscopy is that it needs specialized equipment, skilled operator and general anaesthesia or when performed as an office procedure with local or no anesthesia , it can cause significant patient discomfort. Chambers 13 commented, "The expense and time involved in the use of hysteroscope are not justified for routine evolution of all the women with abnormal uterine bleeding. The concluding remark of vercellini et al8 is remarkable in this aspect considering the good specificity and negative predictive value. TVS may be suggested as the initial investigation in premenopausal patients with menorrhagia. When appropriate, endometrial biopsy may be performed. Hysteroscopy may be limited to cases with a positive or doubtful TVS finding with the aim of defining the lesion, obtaining targeted biopsy and evaluating endoscopic operability correctly.

V Conclusion

From the present study it is clear that, endometrial biopsy alone may miss some of the lesions in abnormal uterine bleeding in perimenopausal age group women.TVS may be considered as a screening test only, in which aspect also D & C is an unaccepted one. In detecting anatomical abnormalities like polyp or fibroid none of the imaging studies appeared to be superior to hysteroscopy.The concern of today's gynaecologist while evaluating abnormal uterine bleeding is not to miss a significant lesion. The chances that such a lesion would be missed are rare, by combining transvaginal sonography and hysteroscopic sampling of endometrium.

Refereces

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