Histopathological study of endometrial biopsies in women presenting with abnormal uterine bleeding

Authors
Dr Moizah Najam*, Dr Bharathi M
Department of Pathology, Mysore Medical College and Research Institute, Mysuru, Karnataka, India
*Corresponding Author
Dr Moizah Najam
Department of Pathology, Mysore Medical College and Research Institute, Mysuru, Karnataka, India
Phone number-9886241305, Email: moiz15star@gmail.com

Abstract
Abnormal uterine bleeding (AUB) is the most common presenting complaint in women attending the gynaecological outpatient department. Endometrial sampling could be used as the first diagnostic step in the evaluation of AUB. This study is done to evaluate histopathology of endometrium for identifying the various endometrial causes of AUB. Patients who presented with AUB and had undergone endometrial sampling are studied. A total of 180 cases are included in this study. Out of 180, 35 cases were excluded due to inadequate sampling. The age groups are categorised into reproductive (21-40years), perimenopausal (41-50 years), postmenopausal (>50years). The most common age group presenting with AUB in our study is perimenopausal group (44.13%). The most common pattern in this age is proliferative endometrium (32.81%). The most common cause in reproductive age group is also proliferative endometrium (48.33%), whereas that in the post-menopausal age group is Hyperplasia without atypia (33.33%). The other causes identified in various age groups are endometrial polyp (2.7%), retained products of conception (1.37%), hyperplasia without atypia (17.93%), hyperplasia with atypia(2.06%) and endometrial carcinoma(6.89%). A thorough histological study of endometrial biopsies can be used as first diagnostic step in evaluating the cause of AUB especially in postmenopausal women who are at increased risk for developing carcinoma.

Keywords: Abnormal uterine bleeding (AUB), proliferative endometrium, hyperplasia without atypia.

Introduction
AUB is defined as a bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause1. It contributes to about one-third of all outpatients coming to gynaecology OPD2,3. Causes include functional causes like normal cyclical endometrium, abnormal physiological changes of endometrium (atrophic endometrium, disordered proliferative) and organic lesions like hyperplasia, polyp, carcinomas and pregnancy related complications. Dysfunctional uterine bleeding is defined as a type of AUB where no underlying cause can be defined4. It can be diagnosed after exclusion of structural, iatrogenic, medications, psychological and systemic disorders by various diagnostic techniques5. Histopathological examination of endometrial
biopsies is gold standard diagnostic tool in evaluation of AUB and a specific diagnosis helps to plan the therapy for successful, resourceful management of AUB\(^6\).

In the present study, 145 adequate samples of endometrial biopsies received over a period of 18 months were chosen for histopathological evaluation of causes of AUB.

**Materials and Methods**

This study was conducted in the Department of Pathology, Mysore Medical College and Research Institute, Mysore. 145 biopsies obtained from patients presenting with AUB from August 2017 to February 2019 were included in this study. Endometrial samples received in 10% formalin underwent routine histological processing and stained with Haematoxylin and eosin stain. The histopathological findings were categorized into functional and organic causes. The functional causes of AUB included in this study were normal cyclical endometrium (proliferative and secretory phase) and other changes like disordered endometrium and atrophic endometrium. Organic causes included were endometrial hyperplasia without atypia and with atypia, endometrial polyp, endometrial carcinoma and retained products of conception.

**Results**

In our study functional cause was the predominant finding for AUB comprising 68.96% of the total cases (Table 1). Organic lesions were predominant in perimenopausal age group (Table 2). The most common age group presenting with AUB in our study is perimenopausal group accounting to 44.13%. The most common pattern in this age is proliferative endometrium 32.81% (Table3).

<table>
<thead>
<tr>
<th>Functional causes of AUB</th>
<th>Reproductive group (21-40 years)</th>
<th>Perimenopausal group (41-50 years)</th>
<th>Post-menopausal group (&gt;50 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proliferative phase</td>
<td>29</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Secretory phase</td>
<td>8</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Disordered phase</td>
<td>8</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Atrophic phase</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Hyperplasia without atypia</td>
<td>10</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Hyperplasia with atypia</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Carcinoma</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other causes</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

**Discussion**

Endometrium is mirror of hormonal status in women. Histological variation can be seen in endometrium according to age of women, phase of menstrual cycle and any another specific pathology\(^7\).

In our study the most common age group presenting with AUB was 41-50 years similar to S. Vaidya et al\(^8\) and Doraaiswami S et al\(^9\). Incidence of functional cause of AUB in our study was 68.96% which was comparable to Ara & Roohi (62.1%)\(^10\), Abdullah LS (61.5%)\(^11\) and Muzaffar et al (61%)\(^12\). Incidence of organic cause of AUB in our study was 31.03% which was comparable to SB Mune et al (35.4%)\(^13\) but was a little higher compared to S.Vaidya et al (19%)\(^8\).

In reproductive age cyclical endometrial change was predominant which was similar to the study by Doraaiswami S et al\(^9\).

In perimenopausal age, proliferative endometrium (32.81%) was the major cause which was comparable to Bhatta et al (29.8%)\(^14\) and Damle et al(34%)\(^15\). Organic causes of AUB accounted for 28.12% which was highest compared to other age groups. Among the organic causes the most common cause was endometrial hyperplasia. Literature has mentioned studies where
endometrial hyperplasia was one of the leading cause of AUB in perimenopausal age\textsuperscript{15,16,17}.
In post menopausal age group, hyperplasia without atypia (33.33\%) was the most common cause for AUB where as in a study conducted by Khare et al\textsuperscript{16} both atrophic endometrium as well as complex hyperplasia without atypia was the most common cause of AUB.\textsuperscript{15}
In our study endometrial carcinoma accounted for 6.89\% of all the cases, of which highest number were noted in the post menopausal age group. This finding was similar to the study conducted by Doraiswami S et al\textsuperscript{9},Bhatta et al\textsuperscript{14} and Khare et al\textsuperscript{16}.Most of the studies found majority of cases of carcinoma in postmenopausal age\textsuperscript{18,19}

Conclusion
Histopathological examination of endometrial biopsies is gold standard diagnostic tool in evaluation of AUB. It not only provides data regarding the hormonal response of endometrium but also helps in diagnosing the organic causes especially endometrial carcinoma. Hence histopathological examination is mandatory especially in peri-menopausal and post menopausal age group and can serve as an first step in the diagnosis of endometrial carcinoma and hence will aid the clinician to take appropriate step in managing the cases further.

Sources of support in the form of grants: Nil

References
13. Mune Swati Bapurao, Karche Abdul Gafoor. Histopathological patterns of


