

THE IDEAL INVESTIGATIVE METHOD FOR EVALUATION OF ABNORMAL UTERINE BLEEDING IN PERI AND POST MENOPAUSAL WOMEN

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ABSTRACT: AIM: The study was designed to compare the accuracy of trans vaginal sonography, hysteroscopy, and histo pathological examination of endometrium after Dilatation & Curettage in cases of abnormal uterine bleeding, to detect different aetiology of abnormal uterine bleeding in these women and to formulate the ideal investigation of abnormal uterine bleeding in these women. **METHODS:** A total of 70 peri menopausal and postmenopausal women with abnormal uterine bleeding were taken into the study. After thorough history and clinical examination, the patient was sent for trans vaginal ultra sonographic assessment, followed by a hysteroscopy & dilatation and curettage done as an indoor procedure with a 30 degree rigid hysteroscope (Carl storz) with a 5 mm sheath. The endometrium was sent for histopathology. Diagnosis according to all the three modalities were compared and evaluated. **RESULTS:** While comparing between TVS and hysteroscopy in total study group taking hysteroscopy as standard, TVS showed a good sensitivity of 85.7% while specificity of 56.5 %. Whereas, during comparison between D & C and hysteroscopy in total study population taking hysteroscopy as standard, sensitivity of D & C came out to be 61.9% while specificity was 88.9%. This shows that D & C is missing a high percentage of cases. There was a fair strength of agreement between hysteroscopy and TVS. There was a moderate strength of agreement between hysteroscopy and Dilatation & curettage. **CONCLUSION:** TVS is more sensitive in diagnosing cases of fibroids mainly intramural and subserous ones which are missed by hysteroscopy. According to our study it can be concluded that TVS can be taken up as a first line of investigation since it is highly sensitive followed by hysteroscopic guided biopsy.

KEYWORDS: Transvaginal sonography, Hysteroscopy, abnormal uterine bleeding.

INTRODUCTION: Abnormal uterine bleeding (AUB) is a common presenting symptom among women. AUB is presented in 33% of women referred to gynecologists and this pattern increases to 69% in peri menopausal and post-menopausal women.¹ in peri menopausal women anovulation, benign uterine neoplasia, and endometrial hyperplasia cause abnormal uterine bleeding in majority. In postmenopausal women, vaginal/ endometrial atrophy and hormone therapy are the most common causes.¹ only about 10 % of postmenopausal bleeding results from endometrial cancer. With the increase in life expectancy a third of a woman's life will be in her post-menopausal period, so it is imperative to understand and manage the postmenopausal period so as to allow women to enjoy optimum health.

Hospital based curettage without hysteroscopy is still commonly performed, even though it is no longer the gold standard. However the main diagnostic methods which are also being used in these patients are transvaginal ultrasonography and outpatient hysteroscopy.² According to some authors, diagnostic hysteroscopy represents an indispensable pre surgical investigation.²

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Anything that can significantly improve the accuracy of diagnosing the cause of bleeding can reduce the frequency of hysterectomy as a cure. Dilatation and curettage (D and C) used to be the mainstay of investigation for abnormal uterine bleeding but it is not accurate for diagnosing focal intrauterine lesions which are small or located in areas difficult to curette.³

The present study is designed to compare the accuracy of TVS, hysteroscopy, and histopathological examination of endometrium after D & C in cases of abnormal uterine bleeding, to detect different aetiology of abnormal uterine bleeding in these women and to formulate the ideal investigation of abnormal uterine bleeding in these women.

METHODS: The study was conducted in the IPGME & R, Kolkata, a tertiary level Institution, between February 2011 and January 2012, after obtaining ethical clearance from the Ethics committee of the Institute. It was a prospective observational study. A total of 70 peri menopausal and postmenopausal women with abnormal uterine bleeding were taken into the study. According to the selection criteria. Patients presenting with the complaint of abnormal uterine bleeding in peri and postmenopausal age group were explained regarding details of the current study. AUB was defined as cyclic excessive bleeding, irregular menstrual cycles, excessive irregular bleeding or postmenopausal bleeding. Once an informed consent was signed, the woman was included in the study.

Patients with abnormal uterine bleeding who are haemodynamically unstable, or have abnormal uterine bleeding due to other systemic disorders like coagulation defects, thyroid hormonal defects, were excluded from the study. Patients on any hormonal treatment, or those who had bleeding due to cervical lesions were also excluded from the study.

After thorough history and clinical examination, the patient was sent for Transvaginal ultrasonography. In TVS assessment of various factors were done which included uterine size, endometrial echo (EE), fibroids, polyp, and adnexal mass. Endometrium was considered to be hyperplastic if >5 mm in postmenopausal women and >15 mm in peri menopausal women. After that hysteroscopy & dilatation and curettage was done as an indoor procedure since office hysteroscopy is not done in our hospital. Hysteroscopy was performed with a rigid 30° hysteroscope and diagnostic sheath of 5 mm diameter (Storz Endoscopy). Hysteroscopy was always carried out in sterile conditions after careful cleansing of external genitalia, vagina, and cervix with a povidone iodine antiseptic solution. Normal saline was used to dilate the uterine cavity infused by pneumatic cuff under pressure. The findings were defined accordingly.

After this blind D & C was done and endometrium was sent for histo pathological examination. Histopathologically endometrium was designated as proliferative, secretory, non-secretory, atrophic, polyp, hyperplasia and carcinoma. Diagnosis according to all the three modalities were compared and evaluated.

Plan for statistical Analysis: All the data obtained was properly arranged and statistically tabulated in 2 X 2 contingency tables. These data were analyzed using fisher s exact test and kappa values were calculated to know the strength of agreement between the three modalities. The three diagnostic modalities were compared and accordingly sensitivity, specificity, positive predictive value, negative predictive value and kappa indices were calculated. These results were obtained by taking hysteroscopy as a gold standard.⁴ Both TVS and D & C were compared to hysteroscopy.

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Based on their findings, analysis was done to find out which diagnostic modality is better in diagnosing various causes of abnormal uterine bleeding and to know if these modalities can be used in sequence to increase the probability of picking up abnormal cases and excluding normal ones.

RESULTS AND ANALYSIS: Total number of study population was 70. Out of them 50 were peri menopausal and 20 were postmenopausal women. The data was arranged in 2 x 2 contingency tables and sensitivity, specificity, Positive predictive value and Negative predictive value was calculated. Data were analyzed using Microsoft Excel 2003 and the statistical software used was STATISTICA VERSION 6 [Tulsa, Oklahoma: Stat Soft Inc., 2001].

TVS findings in these 70 women were as follows: TVS was normal in 30 (42.85%) women, endometrial polyp was found in 7 (11%) women. 19 (27.14%) women had fibroid uterus, 14 (20%) had endometrial hyperplasia. But none had any findings corroborative of suspected endometrial carcinoma.

When hysteroscopy was done, it came out to be normal in 32 (45.71%) women, endometrial atrophy was detected in 7 (10.4%) women, 8 (11.9%) women had endometrial polyp, 6 (8.9%) women had submucous myoma, whereas endometrial hyperplasia was detected in 14 (20%) women. In 3 cases hysteroscopy was unsuccessful. Here also no cases of endometrial carcinoma were detected.

Histological findings after D & C were as follows:

Normal -43; atrophic - 7, polyp - 2, hyperplasia -6, Carcinoma -2. In totality, there were 60 cases. Tissue was insufficient in 10 cases. These patients were not included in the statistical analysis.

Table 1 shows the 2 X 2 contingency table between TVS and hysteroscopy in total study group taking hysteroscopy as standard. After calculating the sensitivity, specificity, Positive predictive value (PPV) and Negative Predictive value (NPV) from the 2 X 2 contingency table, TVS shows a good sensitivity of 85.7% while specificity of 56.5 %. Its NPV is 89.7 % while PPV is 47.4 %. Actually it is showing low specificity here because it diagnosed intramural and sub serous fibroids which were not diagnosed by hysteroscopy.

Table 2 shows the comparison between the findings on TVS and Hysteroscopy. TVS missed 3 cases, 1 polyp in postmenopausal and 2 hyperplasia cases in peri menopausal women, out of total positive cases found on hysteroscopy. Hysteroscopy did not diagnose intramural and sub serous fibroids found in 15 cases (by TVS) and both modalities did not agree in another five cases where TVS diagnosed hyperplasia. 44/70 was in agreement. The p value is 0.0014 which is very statistically significant. From table 2, the kappa value is 0.35; hence there comes out to be a fair strength of agreement between hysteroscopy and TVS.

Table 3 shows the 2X2 contingency table comparing D & C and hysteroscopy findings in total study population taking hysteroscopy as standard. Sensitivity of D & C came out to be 61.9% while specificity is 88.9%. This shows that D & C is missing a high percentage of cases. It has a PPV (Positive predictive value) of 76.5% while NPV (Negative Predictive value) of 80%.

Table 4 shows the comparison between the findings as per Hysteroscopy and D & C. D & C showed normal histopathology in 8 cases which had hyperplasia on hysteroscopy. 46/58 cases were in agreement. Moreover, of 4 cases which were found normal on hysteroscopy, 2 had hyperplasia and 2 had cancer on histopathology after D & C. Two cases which were diagnosed as myoma on

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hysteroscopy came to be normal post D&C. From table 3, the p value is 0.0002 which is statistically very significant.

From table 4, the kappa value comparing the strength of agreement between the findings of the two modalities that is Hysteroscopy and D &C came to be 0.457. This shows a moderate strength of agreement between the two modalities.

DISCUSSION: Abnormalities in menstrual cycle is the most common presenting symptom in Gynaecology out-patient department. Patients came to OPD of SSKM hospital with various complaints of menorrhagia, menometrorrhagia and postmenopausal bleeding with varied presentations. Menorrhagia was found to be the most common complaint in peri menopausal women (17/50 i.e. 34 %) and scanty irregular bleeding in postmenopausal women (7/20 i.e. 35%).

In our study peri menopausal women were (50/70) i.e. 71 % and postmenopausal women were 29% (20/70). In our study in 3 out of 70 patients hysteroscopy was unsuccessful owing to stenosed cervixes. It is 4.28% (3/70) in total population and if only postmenopausal group is considered, it is 15 % (3/20). These results are similar to the study conducted by Ashraf M. N. Refaie.⁵ Abnormal hysteroscopic findings were found in 45.3% (48/106) of all cases in Ashraf's series of out-patient hysteroscopy. In our study abnormal findings were found in 40.3% of patients.

In our study TVS has good sensitivity of 85.7 % and NPV of 89.7%. The kappa value (0.35) between hysteroscopy and TVS in total population shows a fair strength of agreement between the two modalities. This means that TVS can be considered as a first line investigation in patients with abnormal uterine bleeding. The results are similar to the study conducted by Emanuel MH ET al.⁶

According to Gücer F, Arikan MG ET al.⁷ dilation and curettage is necessary in symptomatic women with an endometrial thickness < 4 as well as asymptomatic women with endometrial thickness > 4 mm. In our study also, as described above biopsy was necessary in symptomatic patients whether or not EE raised suspicion as in the peri menopausal well as postmenopausal age group.

In our study hysteroscopy looked normal though histopathology showed hyperplasia in four cases. Moreover, Endometrial Thickness more than the cut off value did not always prove to be pathological. These results are in concordance with the study by Barbero M, Enria R, et al.⁸

The objective of Deckardt R, Lueken RP et al.⁹ was to compare trans vaginal ultrasound, hysteroscopy, and dilation and curettage (D & C) in the evaluation of women with peri menopausal and postmenopausal bleeding. Of their 1286 patient population, 29 (2.26%) had a histologic diagnosis of endometrial carcinoma; in 2 of them (7.14%) endometrial thickness was 5 mm or less. In 10 women (34.5%), endometrial carcinoma was missed by hysteroscopy (Sensitivity 65.52%, specificity 99.92%). Complication rate of D&C was 1.4%. They concluded that in women with peri menopausal and postmenopausal bleeding neither trans vaginal ultrasound nor hysteroscopy as a single diagnostic tool is suitable to rule out endometrial cancer.

In our study 2/70 i.e. 2.8% had endometrial carcinoma, having EE of 6mm in postmenopausal and 8mm in peri menopausal women. Both the cases were missed by hysteroscopy. Therefore, though in our study the sample size was much smaller, here also it is seen that TVS and hysteroscopy as single tests are not sufficient and biopsy is necessary especially guided biopsy in order not to miss any significant lesion.

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CONCLUSION: TVS is more sensitive in diagnosing cases of fibroids mainly intramural and sub serous ones which are missed by hysteroscopy. According to our study it can be concluded that TVS can be taken up as an effective supplementary investigation to hysteroscopy and associated biopsy since it is highly sensitive followed by hysteroscopy and associated biopsy.

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	HYS +	HYS-
TVS +	18	20
TVS-	3	26

Table 1 : 2X2 contingency table between Hysteroscopy(HYS) and Trans Vaginal Sonography(TVS) findings in peri and post-menopausal women

Abbreviations:

HYS – Hysteroscopy.

TVS –Trans vaginal ultrasound.

+ - Positive.

- Negative.

p value = 0.0014 (Very statistically significant).

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	Transvaginal sonography						
Hysteroscopy	Column1	Normal	Fibroid	Polyp	Atrophy	Hyperplasia	Cancer
	normal	19	15			5	0
	fibroid		6				
	polyp	1		6			
	atrophy	7					
	hyperplasia	2				6	
	cancer						

Table 2 :Comparison between Hysteroscopic and TVS findings in Abnormal uterine bleeding in peri and post-menopausal women

95 % kappa value - 0.35; confidence interval 0.18 to 0.524.

	HYS+	HYS-
D &C+	13	4
D&C-	8	33

Table 3: 2X2 contingency table comparing(HYS) and D&C findings in Peri and Postmenopausal women

Abbreviations:

HYS : Hysteroscopy.

D&C : Dilatation and Curettage.

+ : Positive.

- : Negative.

Total 58 cases; 10 insufficient; 2 myoma not included in this contingency table. p value =0.0002 (Very statistically significant).

	D&C						
HYSTERO-SCOPY	Column1	Normal	Atrophic	Polyp	Hyperplasia	Carcinoma	Myoma
	normal	33			2	2	
	atrophic		7				
	polyp			1	2		
	hyperplasia	8		1	2		
	carcinoma						
	myoma	2					

Table 4 : Comparison between hysteroscopic and dilatation and curettage findings in abnormal uterine bleeding in peri and postmenopausal women

kappa value - 0.457

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