

COMPARISON OF TRANSVAGINAL ULTRASONOGRAPHY AND HYSTEROSCOPY IN THE EVALUATION OF PERI AND POSTMENOPAUSAL BLEEDING

Pratibha Garg¹, Suman Yadav²

¹Assistant Professor, Department of Obstetrics and Gynaecology, Gajra Raja Medical College and K.R. Hospital, Gwalior.

²Consultant, Department of Obstetrics and Gynaecology, Batra Hospital and Research Institute, New Delhi.

ABSTRACT

Anything that can significantly improve the accuracy of diagnosis, the cause of abnormal uterine bleeding in peri-menopausal and postmenopausal women can reduce the frequency of hysterectomy as a cure.

Abnormal uterine bleeding has become more important on 2nd half of twentieth century, because women are experiencing more menstrual cycles during their reproductive life.

AIM

To evaluate intrauterine abnormalities in symptomatic peri and postmenopausal bleeding by transvaginal ultrasonography and hysteroscopy.

METHOD

This prospective study was carried out on 60 patients with peri and postmenopausal bleeding attending Gynaecology OPD at Batra Hospital.

RESULT

Hysteroscopy has higher sensitivity for diagnosing endometrial abnormalities compared to TVS.

KEYWORDS

Abnormal Uterine Bleeding, TVS- Transvaginal Sonography, Hysteroscopy.

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INTRODUCTION

The age of onset of menopause is 40 to 55 years and varies in different races. In India, it occurs between 44 to 50 years.^{1,2,3} Prior to menopause comes the perimenopausal transitional years that encompass the change from normal ovulation cycles to cessation of menses and are marked by irregularity of menstrual cycles.

Even without irregular bleeding or amenorrhoea, if a woman over the age of 52 years continues to menstruate she needs investigations to rule out endometrial hyperplasia and malignancy of genital tract. Other causes include fibroids, polyps, carcinoma endocervix and atrophic vaginitis.

Traditionally, dilatation and curettage used to be mainstay of investigation of abnormal uterine bleeding, but it is not accurate for diagnosing focal intrauterine lesions which are small or located in areas difficult to curette.

The present study aims to evaluate the different diagnostic methods, i.e. hysteroscopy which provides an optimal safe and cost effective strategy in modern management of women with peri and postmenopausal bleeding.

MATERIAL AND METHOD

The study was a prospective study conducted in the Department of Obstetrics and Gynaecology in Batra Hospital and Medical Research Centre, New Delhi, from March 2008 to November 2009.

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Corresponding Author:

Dr. Pratibha Garg,

Department of Obstetrics and Gynaecology,

Batra Hospital and Research Institute,

New Delhi.

E-mail: prati_praveen@rediffmail.com

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60 patients with peri and postmenopausal bleeding attending OPD were included in this study.

Inclusion Criteria

1. Perimenopausal women age >40 years with menorrhagia, menometrorrhagia, metrorrhagia, polymenorrhea, intermenstrual bleeding, post coital bleeding.
2. Postmenopausal bleeding after one year of amenorrhoea.
3. Patient on hormone replacement therapy.

Exclusion Criteria

1. Age <40.
2. Pregnancy.
3. Patient with bleeding diathesis.

METHOD

Detailed history of patient was taken which included presenting complaints, history of presenting illness, menstrual history, obstetric history, family, past and personal history followed by a complete general physical examination including pulse rates, blood pressure and temperature. Systemic examination done to rule out any medical disorder. Pelvic examination done. Laboratory investigation whenever indicated was done like pregnancy test in perimenopausal woman, CBC, BT/CT, Pap smear.

After that the patient of abnormal uterine bleeding was subject to transvaginal ultrasound (Voluson Pro 730; GE Medical System) with a transvaginal probe of acoustic frequency of 10 MHz. Parameters studied included endometrial thickness, polyp, fibroid, growth, adnexal pathology or uterine pathology.

After that same patient was taken up for hysteroscopy followed by curettage or hysteroscopy-guided Bx of polyp or growth.

Hysteroscopy was performed, preferably in postmenstrual phase or post bleeding phase. All were performed using a standard 5 mm hysteroscope with a 30° fore-oblique lens.

Procedure was performed under GA. Normal saline was used as distension media.

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Procedure was performed under GA. Normal saline was used as distension media.

RESULTS

In this study, majority of patients (75%) were of perimenopausal age group.

Mean age in perimenopausal group was 43.11 years and mean age in postmenopausal group was 55.93 years. Table-1

Menorrhagia (33.3%) was the most common presenting complaint followed by postmenopausal bleeding (25%), dysmenorrhea (13.3%), menometrorrhagia (11.6%), postcoital bleeding (6.6%), intermenstrual bleeding (6.6%) metrorrhagia (3.3%), Table 2.

24 patients were nulliparous, of which majority (79.6%) had abnormal endometrial finding indicating nulliparity as an associated risk factor for AUB, Table 3.

Hypertension was present in 21.6% cases, out of which 61.5% had abnormal endometrial pathology; diabetes in 18.3%, out of which 81.8% had abnormal endometrial pathology; obesity in 5% of which 66.6% had abnormal endometrial pathology.

So hypertension, diabetes mellitus and obesity were associated with abnormal endometrial pathology in our study, Table 4.

TVS have sensitivity of 59.2%, specificity as 81.8%, positive predictive value of 72.7% and negative predictive value of 71.0%. P value is .001, which is statistically significant for diagnosing hyperplastic endometrium.

Hysteroscopy has sensitivity of 62.9%, specificity of 45.4%, positive predictive value of 48.5% and negative predictive value as 60%, p value was .571 which is statistically not significant. So in this study, TVS has a higher specificity for

diagnosis of endometrial hyperplasia compared to hysteroscopy, Table 5.

TVS had sensitivity of 47.0%, specificity of 76.7%, positive predictive value of 44.4% and negative predictive value of 78.5% for diagnosing endometrial polyp. P value .07, which was statistically not significant, Table 6.

Hysteroscopy has sensitivity of 52.1%, specificity of 81.0%, positive predictive value of 63.1% and negative predictive value of 73.1% for diagnosing endometrial polyp. P value was .319, which was statistically not significant, Table 7. So hysteroscopy has been found to be more sensitive and specific in diagnosing endometrial polyp compared to TVS.

TVS has sensitivity of 33.3%, specificity of 94.7%, positive predictive value of 25% and negative predictive value of 96.4% for detecting submucosal fibroid. P value was .701, which was statistically not significant. Hysteroscopy detected submucosal fibroids in 3 cases, of which 1 was confirmed by histopathology. This gave sensitivity of 50%, specificity of 94.82%, positive predictive value of 25% and negative predictive value of 98.21% for detecting submucosal fibroids. P value was .012, which was statistically not significant.

The sensitivity, specificity and negative predictive value of hysteroscopy in higher for diagnosing submucosal fibroids to TVS.

We had only one patient with abnormal endometrial growth and detected hysteroscopically. HPE had confirmed it to be carcinoma endometrium, Table 9.

In this study sensitivity, specificity, positive predictive value and negative predictive value of hysteroscopy was 85.7%, 56.0%, 73.1%, 73.6% respectively for detecting endometrial abnormalities.

TVS gave sensitivity, specificity, positive predictive value and negative predictive value of 84.2%, 72.2%, 84.2% and 72.7% respectively for detecting endometrial abnormalities.

So, in our study hysteroscopy has higher sensitivity for detecting endometrial abnormalities. This correlates with the study done by Bruno Cacciatore et al.⁴ and Jaiswar Shyam Pyari et al.⁵

	No. of Patients	Percent
Perimenopausal	45	75%
Postmenopausal	15	25%
Total	60	100%

Table 1: Age Wise Distribution of Patients

Complaints	No. of Patients	Percent
Menorrhagia	20	33.3%
Metrorrhagia	2	3.3%
Menometrorrhagia	7	11.7%
Polymenorrhea	8	13.3%
Intermenstrual bleeding	5	8.3%
Post-menopausal bleeding	15	25%
Postcoital bleeding	3	5%
Total	60	100%

Table 2: Presenting Complaints Wise Distribution

Parity	No. of Patients	Percent
Nulliparous (24)	5 (20.8%)	19 (79.1%)
Multiparous (36)	18 (50%)	18 (50%)
Total (60)	23	37

Table 3: Parity in AUB

	Risk Factors	Postmenopausal Women	Perimenopausal Women	Total
1.	Hypertension	7	6	13 (21.6%)
2.	Diabetes mellitus	4	7	11 (18.3%)
3.	Hypothyroidism	3	5	8 (13.3%)
4.	Obesity	0	2	3 (5%)
5.	Breast cancer	1	0	1 (1.6%)
6.	Tamoxifen	1	0	1 (1.6%)
7.	OCPs*	0	1	1 (1.6%)
8.	HRT**	0	0	0 (0%)
9.	Smoking	0	0	0 (0%)
10.	Alcohol	0	0	0 (0%)

Table 4: Associated Risk Factors

*- Oral Contraceptives Pills, ** - Hormone Replacement

Hysteroscopy	HPR		Total
	Hyperplasia	Normal	
Hyperplasia	17	18	35
Normal	10	15	25
Total	27	33	60

Table 5: Comparison of Hysteroscopic Endometrial appearance results with HPR*

TVS Polyp	HPR Polyp.		Total
	Yes	No	
Yes	8	10	18
No	9	33	42
Total	17	43	60

Table 6: Incidence of Endometrial Polyps finding on TVS* and HPR**

*TVS- Transvaginal ultrasonography, **HPR- Histopathological report.

Hysteroscopy Polyp	HPR Polyp		Total
	Yes	No	
Yes	12	7	19
No	10	31	41
Total	22	38	60

Table 7: Incidence of Endometrial Polyps findings on Hysteroscopy and HPR*

*HPR-Histopathological report.

TVS Growth	HPR Carcinoma Endometrium		Total
	Yes	No	
Yes	1	0	1
No	0	59	59
Total	1	59	60

Table 8: Incidence of Abnormal Endometrial Growth on TVS* and HPR**

*TVS- Transvaginal ultrasonography, **HPR- Histopathological report.

DISCUSSION

In our study, majority of patients were of perimenopausal age group. This corresponds to studies done by Wyon et al.¹ Randhawa et al.² Kaw et al.³ In this study, menorrhagia was the most common presenting complaint followed by postmenopausal bleeding. A study by Jaiswar Shayam Pyari, et al. [2006].⁵ had menorrhagia [40%] as the most common symptom. We found that nulliparity as an associated risk factor for abnormal uterine bleeding. This

correlates with the studies done by C. Farquhar et al.⁶ Sarah Feldman M.D. et al.⁷ Meira Epplein et al.⁸ in which nulliparity has been seen as an associated risk factor for endometrial hyperplasia/endometrial cancer. As per our study hypertension, diabetes mellitus and obesity were associated with abnormal endometrial pathology in our study. Similar results were seen in studies done by Sarah Feldman M.D. et al.⁷ and C. Farquhar et al.⁶ TVS compared to hysteroscopy has a higher specificity for diagnosis of endometrial hyperplasias. This correlates with the studies done by Mukhopadhyay S et al.⁹ Paraskevaidis E et al.¹⁰ and Chatpavit Getpook et al.¹¹ In our study, hysteroscopy has been found to be more sensitive and specific in diagnosing endometrial polyps compared to TVS.

This corroborates with studies done by Bruno Cacciatore et al. and Mukhopadhyay S et al.⁹ Of 60 cases, TVS detected abnormal endometrial growth in one patient which was confirmed by histopathology. Hysteroscopy detected abnormal endometrial growth in one patient, which was confirmed by histopathology. This gave sensitivity of 100%, specificity of 100%, positive predictive value of 100% and negative predictive value of 100% in diagnosing endometrial cancer. This correlates with the study done by Rita Souse et al.¹² Haller H et al.¹³ and Pekka Taipale et al.¹⁴ Since we had only one case of which was found to have cancer endometrium, much statistical importance cannot be given to this.

CONCLUSION

TVS is a simple, non-invasive and higher acceptable technique to the patient. It can identify women with perimenopausal and postmenopausal bleeding in which the likelihood of endometrial pathology is high and in whom tissue sampling should be performed.

Abnormal uterine bleeding is a symptom and not a disease. It is a common problem of perimenopausal or postmenopausal women.¹⁵

A recent meta-analysis found that in postmenopausal women a transvaginal sonography result of 5mm or less endometrial thickness reduced the risk of disease by 84%.¹⁶ but some pathology may be missed by it. So it is recommended that hysteroscopy and biopsy should be performed if clinical suspicion is high.^{17,18}

So we concluded that TVS should be used as routine first step diagnostic technique, but it may miss some small lesions like polyps, so hysteroscopy followed by histopathology should be considered as a standard modality to evaluation of abnormal uterine bleeding in perimenopausal and postmenopausal bleeding.

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