Original Research Article

The role of transvaginal sonography in measurement of endometrial thickness in post and perimenopausal women

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Abstract

Background: Endometrial cancer is one of the most common gynaecologic malignancy yet also one with the best survival statistics **Aim:** Was to determine the value of transvaginal sonography in detecting endometrial thickness in post and perimenopausal women and correlate it with histopathology report. **Materials and Methods:** Cross sectional study of two groups. Group A**:** Premenopausal-50 Group B: Postmenopausal -20. TVS was done and ET noted in all the women in the study. Correlation with Histopathology was done following D and C or Hysterectomy. **Results:** Premenopausal group-one case of Ca Endometrium ET 5-17mm. Postmenopausal group-one case of Ca Endometrium ET 3-15mm **Conclusion:** In premenopausal group by TVS no specific thickness could be given under which pathology could be excluded. In postmenopausal women ET <4mm do not require D and C. **Clinical significance:** Patients having ET<4mm do not require D and C but should be under follow up.

Key Words: Carcinoma endometrium, Endometrial thickness, Transvaginal ultrasound.

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Email: drveenaanusha@gmail.com
Received Date: 12/02/2018 Revised Date: 10/03/2018 Accepted Date: 17/04/2018
DOI: https://doi.org/10.26611/1012616

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 26 April 2018

INTRODUCTION

Endometrial cancer is one of the most common gynaecological malignancy, y *et al* so one with best survival statistics. In India incidence is 4.3/1,00,000[1].The incidence of endometrial carcinoma raising and the disease which was formerly entirely confined to the post menopausal women is now occurring with increasing frequency in middle aged and perimenopausal women. The procedure of dilatation and curettage introduced in 1843 by Recamier is still gold standard for distinguishing normal and abnormal endometrium. D and C has disadvantage of morbidity and also being a blind method misses polyps, myoma and small areas of endometrial carcinoma. A less invasive method that reduces the number of unnecessary biopsies clearly would be of benefit.TVS has be recommended as a first line of investigation because it is less invasive compared with the other tests.[2-9] There are different ET cut off values recommended by various professional groups. ACOG recommends <4mm[9] in perimenopausal women. Smith Bind man *et al* [6] suggested that endometrial sampling was unnecessary if the ET <5mm.Timmer mans *et al*[8] suggested that Smith Bind man overestimated performance of TVS ET which concluded that 3mm rather than 5mm should be preferred cut off.[8,10]

MATERIAL S AND METHODS

Cross sectional study. Ethical approval was obtained from ethical committee of A.J Institute of Medical Sciences. Study was conducted from January 2017 to June 2017.Transvaginal sonography was performed in 70 patients. Was divided into two groups.

How to cite this article: Veena K R Bhagavan, Anusha G P. The role of transvaginal sonography in measurement of endometrial thickness in post and perimenopausal women. *MedPulse – International Journal of Gynaecology.* April 2018; 6(1): 17-20. http://medpulse.in/Gynacology/index.php

Group A: Comprised of 50 premenopausal women who presented mainly with excess bleeding per vagina (perimenopausal period commencing with onset of oestrogen deficiency symptoms and extends to one year after last menstrual period)

Group B: Comprised of 20 postmenopausal women (women attained menopause more than one year back) presented either with bleeding or mass per vagina. 70 patients included in the study detailed history taken and physical examination done. TVS was done by transvaginal probe of frequency of $5MH_z$ by Gynaecologists and confirmed by Radiologists.ET obtained in midsagittal plane, measured from the outer borders of the anterior and posterior endometrium at the thickest part. All patients in the study underwent either D and C or hysterectomy. Histopathology examination were performed by the Pathologists not involved in the study and were not blinded to the TVS findings for the patients.

Inclusion Criteria

1. Premenopausal women >40years presented with menorrhagia
2. Post menopausal women

Exclusion Criteria

1. Those with cervical growth

Data was collected and analysed. Comparison between categorical variables were tested by the use of contiagency tables. Analysis was done by Fischer exact

RESULTS

Table 1:

Clinical diagnosis	No of cases	Range of endometrial thickness	Mean endometrial thickness
DUB	33	5-17mm	10.45
Polyp	4	8-15mm	10.25
Fibroid	13	6-17mm	9.75

Table 2: Comparison of histopathological reports with endometrial thickness measured by TVS

Histopathological report	No of cases	Mean endometrial thickness in mm	Percentage
Non secretory endometrium	13	11.02(8-15)	26%
Secretory endometrium	15	9.3(6-14)	30%
Cystoglandular	6	10.2(5-15)	12%
Adenomatous hyperplasia	5	9.4(5-14)	10%
Simple hyperplasia	4	12.3(10-17)	8%
Adenomyosis with fibroid	6	9.56(7-17)	12%
Adenocarcinoma	1	9	2%

Table 3: Agewise distribution of pre menopausal study group with endometrial thickness and histopathology

Years	No.	Mean endometrial thickness(in mm)	Diagnosis	Histopathology
40-45 years	27	10.45	a.DUB-22 b.Fibroid-2 c.Polyp-3	Cystoglandular hyperplasia-3 Nonsecretory-3 Secretory-9 Adenomyosis with leiomyoma -3 Proliferative-4 Superficial adenomyosis-3 Simple hyperplasia-2
46-50 years	20	10.72	a.DUB-16 b.Fibroid-2 c.Polyp-2	Cystoglandular hyperplasia-2 Nonsecretory-1 Secretory-6 Adenomyosis -3 Proliferative-4 Adenomatous hyperplasia-1 Simple hyperplasia-2
51years	3	11.6	a.DUB-3	Adenocarcinoma-1 Proliferative -3

Table 4: Presenting symptoms and its correlation with endometrial thickness as measured by trans vaginal sonography

Symptoms	No of cases	Range of endometrial thickness(in mm)	Mean endometrial thickness(in mm)
Prolapse without bleeding	6	3-4	3.3
Prolapsed with bleeding	3	3-4	3.6
Post menopausal bleeding	11	3-15	7.9
Total	**20**		

Table 5: Comparison of histopathology with endometrial thickness measured by transvaginal sonography

Histopathology	No of cases	Mean endometrial thickness(in mm)	Percentage
1.Atrophic endometrium	12	3.8	60%
2.Secretory	1	6	5%
3.Nonsecretory	3	6.6	15%
4.Endometrial carcinoma	1	13	5%
5.Simple hyperplasia	3	11	15%
Total	**20**		**100**

Table 6: Age wise distribution of post menopausal study group with endometrial thickness and histopathology

Age	No.	Mean endometrial thickness(in mm)	Diagnosis	Histopathology
45-50 yrs	7	7.16	a.Postmenopausal bleeding-6 b.Prolapse-1	Atropic-3 Secretory-1 Simple hyperplasia-2 Adenocarcinoma-1
51-55 yrs	4	6.66	a.Postmenopausal bleeding-2 b.Prolapse-2	Atrophic-2 Simple hyperplasia-1 Non secretory-1
56-60 yrs	4	4.13	a.Postmenopausal bleeding-2 b.Prolapse-2	Atrophic-3 Nonsecretory-1
>60 yrs	5	4	a.Postmenopausal bleeding-1 b.Prolapse-4	Atropic-4 Nonsecretory-1

Table 7: Incidence of malignancy among postmenopausal women according to endometrial thickness

Endometrial thickness in mm	Positive for malignancy	Negative for malignancy	Total
>4mm	1	13	14
<4mm	0	6	6
Total	**1**	**19**	**20**

Sensitivity-100% Positive predictive value=7.14%. Specificity-31.57% Negative predictive value=100%, P=0.7 NS (Fisher's exact test), NS-Not significant

P=0.7 NS which is not significant. As sample size is small this value is coming as not significant. Other statistics have proved that this test is very significant. In present study premenopausal group ET ranged from 5-17mm with DUB occurring for 66% of the cases. There was one case of endometrial carcinoma in the premenopausal group. In postmenopausal group the ET ranged from 3-15mm.Out of 20 postmenopausal women 55% complained of postmenopausal bleeding. There was one case of endometrial carcinoma in this group according to 5%. In the present study premenopausal group cut off value could not be given under which endometrial abnormality could be excluded due to wide range of endometrial thickness reflecting varied histopathological change. In the present study post menopausal group, cut off value of 4mm was deduced below which dilatation and curettage was not required and above which endometrium was associated with same pathology and hence required D and C.

DISCUSSION

TVS ET has replaced D and C as the first line of investigation with PMB but as yet there is no consensus as to which ET cut off value should be adopted to define abnormality.[4,6-8,11-16] The sensitivity for detection of endometrial carcinoma at 3,4 and 5mm the current levels of recommended in professional guidelines were 97.0,94.1, and 93.5% respectively.

CONCLUSION

In the present study two groups of gynaecologic patients were scanned by TVS prior to D and C or hysterectomy.50 patients belonged to the premenopausal group and 20 patients belonged to post menopausal group. There was one case of endometrial carcinoma in each group. In premenopausal group by TVS no specific thickness could be given under which pathology could be excluded. However TVS was useful in diagnosing associated pathological conditions like fibroids, adenomyosis, polyps etc which require treatment. TVS is safe, simple, non invasive procedure for screening endometrium in postmenopausal women with or without bleeding. Patients having endometrial thickness <4mm do not require D and C but should be under follow up. While those having thickness >4mm require D and C as they are associated with endometrial pathology which can be confirmed histopathologically, thereby avoiding unnecessary curettage.

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Source of Support: None Declared
Conflict of Interest: None Declared