



## Interpretation of Genital Tract Bleeding and Increased Endometrial Thickness in Postmenopausal Women: A Clinical and Histopathological Study

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### ABSTRACT

**Background and aim:** The present study aims to the causes of genital tract bleeding and increased endometrial thickness in postmenopausal women, their clinical presentation, and histopathological changes.

**Material and methods:** A Prospective study performed over one and half years from January 2021 to June 2022, including 70 postmenopausal women coming to the gynaecology out patient department (OPD) with complaints of genital tract bleeding and having increased endometrial thickness in ultrasound (USG) have taken into the study. Clinical examination, blood investigations, radiological imaging, pap smear, and endometrial biopsy were done.

**Results:** Among the 70 study subjects, the most common clinical presentation was postmenopausal bleeding in 63 (90%) women, and the commonest USG finding was the increased endometrial thickness > 4 mm in 56 (80%) women. The histopathological analysis showed proliferative endometrium in 21 (30.5%) women, secretory endometrium in 9 (12.9%) women, endocervicitis in 8 (11.5%) women, atrophic endometrium in 7 (10%) women, cystic glandular hyperplasia in 6 (8.6%) women, cervical malignancy in 6 (8.6%) women, endometrial hyperplasia with atypia in 5 (7.2%) women, endometrial polyp in 3 (4.2%) women and endometrial malignancy in 3 (4.2%) women and cervical polyp in 2 (2.8%) women.

**Conclusions:** Genital tract bleeding and increased endometrial thickness are abnormal findings in postmenopausal women, which need a thorough evaluation using history taking, clinical examination, and investigations to eliminate the possibility of malignancy as early as possible.

### 1. Introduction

Menopause is the cessation of menstruation for more than one year due to loss of ovarian activity.<sup>[1]</sup> Bleeding from the genital tract more than one year after the last menstrual period in a woman who is not on hormone replacement therapy can be considered postmenopausal bleeding.<sup>[2]</sup> The endometrium is expected to get atrophic in menopausal women. If the thickness of the endometrium is more than 4 mm in ultrasound, which can be considered abnormal.<sup>[3]</sup> Usually, around 5% of women visit Gynaecology OPD (Out Patient Department) with a complaint of postmenopausal bleeding.<sup>[4]</sup> Around 17% of the women can have thick endometrial echoes in Ultrasound.<sup>[5]</sup> Postmenopausal bleeding is a common presenting symptom in cervical malignancy, and postmenopausal bleeding, along with increased endometrial thickness, is usually an early detected feature of endometrial malignancy. Whenever a postmenopausal woman presents with these features, she needs a thorough evaluation by detailed history taking, clinical

examination, transvaginal ultrasound, blood investigations to rule out medical disorders causing bleeding, pap smear, and endometrial biopsy. Moreover, women considered to have a high risk for endometrial carcinoma like nulligravida, obese, diabetic, taking oestrogen supplements, with a prolonged reproductive period, with multiple sexual partners, need more extensive evaluation.<sup>[6]</sup> However, the incidence of endometrial malignancy is less among women presenting with postmenopausal bleeding in India. The early detection of endometrial carcinoma can increase the five-year survival rate to 96%.<sup>[7]</sup> Every possible effort should be made to rule out endometrial carcinoma at the first visit in a woman presenting with postmenopausal bleeding and/ or with increased endometrial thickness. This study was conducted to evaluate the causes of genital tract bleeding and increased endometrial thickness in postmenopausal women and their significance in

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diagnosing malignancies with the support of clinical examination, Ultrasound, and histopathological evaluation.

## 2. Material and methods

This prospective study included 70 postmenopausal women who came to obstetrics and gynecology OPD between January 2021 to June 2022 with complaints of postmenopausal bleeding and those who were detected to have increased endometrial thickness in ultrasound incidentally. The Institutional ethical committee team has approved this study with registration number: 02/IEC/SBMH&RI/2021. Data was collected from the postmenopausal women willing to be subject after filling out informed consent forms. Women aged 40 years or more with their last period of menstruation at least one year back were considered eligible for the study. Patients who had induced menopause due to surgery, radiotherapy, or chemotherapy were excluded from the study. The patients' detailed history was taken, including their name, age, marital status, obstetric history, and address. A detailed history is taken regarding genital tract bleeding, including the time of onset of the bleeding after menopause, duration, frequency, and amount of the bleeding. Also, a history of complaints of vaginal discharge, mass per abdomen or vaginam, post-coital bleeding, current weight, or appetite changes was recorded. Past medical history, including any medical comorbidities like diabetes mellitus, hypertension, tuberculosis, and liver diseases. Moreover, any history of previous surgeries was verified. Drug history, including any hormone replacement therapy, tamoxifen therapy, or usage of anticoagulants, was noted. A general physical examination was done, including height, weight, body mass index (BMI), and any specific marks on the skin, ruling out pallor

and icterus. Gynecological examinations, including abdominal, breast examination, per speculum examination, and bimanual pelvic examinations, were done to assess the position and appearance of the cervix, to find out the position, size, and mobility of the uterus, and to rule out any adnexal masses. Ultrasound, preferably transvaginal, was done to access details of the reproductive organs, especially endometrial thickness. Other required investigations include a complete blood picture, coagulation profile, random blood sugar, renal function tests, thyroid profile, urine routine, and electrocardiogram(ECG) was done. After taking fitness for anesthesia from an anesthesiologist and written informed consent from the patient, a pap smear, dilatation, and curettage were performed under anesthesia. Pap smears were sent for cytology and endometrial biopsies for histopathological examination to the pathology department. The data were analyzed through Statistical Package for Social Sciences (SPSS) version 26, and the results were recorded.

## 3. Results

In this study, 110 participants presenting with postmenopausal bleeding after one year of absence of menstrual periods are assessed for eligibility for the study. Among them, 70 (64%) women with age above 40 years and attaining menopause naturally are recruited and analyzed in the study. Moreover, 40 (36%) Women were excluded. Among them, 9 (8%) women were aged less than 40 years, and 31 (28%) women had induced menopause due to surgery, Radiotherapy, or Chemotherapy. Fig. 1. shows the details of these inclusion and exclusion criteria.

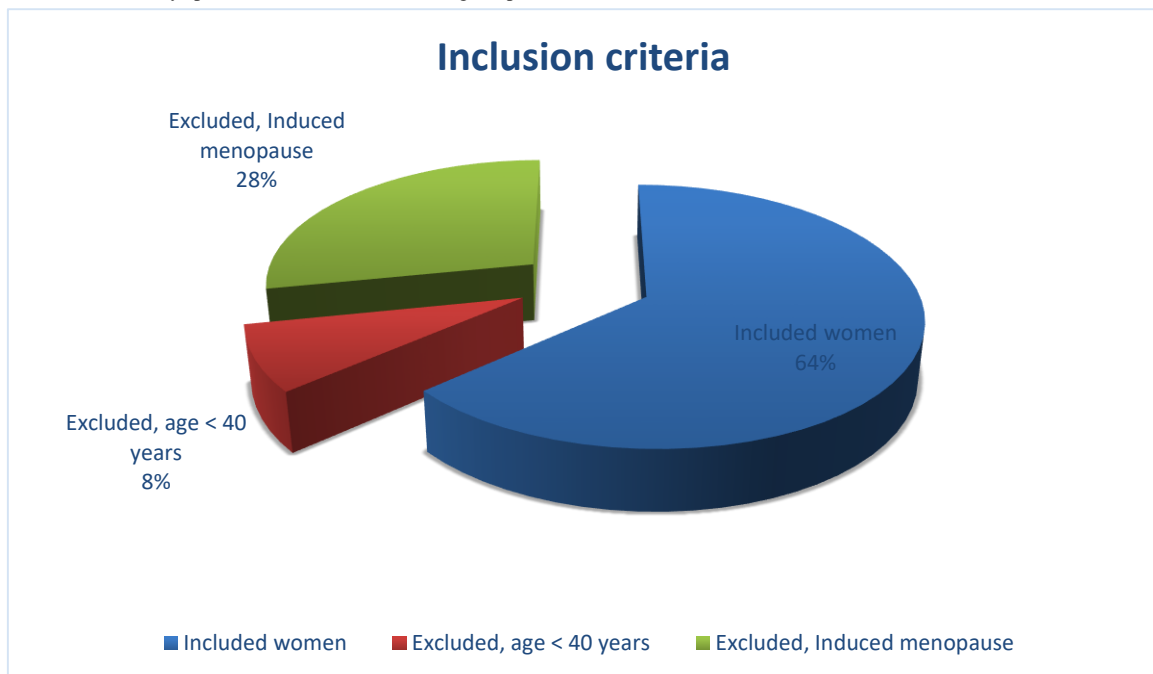


Fig. 1. Inclusion and Exclusion criteria of participants.

The presenting symptoms among the study subjects were Postmenopausal Bleeding (PMB) with increased endometrial thickness in Ultrasound (USG), PMB without increased endometrial thickness, and

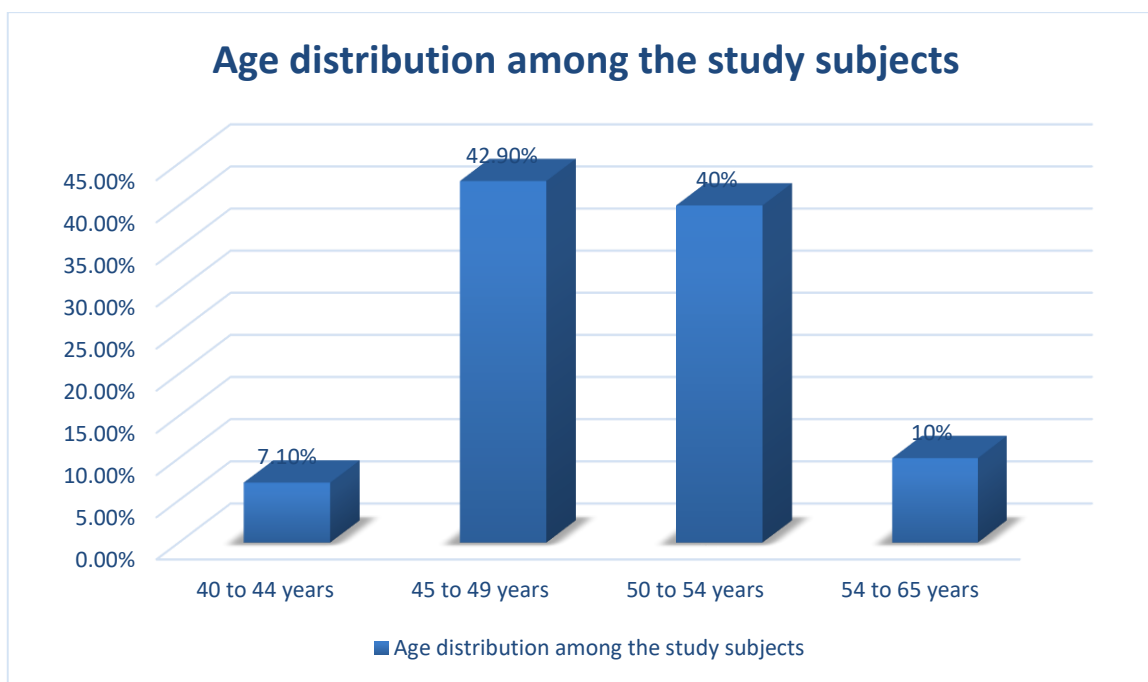
increased endometrial thickness without PMB. Table 1 shows the distribution of these symptoms among the study subjects.

**Table 1. Distribution of symptoms among the 70 study subjects.**

Symptoms	No. of Study Subjects
Postmenopausal bleeding (PMB)	63(90%)
Increased endometrial thickness	56(80%)
PMB with increased endometrial thickness	48(68.6%)
PMB without increased endometrial thickness	15(21.4%)
Increased endometrial thickness without PMB	8(11.4%)

Among the 70 postmenopausal women, 63 (90%) women presented with genital tract bleeding. Moreover, 56 (80%) women had increased endometrial thickness. Postmenopausal bleeding with increased endometrial thickness was seen in 48(68.6%) women. Postmenopausal bleeding without increased endometrial thickness was seen in 15(21.4%) women. In 8(11.4%) women, increased endometrial thickness without postmenopausal bleeding. Among

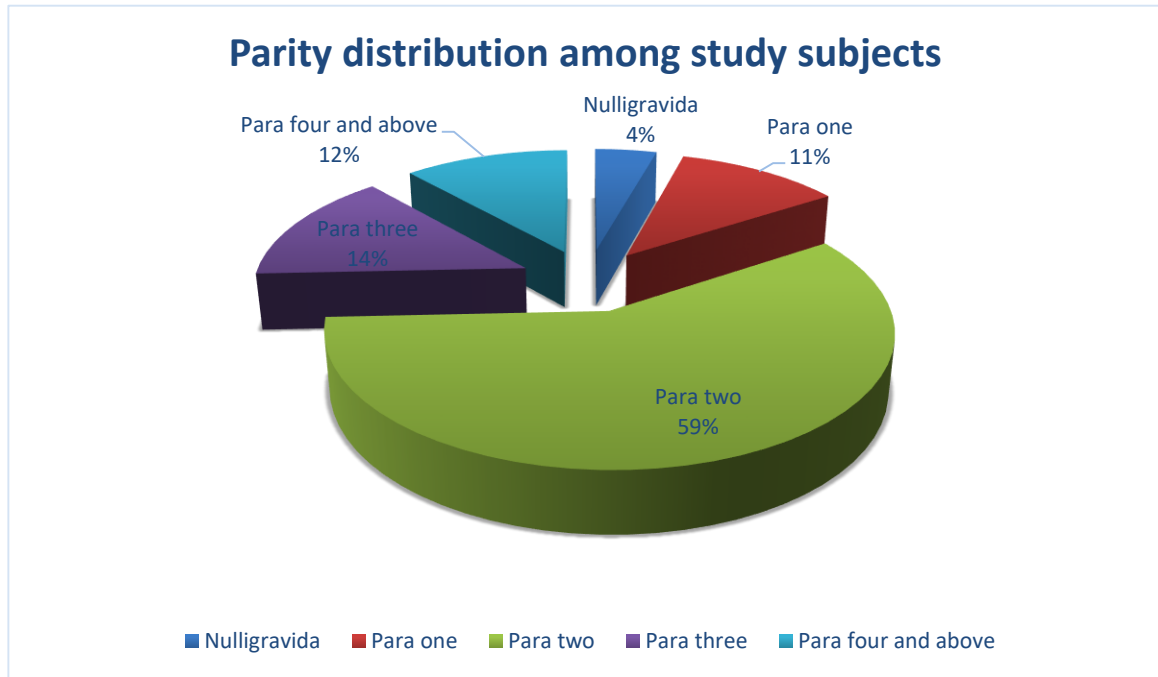
the 70 postmenopausal women in the study group, the age distribution was between 40 to 65 years, with a mean age was 48.9 years. Fig. 2. shows the age distribution among the study subjects. Among the 70 women, 5 women (7.1%) were aged between 40 to 44 years, 30 women (42.9%) were aged between 45 to 49 years, 28 women (40%) were aged between 50 to 54 years, 7 women (10%) were aged between 54 to 65 years.



**Fig. 2. Distribution of age among the 70 study subjects.**

The study group included postmenopausal women with different parity, nulligravida to grand multipara. The parity distribution among the study subjects is given in Fig. 3. Among the 70 women, 3 (4.3%) were nulligravida,

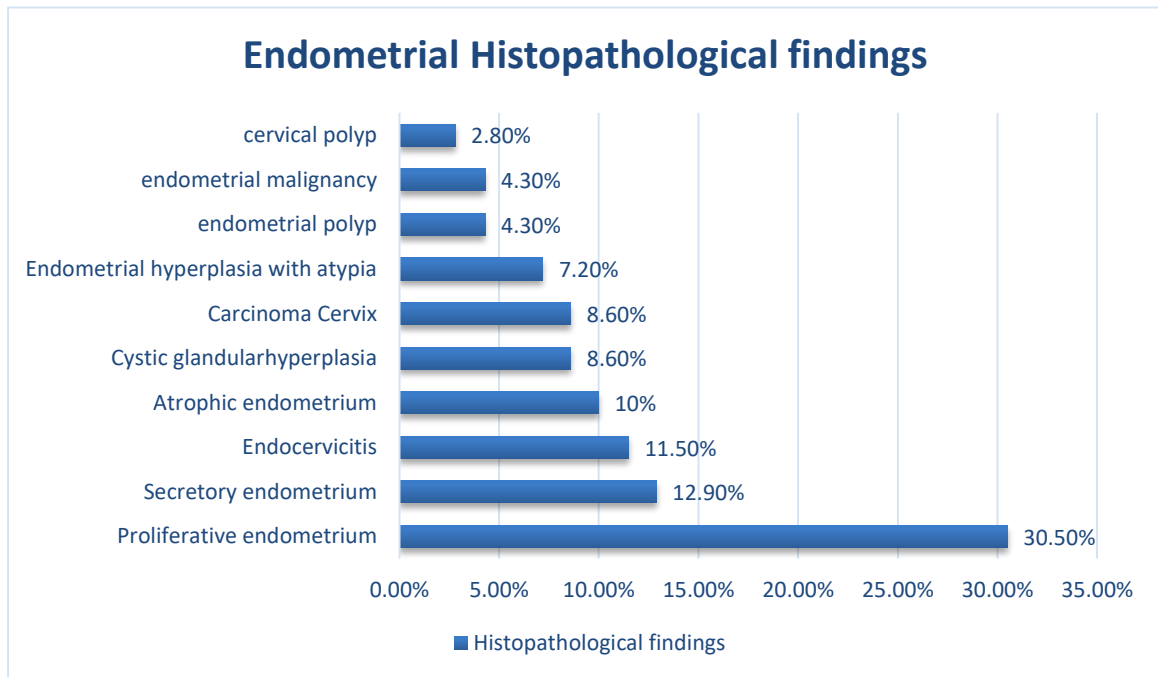
8 (11.5%) were para one, 41 (58.5%) were para two, 10 (14.2%) were para three, and 8 (11.5%) were para four and above.



**Fig. 3. The parity distribution among the study subjects.**

The endometrial and cervical histopathological findings of 70 study subjects ranged from benign causes like proliferative or secretory or atrophic endometrium, cystic glandular hyperplasia, endometrial and cervical polyp to cervical and endometrial malignancies. The distribution of these histopathological findings is shown in Fig. 4. Among the 70 study subjects, 21 (30%) women had proliferative endometrium, 9 (12.9%) women had a

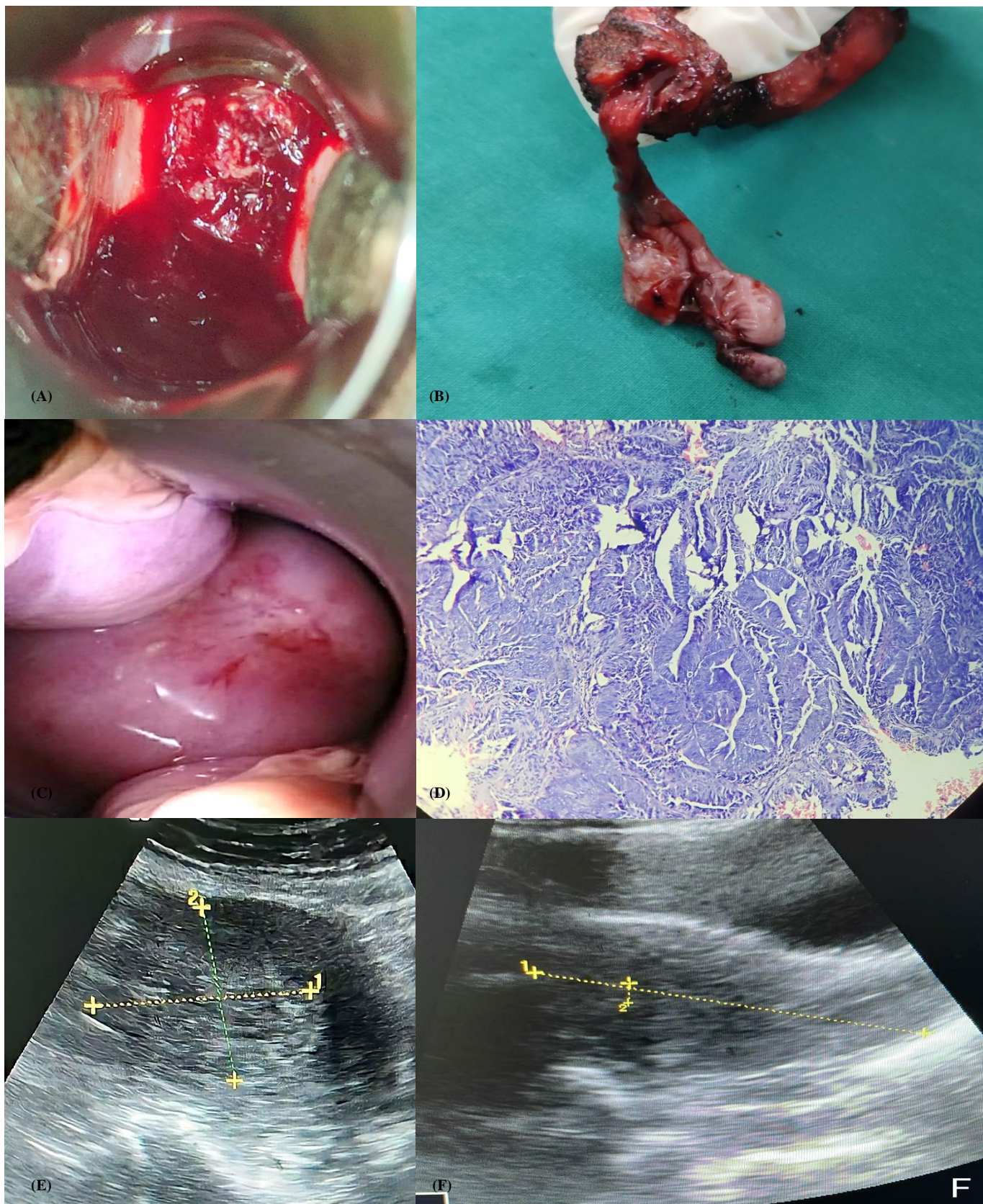
secretory endometrium, 8 (11.5%) had endocervicitis, 7(10%) had atrophic endometrium, 6(8.6%) had cystic glandular hyperplasia, 6(8.6%) had carcinoma cervix, 5 (7.2%) had endometrial hyperplasia with atypia, 3 (4.2%) had an endometrial polyp, 3(4.2%) had endometrial malignancy, and 2 (2.8%) had a cervical polyp. Overall, 9 (12.8%) women had a malignancy.

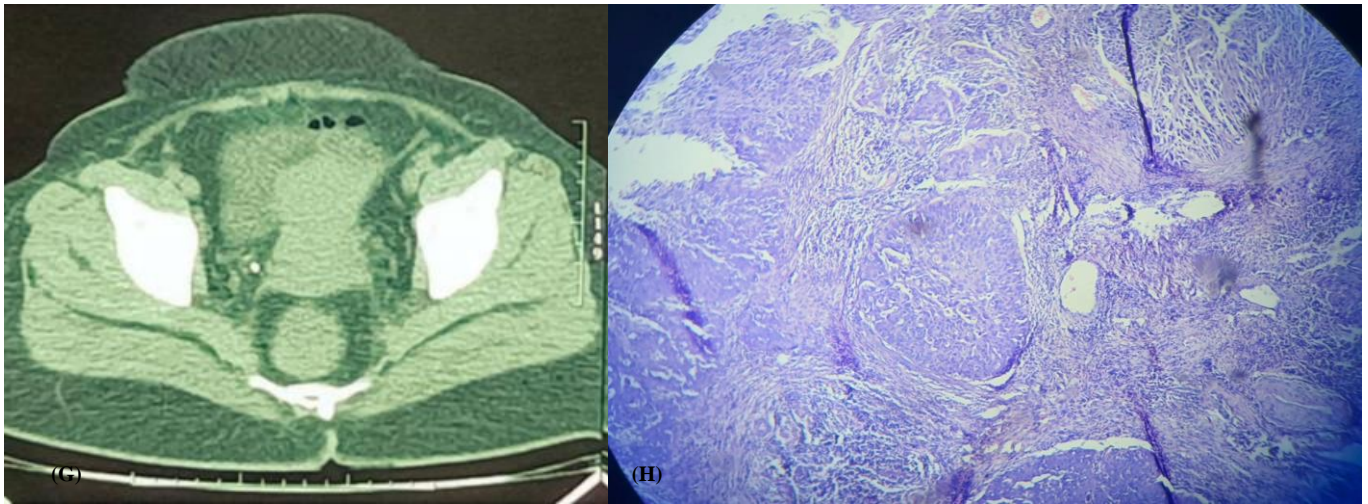


**Fig. 4. The endometrial histopathological findings of study subjects.**

Fig. 5. shows clinical, histopathological, and radiological pictures of different causes of postmenopausal bleeding. Picture A shows carcinoma of the cervix, Picture B shows endocervical polyp in post hysterectomy specimen, Picture C shows endocervicitis, Picture D shows the histopathological appearance of adenocarcinoma of the endometrium, Picture

E shows endometrial hyperplasia, Picture F is showing atrophic endometrium, Picture G is showing carcinoma cervix infiltrating bladder base, the patient presented with hematuria along with genital tract bleeding, Picture H is showing the histopathological appearance of carcinoma cervix.





**Fig. 5. (A) Carcinoma of the cervix, (B) Endocervical polyp, (C) Endocervicitis, (D) The histopathological appearance of adenocarcinoma of the endometrium, (E) Endometrial hyperplasia, (F) Atrophic endometrium, (G) Carcinoma cervix infiltrating bladder base, (H) Histopathological appearance of carcinoma cervix.**

#### 4. Discussion

Since menopause is regarded as a complete cessation of menstruation, getting bleeding after menopause is considered a startling sign, as sometimes this can indicate malignancies of the cervix or endometrium, a severe and in-depth assessment is necessary to discover the exact cause as soon as possible. Moreover, increased endometrial thickness in ultrasound is also an unusual presentation in postmenopausal women, which may also be a sign of endometrial malignancy and needs thoroughgoing evaluation. In the present study, the study group included 70 women with symptoms of postmenopausal bleeding and/or with increased endometrial thickness. Whereas the study of Sousa et al.<sup>[8]</sup> had 88 women, Sreelatha et al.<sup>[9]</sup> had 50 women, and Kothapally et al.<sup>[10]</sup> included 30 women. The age group in the present study is 40 to 65 years, with a mean age of 48.9 Years. Whereas the age group in Sousa et al.<sup>[8]</sup> was 43 to 82 years with a mean age of 62.1+/-8.9 years, the study of Sreelatha et al.<sup>[9]</sup> had an age group of 40 to 60 years with a mean age of 51.4 years. The age group of the Kothapally et al.<sup>[10]</sup> study was between 50 to 60 years. The study groups of Sousa et al. and Wong et al.<sup>[11]</sup> varied between 42 to 84 years, with mean age comparatively greater than in Eastern population studies. In our study, noncancerous conditions were noted in 57 (81.4%) women like proliferative endometrium was seen in 21 (30%) of women, secretory endometrium in 9 (12.9%) women, endocervicitis in 8 (11.5%) women, atrophic endometrium was seen in 7 (10%) of women, cystic glandular hyperplasia was seen in 6 (8.6%) women, the endometrial polyp was seen in 3 (4.2%) women and the cervical polyp was in 2 (2.8%) women. At the same time, premalignant conditions like endometrial hyperplasia with atypia were seen in 5 (7.2%) women. Overall, malignancy was noted in 9 women (12.8%). Among them, carcinoma cervix was seen in 6 (8.6%) and endometrial malignancy in 3 (4.2%) women. In studies of Sousa et al.<sup>[8]</sup> and Sreelatha et al.<sup>[9]</sup> and Kothapally et al.<sup>[10]</sup> and Philip et al.<sup>[12]</sup> benign lesions of the endometrium were seen in 48%, 68%, 83.6% and 62.9% of study subjects, respectively. In these studies, premalignant lesions were observed in 7%, 8%, 1.4%, and 6.6% of study subjects. In contrast, malignant conditions were seen in 30%, 14%, 13%, and 16.6% of the study subjects. Increased endometrial thickness was our study's most common ultrasound finding, which was seen in 56 (80%) study subjects. In studies by Sousa et al.<sup>[8]</sup> and Kothapally et al.<sup>[10]</sup> and Aravazhi et al.<sup>[13]</sup> increased endometrial thickness was seen in 62%, 65.2%, and 80%, respectively. In the study of Philip et al.<sup>[12]</sup>

it was shown that there might not be a significant correlation between the increased endometrial thickness and endometrial cancer as people with endometrial thickness of 3 to 4 mm were also diagnosed to have endometrial cancer during the histopathological examination. In a study by Wong et al.<sup>[11]</sup> in the case of an endometrial thickness of less than 4 mm, follow-up with repeat ultrasonography is advised unless there is continuous postmenopausal bleeding. Production of oestrogen in peripheral fatty tissue can cause postmenopausal bleeding by forming proliferative endometrium, according to Ding et al.<sup>[14]</sup> studies. In our study, among the malignant conditions, carcinoma of the cervix was seen in 8.6% of the cases, and endometrial malignancy in 4.2% of the cases, which indicates that along with excluding endometrial causes, excluding the cervical pathologies are also important in the evaluation of postmenopausal bleeding. Limitations of this study are that menopause due to hysterectomy, radiotherapy, and chemotherapy are excluded, and the study group is relatively small. Even after that, the conclusions drawn from this study strengthen the majority opinion that genital tract bleeding and increased endometrial thickness in postmenopausal women should be dealt with careful evaluation to diagnose the malignancies at the earliest so that the survival rate can be increased.

#### 5. Conclusion

Genital tract bleeding and increased endometrium thickness are abnormal findings in postmenopausal women and should be considered alarming regardless of the quantity and frequency. As the incidence of endometrial cancer is around 4.3 in 1,00,000, and that of cervical malignancy is around 18.3 in 1,00,000 in India, every possible effort should be made to diagnose genital cancers at the earliest so that deaths resulting from these malignancies can be prevented. Adopting screening methods like a pap smear, colposcopy, ultrasound, hysteroscopy, and endometrial biopsy can help in identify these cancers as early as possible and treating them effectively.

#### Conflict of Interest

The authors declared that there is no conflict of interest.

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