Abstract
Endometrial histopathological study of one hundred and fifty cases presented with post-menopausal bleeding to the Gynaecological Department in Baghdad Teaching Hospital from the period of Jan., 1991 to December, 1993.
All patients underwent examination under anaesthesia, dilatation and fractional curettage.
The most frequent histopathological findings were atrophic endometrium 30.7 percent, followed by proliferative endometrium 26 percent. Hyperplastic endometrium was detected in 23.3 percent and endometrial polyp in 12 percent.
Endometrial cancer was found in twelve cases (8 percent), eight of them adenocarcinoma 5.3 percent, four cases were uterine sarcoma 2.6 percent.
The incidence of malignancy showed a definite rise with advancing age, increasing amount and duration of bleeding, and enlarged uterus. Endometrial cancer was associated in 41.7 percent of patients with obesity, diabetes mellitus, or hypertension.

Introduction
Cessation of menstrual bleeding is the cardinal symptom of the menopause. Post menopausal bleeding is considered an important and alarming symptom, both to the patient and physician. In early reports of 1940 endometrial carcinoma was diagnosed in 53-90% of post menopausal bleeding. [1-3]
The awareness of the serious implications of post menopausal bleeding among patients and physician resulted in attempts at earlier detection of malignancy. The availability of medical facilities encouraged more women with this complaint to seek medical advice and investigation to find the cause of postmenopausal bleeding. Thus, the recent studies have suggested prevalence of endometrial cancer of less than 10% [4,5].
One fifty women who present for the first time-with post menopausal bleeding underwent a fractional dilatation and curettage were studied to investigate the endometrial histology in relation to post menopausal bleeding.

Definition
Most authorities define post menopausal bleeding as bleeding from the genital tract
after one year amenorrhea [6-8] still others reduce the period to six months [7].

The mean age at natural menopause was 51 years [9].

Endometrial Cancer and it's Precursors

Any approach to the control of endometrial cancer must include a consideration of the individual at risk; the older age, the obese, the infertile and those with medical disease [10].

Old age is a constant risk indicator for uterine neoplasia, the mean age is 61.1 years and about 25 percent of cases are diagnosed before menopause [11]. Obesity is one of the highest relative risk, overweight women develop endometrial cancer three times the frequency of normal weight women (up to 50 pounds), above 50 pounds the frequency increased ten times. This is due to increased peripheral conversion of androstedione to estrone in the fat tissue [11].

Nulligravida’s risk for endometrial carcinoma is three times than that for women have had five children [11].

* Hypertension

25% of patients with endometrial carcinoma have hypertension [11].

* Diabetes mellitus

50% of patients with endometrial carcinoma have abnormal glucose tolerance curves, and 10-30% is frankly diabetic [13].

It’s associated with increased risk of endometrial carcinoma, women reach menopause after the age of 52 years have 2.4 times greater than women who reach menopause before 49 years [11].

Endometrial Carcinoma

Carcinoma of the endometrium typically occurs in elderly patients; approximately 80% are postmenopausal at the time of diagnosis. Patients at high risk include the obese infertile, diabetic and hypertensive; long standing estrogen users [14], and those with complex hyperplasia which has shown to progress to endometrial cancer in 10-30% of cases if left untreated, is also associated with postmenopausal bleeding which is most common symptom of endometrial carcinoma [15].

The reported prevalence of endometrial cancer among women who present with postmenopausal bleeding is 20% [10,16]. However, recent studies have suggested a prevalence of less than 10% [4,5]. The wide variation in observed prevalence may suggest that the populations studied have different underlying risks, either by virtue of specific patient, characteristics or by the duration and amount of bleeding or that the threshold to evaluate, patients differs among groups of physicians [15].

Approximately 75% of endometrial adenocarcinomas are clinically confined to the uterus at the time of diagnosis.

Endometrioid adenocarcinoma is classified as adenocarcinoma if there are no other specific features. This is the most common. Subtype accounting for up to 70% of all endometrial cancers. It occurs at a slightly older age than adenocanthoma does.

- Adenocanthoma is adenocarcinoma with benign-appearing squamous epithelium. The second most frequently diagnosed. Subtype, it is associated with the youngest age at the time of diagnosis and has the most favorable 5 years survival rate.

- Adenosequamous carcinoma, the third most commonly diagnosed subtype, is defined as adenocarcinoma with malignant appearing squamous epithelium. Because it has a greater percentage of grade III differentiation (52%) and significantly increased percentage of myometrial invasion (38%), it has significantly lower five years survival rate.

- Papillary serous adenocarcinoma: adenocarcinoma with a papillary pattern of stalks and multiple arborizations without a significant clear cell component. This subtype has recently been described as behaving similarly to ovarian serous cystadenocarcinoma in its propensity to intraperitoneal dissemination.

- Clear cell adenocarcinoma, large polyhydral clear cells are found in more
than 30% of the tumor, this is the least frequently diagnosed, is seen in the oldest patient population, and is associated with the poorest survival rate [17].

- Microscopically adenocarcinoma divided into well-differentiated (Grade I) which constitute 50%, moderately differentiated (Grade II) 35%, and poorly differentiated (Grade III) 15%. The non neoplastic endometrium harbouring adenocarcinoma is often hyperplastic, sometimes atrophic and exceptionally does exhibit a normal proliferative or secretory pattern [14].

**Material and Methods**

During 36 months period, from January 1991 to December 1993; 150 patients with PMB (who had more than one year amenorrhea and no history of estrogere use), underwent diagnostic fractional curettage under General Anaesthesia in the Gynaecologic Department of Baghdad Teaching Hospital.

1. All cases were interviewed for personal, socio-economic and medical history, which include the followings:
   - Present age.
   - Menopausal age.
   - Gravida and parity.
   - Interval between last menstrual period and onset of PMB.
   - Amount and duration of bleeding.
   - Associated medical conditions.

2. Examination:
   - Blood pressure and body weight.
   - Pelvic examination is performed to assess the position, axis, uterine size and the presence or absence of any adnexial mass.

3. Investigations:
   - Complete blood picture.
   - E.S.R.
   - F.B.S.
   - Blood urea and serum creatinine.
   - CXR and E.C.G.

4. Examination under general anaesthesia and fractional curettage:
   - Anaesthesia: General with spontaneous respiration.
   - Position: Lithotomy.
   - The vulva and vagina were cleansed by hibitane solution and draped.
   - Prior to endometrial biopsy, a pelvic examination is performed to assess the position, axis, and volume of the uterus and adnexia.
   - A cervical smear is obtained before pelvic examination to rule out the possibility of cervical neoplasia not visible to the naked eye.
   - The endocervical canal is circumferentially curetted with sharp, short strokes twice and the sample is obtained and fixed by 10% Formalin.
   - The depth of uterine cavity measured by uterine sounding.
   - Following endocervical curette, circumferential sampling of the endometrial cavity is carried out from the fundus to the isthmus and the specimen is collected and fixed in the same manner and sent for histopathological study after dilatation of the cervix.

5. All histopathological slides were reviewed by the same pathologist in the Pathological Department in Baghdad Teaching Hospital.

Endometrial histopathology was divided into:

- Group I: Atrophic endometrium.
- Group II: Proliferative endometrium.
- Group III: Hyperplastic endometrium.
- Group IV: Endometrial polyp.
- Group V: Endometrial cancer.

**Results**

As shown in Table (1), endometrial cancer was found to involve 8% of the entire study group. Eight of which were adenocarcinoma, uterine sarcoma in four (three cases were mixed mesodermal malignant tumour and one case leiomyosarcoma). The histological pattern was well differentiated in six, moderately differentiated in four and poorly differentiated in two cases.
Hyperplastic endometrium was found in thirty-five case (23.3%), nineteen (54.2%) were mild, nine (25.7%) moderate and severe in seven patients (20%). Atrophic endometrium was seen in 46 cases (30.7%) proliferative endometrium in 39 (26%); and 18 (12%) were benign endometrial polyp. Endocervical curettage disclosed 13 patients (8.6%) with cervicitis and 8 cases (5.3%) with cervical polyps, no other pathological conditions were revealed by the cervical sampling. The age of patients varied from 45 to 84 years, with a mean of 57.6 years at the time of diagnostic dilatation and curettage. The slightly older mean age was observed is endometrial cancer group compared to other histopathological groups and onset of vaginal bleeding in endometrial cancer (11.1 years) was longer than other groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>Histology</th>
<th>No.</th>
<th>%</th>
<th>Mean age</th>
<th>Interval between menopause and PMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Atrophic endometrium</td>
<td>46</td>
<td>30.7</td>
<td>(50-80)</td>
<td>60.5</td>
</tr>
<tr>
<td>II</td>
<td>Proliferative endometrium</td>
<td>39</td>
<td>26</td>
<td>(45-80)</td>
<td>56.4</td>
</tr>
<tr>
<td>III</td>
<td>Hyperplastic endometrium</td>
<td>35</td>
<td>23.3</td>
<td>(50-84)</td>
<td>56.8</td>
</tr>
<tr>
<td>IV</td>
<td>Endometrial polyp</td>
<td>18</td>
<td>12</td>
<td>(45-65)</td>
<td>57.3</td>
</tr>
<tr>
<td>V</td>
<td>Endometrial cancer</td>
<td>12</td>
<td>8</td>
<td>(52-75)</td>
<td>61.7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 The frequency distribution of patient according to their age and histopathological findings

Type of bleeding was studied by amount and duration. The amount (Table 2) was divided into spotting, moderate flow and heavy flow (associated with clots). The duration (Table 3) was divided into less than one month, 1 - 2 months 3 - 5 months, and more than 6 months. 75% of patients with atrophic or proliferative endometrium were found to have rather scanty flow with less than one month duration. Whereas 71.4%, 72.2% and 66.7% of patients with hyperplastic endometrium, endometrial polyps and endometrial cancer were found to have moderate bleeding. 25%, 20% of endometrial cancer and hyperplastic endometrium were associated with heavy bleeding. 25% and 5.7% of the above two groups were found to have bleeding of more than 6 months. The common medical problems associated with PMB in our study were hypertension, diabetes mellitus, obesity and their combination. 41.7% of patients with endometrial cancer presented with one of the above problems. Although nearly 25% of the other groups had given a history of hypertension on admission. Table 4 showed the depth of the uterine cavity in each group, which were taken at the external cervical as using uterine sound at the time, of fractional curettage under anaesthesia. 74% of patients with atrophic and proliferative endometrium had a uterine depth of 7 - 8 cm. Endometrial cancer group had a uterine depth of more than 8 cm in (83.3%). While 5% of proliferative and atrophic endometrium had a uterine depth of more than 8 cm. Table 5 showed the parity which covered wide range from 0 - 12 with an average of 4.
### Table 2  The frequency distribution of cases according to the amount of bleeding subjected by the patients

<table>
<thead>
<tr>
<th>Histology</th>
<th>Spotting</th>
<th></th>
<th>Moderate</th>
<th></th>
<th>Heavy</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Atrophic endometrium</td>
<td>35</td>
<td>76</td>
<td>10</td>
<td>7.2</td>
<td>1</td>
<td>0.72</td>
<td>46</td>
</tr>
<tr>
<td>Proliferative endometrium</td>
<td>30</td>
<td>75</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>1.4</td>
<td>39</td>
</tr>
<tr>
<td>Hyperplastic endometrium</td>
<td>3</td>
<td>8.6</td>
<td>25</td>
<td>71.4</td>
<td>7</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>Endometrial polyp</td>
<td>2</td>
<td>1.4</td>
<td>13</td>
<td>72.2</td>
<td>3</td>
<td>2.1</td>
<td>18</td>
</tr>
<tr>
<td>Endometrial cancer</td>
<td>1</td>
<td>8.3</td>
<td>8</td>
<td>66.7</td>
<td>3</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>63</td>
<td>16</td>
<td>16</td>
<td>150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3  The frequency distribution of patients regarding the duration of bleeding

<table>
<thead>
<tr>
<th>Histology</th>
<th>&lt; 1 month</th>
<th></th>
<th>1-2 months</th>
<th></th>
<th>3-5 months</th>
<th></th>
<th>&gt; 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Atrophic endometrium</td>
<td>36</td>
<td>78.2</td>
<td>7</td>
<td>15.2</td>
<td>3</td>
<td>6.5</td>
<td>-</td>
</tr>
<tr>
<td>Proliferative endometrium</td>
<td>31</td>
<td>79.4</td>
<td>5</td>
<td>12.8</td>
<td>2</td>
<td>5.1</td>
<td>1</td>
</tr>
<tr>
<td>Hyperplastic endometrium</td>
<td>7</td>
<td>20</td>
<td>23</td>
<td>65.7</td>
<td>3</td>
<td>8.5</td>
<td>2</td>
</tr>
<tr>
<td>Endometrial polyp</td>
<td>14</td>
<td>77.7</td>
<td>2</td>
<td>11.1</td>
<td>2</td>
<td>11.1</td>
<td>-</td>
</tr>
<tr>
<td>Endometrial cancer</td>
<td>2</td>
<td>16.6</td>
<td>5</td>
<td>41.6</td>
<td>2</td>
<td>16.6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>42</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4 Uterine size by depth of the uterine cavity in patient with PMB

<table>
<thead>
<tr>
<th>Group</th>
<th>Histology</th>
<th>4 – 6 cm</th>
<th></th>
<th>7 – 8 cm</th>
<th></th>
<th>&lt; 8 cm</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>I</td>
<td>Atrophic endometrium</td>
<td>11</td>
<td>23.9</td>
<td>34</td>
<td>73.9</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>II</td>
<td>Proliferative</td>
<td>8</td>
<td>20.5</td>
<td>29</td>
<td>74.3</td>
<td>2</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>endometrium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Hyperplastic</td>
<td>8</td>
<td>22.8</td>
<td>22</td>
<td>62.8</td>
<td>5</td>
<td>14.2</td>
</tr>
<tr>
<td></td>
<td>endometrium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Endometrial polyp</td>
<td>6</td>
<td>33.3</td>
<td>10</td>
<td>55.5</td>
<td>2</td>
<td>11.1</td>
</tr>
<tr>
<td>V</td>
<td>Endometrial cancer</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>16.6</td>
<td>10</td>
<td>83.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33</td>
<td>97</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 Parity in relation to the lesion in patients with PMB

<table>
<thead>
<tr>
<th>Histology</th>
<th>0</th>
<th>1 – 3</th>
<th>4 – 6</th>
<th>&gt; 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrophic endometrium</td>
<td>4</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>Proliferative endometrium</td>
<td>8</td>
<td>4</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Hyperplastic endometrium</td>
<td>7</td>
<td>5</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Endometrial polyp</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Endometrial cancer</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>22</td>
<td>41</td>
<td>58</td>
</tr>
</tbody>
</table>

Discussion
The primary goal in the management of PMB is to ensure an absence of malignancy and further to identify and treat high risk groups.

The gynaecologist who investigates PMB must always be aware of non-uterine causes for vaginal bleeding, such as vulvitis, atrophic vaginitis; cervical pathology and rarely, ovarian and tubal cancer. In this study, we confined ourselves to uterine causes only.

It appears that when a patient has PMB and the uterus is larger on palpation than usual post menopausal uterus, there is greater incidence of abnormal endometrial pathology.

Data from the past fifty years showed that the incidence of carcinoma of the endometrium in patients with PMB ranges from (3.7 - 17.9) % [8].

In our study we found uterine malignancy in 8 percent which goes with other studies as Miyazawa [18]. The incidence in our series may be attributed to the absence of estrogen therapy in our patients.

Patients with endometrial hyperplasia considered as a high risk group. The degree of abnormality of the hyperplasia is predictive of subsequent adenocarcinoma of the endometrium. They were treated either with hormonal therapy and a follow up biopsy, or by hysterectomy. 90% of patients who were treated with hormones reverted to normal; those patients who did not revert to normal were treated with hysterectomy.

In this study, we found that vaginal bleeding associate with carcinoma or endometrial hyperplasia is heavier in amount and longer in duration and the likelihood of endometrial carcinoma increases with increasing age and longer
interval between menopause and the onset of PMB. The incidence of endometrial carcinoma increases when there is associated medical problems as hypertension diabetes mellitus and obesity which was found in 25% of all patients and in 41.7% of the carcinoma group. In the evaluation of patient with PMB, attention should be paid to the uterus size and depth of the uterine cavity. Although endometrial carcinoma.

References
1- Zweifel, E. , Deutche Medicinische Wochenen Schrift, 1930,56, 1388,.
10- Gambrell, R.D., Castenada, T.A., any bleeding among this group must be considered to have an associated abnormal endometrial lesion until prove otherwise, patients with an enlarged uterus and increased depth of the uterine cavity appear to have a higher incidence of abnormal pathology.
From our study we conclude that the older the patient at the time of PMB, with associated medical problems and an enlarged uterus, should be suspected of Ricci, C.A. Maturitas, 1987,1, 89-105.