

Hysteroscopy—A Mode of Screening Women with Postmenopausal Bleeding: Our Experience

¹Sunita Tandulwadkar, ²Pooja Lodha, ³Bhavana Agarwal, ⁴Prashant Deshmukh, ⁴Sejal Naik

¹Chief, Ruby Hall IVF and Endoscopy Center, Head, Department of Obstetrics and Gynecology
Ruby Hall Clinic, Pune, Maharashtra, India

²Senior Registrar, Ruby Hall Clinic, Pune, Maharashtra, India

³Senior Resident, Department of Reproductive Medicine, Ruby Hall Clinic, Pune, Maharashtra, India

⁴Clinical Assistant, Ruby Hall Clinic, Pune, Maharashtra, India

Correspondence: Sunita Tandulwadkar, Chief, Ruby Hall IVF and Endoscopy Center, Ruby Hall Clinic, Pune, Maharashtra India, Phone: 9822015850, e-mail: sunitart@hotmail.com, rubyhallivf@hotmail.com

ABSTRACT

Study Objective:

1. To study the etiology of postmenopausal bleeding.
2. To study the significance of hysteroscopy in evaluation of the etiopathogenic factors.
3. Correlating the diagnosis after transvaginal sonography (TVS), hysteroscopy and histopathology.
4. Feasibility of conservative management with hysteroscopy in postmenopausal bleeding.

Design: Prospective study from January 2009 to June 2010.

Setting: Department of Obstetrics and Gynecology of Ruby Hall Clinic, Pune, Maharashtra, India.

Sample size: Sixty postmenopausal women with complaint of bleeding per vaginum.

Interventions: Clinical and sonographic evaluation followed by diagnostic and/or therapeutic hysteroscopy and guided biopsy. Hysteroscopic images were analyzed and compared with histopathological results.

Measurements and main results: On hysteroscopy, endometrium is classified as suggestive of normal, atrophic, endometrial hyperplasia or endometrial carcinoma. Histopathological diagnosis was taken as a gold standard to determine the efficacy of hysteroscopy in diagnosing endometrial pathologies. The sensitivity and specificity of hysteroscopy in diagnosing endometrial pathologies was assessed.

Conclusions: In women with postmenopausal bleeding, hysteroscopy is a valuable tool that allows precise diagnosis of various endometrial pathologies. In our study, the sensitivity of hysteroscopy was 97% and the specificity was 98.66%. Hence, we can conclude that it is highly accurate for evaluating endometrial pathologies. For obvious benign lesions, it also provides treatment in the same sitting, therefore avoiding an extensive, morbid, and expensive procedure like hysterectomy.

Keywords: Postmenopausal bleeding, Hysteroscopic, Hysteroscopic-guided biopsy, Avoiding hysterectomy.

INTRODUCTION

The average age of menopause in Asian women is 46 years.¹ With increasing life expectancy, a healthy 50-year-old woman today spends as much as 40% of her life in postmenopausal state, and hence deserves a good quality of life postmenstrually.

The goal of evaluation of postmenopausal bleeding is to achieve the diagnosis with greatest accuracy, the least risk and expense for the patient. With the advent of hysteroscopy in the last two decades, focus has shifted from endometrial biopsy to hysteroscopic-guided biopsy as a 'gold standard' diagnostic tool in the evaluation of postmenopausal bleeding.²

AIMS AND OBJECTIVES

1. To study the etiology of postmenopausal bleeding.
2. To study the significance of hysteroscopy in evaluation of the etiopathogenic factors.
3. To study the selection of various investigations available and their impact on diagnosis of etiology of postmenopausal bleeding.

4. Correlating the diagnosis after transvaginal sonography (TVS), hysteroscopy and histopathological diagnosis.
5. Feasibility of conservative management in postmenopausal bleeding.

MATERIALS AND METHODS

This is a prospective study of 120 postmenopausal women (at least one year of amenorrhea) attending the Gynecology Outpatient Department of Ruby Hall Clinic with the complaint of per vaginal bleeding. This study was carried out over 18 months from January 2009 to June 2010.

Exclusion Criteria

1. Women taking hormonal replacement therapy
2. Obvious cause of bleeding from cervix and vagina
3. Known case of bleeding dyscrasias
4. Anticoagulant therapy
5. Surgical menopause
6. TVS showing adnexal pathology.

For each patient detailed history was taken, which included general medical history, menstrual and obstetric history, duration since menopause, severity and duration of postmenopausal bleeding, history of gynecological operations, drug intake and associated symptoms. A thorough general and systemic examination was done along with abdominal, vaginal and rectal examination.

Endometrial thickness was measured in the longitudinal plane on transvaginal ultrasound (TVS). The adnexal region was also covered in the ultrasonic examination to exclude extra-uterine pelvic masses.

Clinical and sonographic evaluation followed by diagnostic and/or therapeutic hysteroscopy with office hysteroscope (Versascope of Johnson and Johnson). In each case, hysteroscopic visualization of the uterine cavity and hysteroscopic—guided biopsy was done. Sometimes, cervical stenosis poses significant difficulty while performing hysteroscopy in postmenopausal women. Paracervical block with 2% xylocaine was used when difficulty is encountered at the level of internal os.

Records of hysteroscopy finding are tabulated down. Endometrial biopsy of a suspected lesion was taken in all cases. On hysteroscopy, endometrium was classified to be suggestive of:

1. Normal
2. Atrophic (Fig. 1)
3. Endometrial hyperplasia (Fig. 2)
4. Suggestive of endometrial carcinoma (Fig. 3)—obvious intrauterine growth with necrotic tissue is seen.

Histopathological diagnosis was taken as gold standard to determine the efficacy of hysteroscopy in diagnosing endometrial pathologies. In cases of obvious benign lesions like polyp and submucous fibroid, the patient was treated in the same sitting with versapoint or resectoscope.

The sensitivity and specificity of hysteroscopy in diagnosing various endometrial pathologies were assessed.

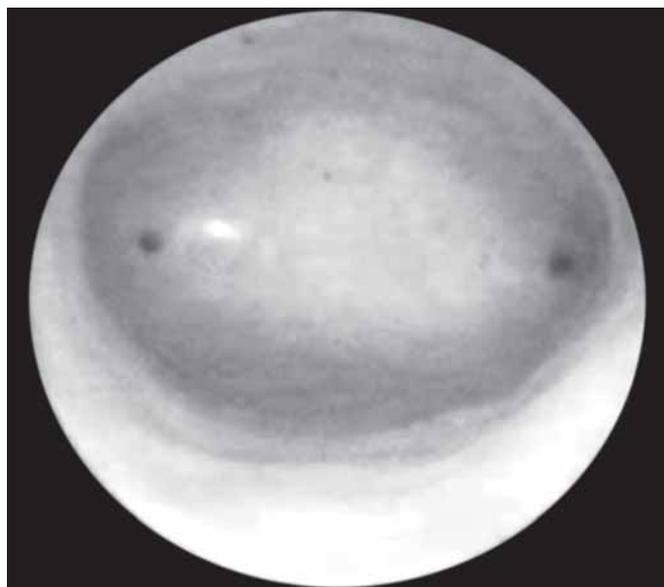


Fig. 1: Atrophic endometrium (Courtesy: IVF and Endoscopy Centre, Ruby Hall Clinic, Pune)

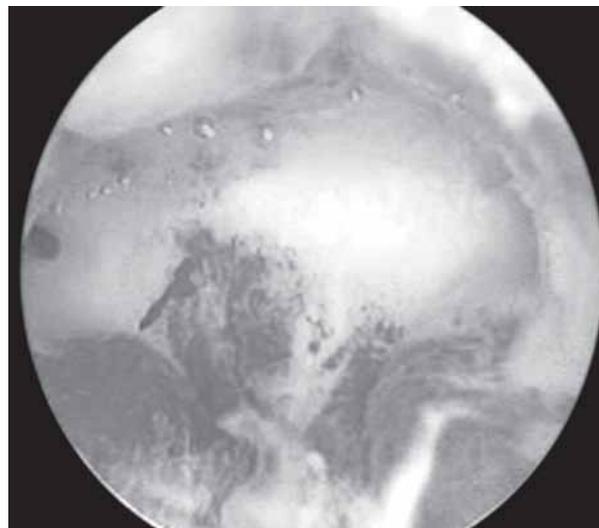


Fig. 2: Endometrial hyperplasia (Courtesy: IVF and Endoscopy Centre, Ruby Hall Clinic, Pune)

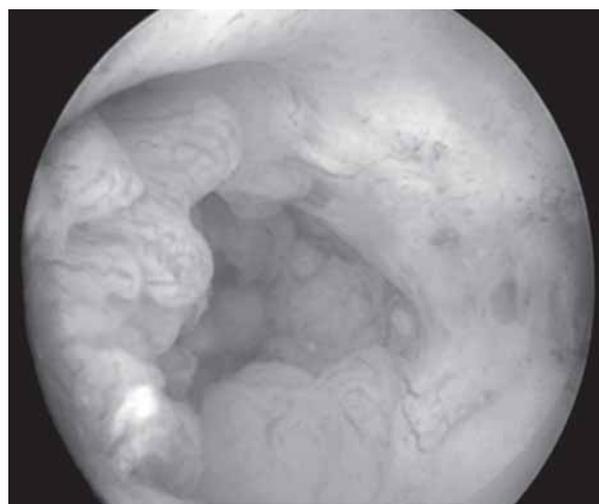


Fig. 3: Carcinoma endometrium (Courtesy: IVF and Endoscopy Centre, Ruby Hall Clinic, Pune)

OBSERVATIONS (TABLES 1 TO 5)

| Table 1 Distribution of the cases according to the parity | | |
|--|-----------------------|------------|
| Parity | No. of women with PMB | Percentage |
| Nullipara | 36 | 30 |
| Primipara | 68 | 56.6 |
| Multipara | 16 | 13.3 |

| Table 2 Correlation between co-morbid conditions and carcinoma endometrium | | |
|---|-----------------------|----------------------------------|
| Co-morbid conditions | No. of women with PMB | No. of women with Ca endometrium |
| Diabetes mellitus | 24 (20%) | 8 |
| Hypertension | 16 (13.33%) | 4 |
| Hypothyroidism | 6 (5%) | 0 |
| BMI > 30 (Obese) | 16 (13.33%) | 10 |

| Table 3 Correlation between endometrial thickness on TVS and PMB | | |
|---|-----------------------|------------|
| Endometrial thickness TVS | No. of women with PMB | Percentage |
| < 5 mm | 70 | 58.3 |
| 5-12 mm | 36 | 30 |
| > 12 mm | 14 | 11.6 |

| Table 4 Incidence of various suspicious endometrial pathologies on TVS and hysteroscopy causing PMB | | | |
|--|-------------|--------------|-------------|
| Diagnosis | TVS | Hysteroscopy | HPR |
| Atrophic endometrium | 70 (58.33%) | 78 (65%) | 80 (66.66%) |
| Endometrial hyperplasia | 6 (5%) | 8 (66.67%) | 8 (6.66%) |
| Endometrial polyp | 10 (8.3%) | 14 (11.66%) | 14 (11.6%) |
| Submucous fibroid | 2 (1.66%) | 2 (1.66%) | 2 (1.6%) |
| Carcinoma endometrium | 8 (6.66%) | 14 (11.66%) | 16 (13.3%) |

| Table 5 Sensitivity and specificity of TVS and hysteroscopy for diagnosing endometrial pathologies causing PMB | | | | |
|---|-----------------|-----------------|-----------------|-----------------|
| Diagnosis | TVS | | Hysteroscopy | |
| | Sensitivity (%) | Specificity (%) | Sensitivity (%) | Specificity (%) |
| Atrophic endometrium | 87.5 | 80 | 97.5 | 95.23 |
| Endometrial hyperplasia | 75 | 98.2 | 100 | 100 |
| Endometrial polyp | 71.4 | 96.36 | 100 | 100 |
| Submucous fibroid | 100 | 100 | 100 | 100 |
| Carcinoma endometrium | 50 | 92.8 | 87.5 | 98.1 |

DISCUSSION

Even a single episode of postmenopausal vaginal bleeding can be the sole manifestation of underlying endometrial cancer, hence needs thorough evaluation.

Reports in the literature indicate that curettage alone with endometrial biopsy techniques carry false-negative rates between 2 and 6%, as curettage is a blind procedure and approximately 60% of curettage procedures, only half of the uterine cavity is curette. TVS carries a false-negative rate of 3%. The fact that curettage operations have limitations in the diagnosis of endometrial polyp (Fig. 4) and other pathologic conditions (Fig. 5) indicate the need for a minimally invasive and the most accurate method like hysteroscopy for the evaluation of the uterine cavity in women with postmenopausal bleeding.

In recent years, interest has been focused on hysteroscopy as a potential minimally invasive technique in the diagnostic work-up of women with postmenopausal bleeding as a first line investigation.³⁻⁷

In our study, women in their 50s formed a major group (i.e. 56.6%) among the subjects with postmenopausal bleeding. Five out of 15 (i.e. 33.3%) women more than 55 years of age were subsequently found to be suffering from endometrial carcinoma.

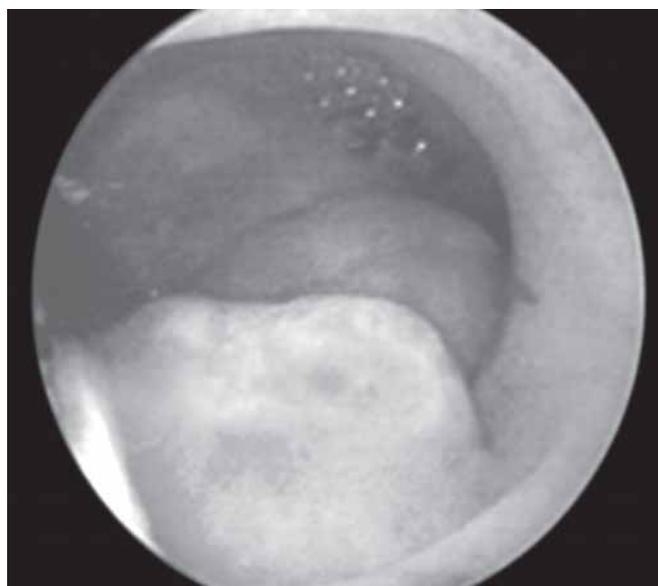


Fig. 4: Multiple endometrial polyps (Courtesy: IVF and Endoscopy Centre, Ruby Hall Clinic, Pune)

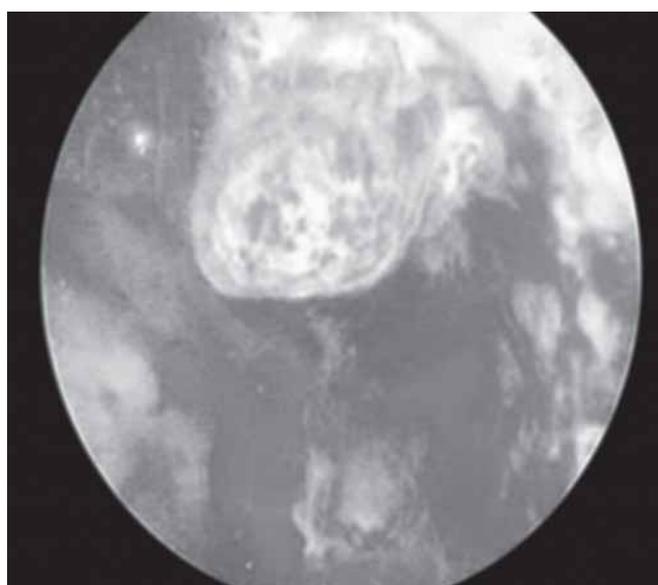


Fig. 5: Malignant growth (Courtesy: IVF and Endoscopy Centre, Ruby Hall Clinic, Pune)

Though 50% of the women were overweight, five out of eight obese women (62.5%) were subsequently diagnosed to have endometrial carcinoma. Around 56.6% of the patients were primiparas. Six out of 18 (33.3%) nulliparas were diagnosed to have endometrial carcinoma. Risk factors for endometrial cancer like obesity (62.25%), diabetes mellitus (50%), hypertension (25%) were all associated with the occurrence of endometrial carcinoma (p-value < 0.05) in our study (Table 2).

Around 58.3% of the patients with postmenopausal bleeding had a thin endometrium (< 5 mm) indicating atrophic endometrium as the commonest cause (Tables 3 and 4). Out of the seven women with ET > 12 mm, four (57.14%) were diagnosed to have endometrial carcinoma on histopathological evaluation. All these observations were comparable to most of the international studies.

The incidence of endometrial carcinoma (13.33%) was comparable to that in a previous study by Pacheco JC et al, in which incidence of endometrial cancer in patients with postmenopausal bleeding is 10 to 14%.

In our study, the sensitivity of hysteroscopy in diagnosing endometrial hyperplasia and endometrial cancer is 93.75% (Table 5), in accordance to 94.4% in a study by Ribero CT et al in November, 2007. This data was supported by many studies.^{2,8}

It is apparent that hysteroscopy is much more sensitive than TVS in the detection of focal endometrial pathology, and the specificity of hysteroscopy is more than TVS in diagnosing various endometrial conditions (98.5 and 93.3% respectively) (Table 5).

There have been cases that deserve attention. Dorum et al reported two such cases of endometrial cancer with ET of < 4 mm in their series of 100 women with postmenopausal bleeding. Philip H et al reported in their study, including 85 Jamaican women that half of the patients of endometrial carcinoma had an endometrial thickness of 3 to 4 mm. These articles at the same time, discuss the probable reason for this disparity.

An occasional patient with repeated episodes of heavy bleeding might have shed her endometrium, and hence might be showing a thin endometrium and such cases are picked up on hysteroscopy. This analysis illustrates that endometrial cancers will occasionally be missed, if transvaginal ultrasonographic measurement of endometrial thickness is used as a sole mode of investigation of postmenopausal bleeding.

CONCLUSIONS

1. Women between 50 and 55 years formed the majority (56.6%) of the patients with postmenopausal bleeding. But the incidence of carcinoma was highest in those above 55 years of age (i.e. 33.3%). But none of the postmenopausal patient upto 49 years had endometrial carcinoma.
2. Factors, such as obesity (62.25%), diabetes mellitus (50%), nulliparity (33.3%) and hypertension (25%) were

significantly associated with the occurrence of endometrial carcinoma.

3. Atrophic endometritis is the most common cause of postmenopausal bleeding (66.67%) followed by endometrial carcinoma (13.6%) and endometrial polyp (11.6%).
4. After correlating clinical diagnosis and diagnosis after investigations (TVS and hysteroscopy), hysteroscopy was found to be the most sensitive (97% vs 76% of TVS) and specific (98.66%) method for diagnosing endometrial pathologies, considering histopathology to be the gold standard for diagnosis.
5. Hysteroscopy can be considered as the simple, safe, effective and first-line gold standard method for the evaluation of the patients with postmenopausal bleeding.
6. In elderly patients who are at high risk for any invasive procedure like hysterectomy, which is effective in reducing the number of hospital visits, admissions and total costs.

Hysteroscopy is a less invasive, efficient and highly sensitive tool for screening women with postmenopausal vaginal bleeding.

Though a larger study with bigger sample size is definitely recommended, from our study, it can be concluded that hysteroscopy should be considered as a first-line modality in the management of the patient with postmenopausal bleeding.

REFERENCES

1. Kaiser Daily Health Policy Report. January 2007.
2. Riberto CT. Sao Paulo Med Journal 1 Nov 2007;125(6):338-42.
3. Bradford Royal Infirmary September 2007;13(3):132-34.
4. van Dongen H BJOG. June 2007;114(6):664-75.
5. Guruwadayarhalli B. Menopause Int 1 September 2007;13(3):132-34.
6. Spicer JM. Gynecol Obstet Invest 1 January-2006;61(3):174-78.
7. Metello J. Acta Med Port 1 September 2008;21(5):483-88.
8. Angioni S, Loddo A, Milano F, Piras B, Minerba L, Melis GB. J Minim Invasive Gynecol Jan-Feb 2008;15(1):87-91.