Original article

Study of organic lesions causing abnormal uterine bleeding (AUB)

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Abstract

Introduction: Abnormal Uterine Bleeding (AUB) is defined as any bleeding that is excessive in duration, frequency or amount for particular patient. Most causes of abnormal uterine bleeding can be revealed histologically, by correlating clinical, histological & radiological findings. It is possible to establish the diagnosis in most cases. Our aim was to find out the occurrence of various lesions causing abnormal uterine bleeding in patients attending OBGY OPD at our Medical College situated in rural area and to study gross & microscopic features of various lesions so as to obtain final histopathological diagnosis.

Materials and methods: Present study was a prospective study conducted in the Dept of Pathology during the period of July 2011-June 2013. The study involved analysis of specimens received in histopathology laboratory of Dept of Pathology from Dept of OBGY of patients who presented with AUB.

Results: Out of 375 cases studied, organic cause for AUB was detected on histopathology in 223 (59.47%) cases. Majority (30.49%) of organic lesions were arising from the endometrium, commonest being Simple Endometrial Hyperplasia (17.94%). The remaining causes included lesions arising from myometrium like Adenomyosis (12.55%) & Leiomyoma (7.11%). Pregnancy related conditions constituted 13.90% while malignant lesions constituted 5.8% of total cases studied.

Conclusions: Histopathological examination of specimens still remains the mainstay of investigation in delineating the various causes of AUB & it plays a definitive role in management of this most common gynecologic complaint. In adolescent & reproductive age group patients, special attention must be focused on pregnancy related conditions where as in peri & post menopausal age group the patient should be thoroughly investigated as large number of malignancies are found in this age group.

Key words: abnormal uterine bleeding, histopathology, organic cause

Introduction:

Excessive & irregular bleeding continues to be one of the most frequently encountered & perplexing problems in gynaecology.\(^1\)

Abnormal Uterine Bleeding (AUB) is defined as any bleeding that is excessive in duration, frequency or amount for particular patient.\(^1\)

It is usually quite simple to find the cause of abnormal menstrual bleeding, although occasionally cause may not be found, since abnormal bleeding can be caused by disorders of uterus, hormonal imbalance & pregnancy. It is helpful to look at each area separately.\(^2\) When no systemic or local pelvic cause is evident to the clinician & when conservative measures such as oral contraceptives & other progestational agents fail to treat the problem, an anatomic cause for the abnormal uterine bleeding should be considered. Most causes of abnormal uterine bleeding can be revealed histologically, by correlating clinical, histological & radiological findings. It is possible to establish the diagnosis in most cases.\(^1,3\) In present study we will be considering only organic causes related to female genital system from vagina to ovary giving rise to abnormal uterine bleeding. Our aim was to find out the occurrence of various
lesions causing abnormal uterine bleeding in patients attending OBGY OPD at our Medical College situated in rural area and to study gross & microscopic features of various lesions so as to obtain final histopathological diagnosis.

**Materials and methods:**

The present study was a prospective study conducted in department of pathology, at Medical College & Hospital located in rural area, during the period of July 2011 to June 2013.

The study involved an analysis of specimens received in histopathology laboratory of department of pathology from department of obstetrics and gynaecology.

**Inclusion criteria:** The specimens obtained from women of all age groups who presented with abnormal uterine bleeding were included in the study.

**Exclusion criteria:** The cases of abnormal uterine bleeding which were treated hormonally and not subjected to D & C were not included in the present study.

In all such cases the clinical and relevant investigative data was recorded. The specimens received and studied were the result of the operative procedures like Cervical Biopsy, Salpingectomy, Dilatation & Curettage, Polypectomy & Hysterectomy.

Thus formalin fixed & paraffin embedded tissue sections from these specimens were used for microscopic study. The sections were stained with haematoxylin & eosin stains.

**Results:**

During the course of study from July 2011 to June 2013, 459 gynaecology specimens were received in the Department of Pathology, out of which 375 (81.7%) patients presented with abnormal uterine bleeding, where as the rest 84 (18.3%) presented with other complaints like abdominal pain or PV discharge.

Out of 375 cases, in 223 (59.47%) patients organic cause for Abnormal Uterine Bleeding (AUB) was detected on histopathology. In 152(40.53%) cases no organic cause for Abnormal Uterine Bleeding (AUB) was detected, so these cases belonged to the category of Dysfunctional Uterine Bleeding (DUB). (Fig No. 1)

Majority of the patients belonged to the age group of 41-50 years (36.77%) followed by those in the age group of 31-40 years (30.94%). The youngest patient was 17 years old while the oldest patient was 85 years old. (Fig No. 2)

Menorrhagia was the most common symptom seen in 58 (26%) patients. The other common symptom was postmenopausal bleeding seen in 48 patients & accounting for 21.52% of patients. The other symptoms with which the patients presented with were menometrorrhagia (22 cases), amenorrhoea followed by bleeding (24 cases), metrorrhagia (12 cases), polymenorrhoea (14 cases), continuous bleeding (16 cases), intermenstrual bleeding (12 cases) & postcoital bleeding (11 cases). (Fig No. 3)

Majority (30.49%) of organic lesions causing AUB were arising from endometrium. The rest of the causes included lesions arising from the myometrium and cervix and pregnancy related conditions. Out of total 223 cases presenting with AUB due to organic lesions, the most common lesion encountered in the endometrium was Simple endometrial hyperplasia (17.94%).

Adenomyosis (12.55%) & leiomyoma (7.11%) were the most common lesions in the myometrium responsible for abnormal uterine bleeding. The most common cervical lesion causing AUB was chronic cervicitis constituting 16.14%. Pregnancy related conditions were also responsible for AUB constituting 13.90%. The total number of malignant lesions was 13 comprising about 5.8% of total cases studied.( Table No 1)
Discussion:
This was a study carried out at a hospital situated in a rural area. A total of 459 gynaecology specimens were received in pathology department of our Medical College over a period spanning from July 2011 to June 2013. Of these 459 specimens, 375 (81.7%) belonged to patients who presented with complaints of abnormal uterine bleeding forming the database of our study. This large proportion of the patients points out the sheer magnitude of this problem & the need to establish an accurate diagnosis in order to help the clinician to formulate appropriate line of management. In this study age of patients ranged between 17 to 85 years, hence it was a broad based study which included patients of all age groups.

Women from all age groups presented with abnormal uterine bleeding. Most of the cases (36.77%) of AUB in the present study were seen in the age group of 41-50 years. Overall most of the cases (67.71%) were seen clustered in age groups between 31-50 years. Similar findings were noted in the studies by Maheshwari V et al¹, Geeta B S et al⁴ & Padhye S et al⁵ where most of the patients were in the age groups between 31-50 years and constituted 72.1% , 72 % & 69,1% respectively.

According to Dewhurzt, DUB is one of the most frequently encountered condition in gynaecology, being the principle diagnosis in at least 10% of all new patients in both hospital & private practice and Organic lesions of the female genital tract constituted about 23% of the cases.¹⁵
In a study by Geetha B.S. et al⁴, 49.5% patients revealed organic lesion on histopathological study. Studies by Maheshwari V. et al¹, Muzaffar M et al⁷ & Tsvetkov K et al⁸ showed that organic lesions were found in 45.2%, 40% & 42.86% of the cases respectively.Contrary to the above findings in our study out of 375 patients presenting with abnormal uterine bleeding, organic cause for bleeding was detected on histopathological examination in 223 (59.47%) cases, while 152 (40.53%) cases were of dysfunctional uterine bleeding (40.53%). The high incidence of organic lesions causing AUB in our study may be because of inclusion of many cases of bad cervicitis which presented with intermenstrual spotting. In our study Uterine bleeding is used synonymously with per vaginal bleeding. Hence excluding cervicitis 187(49.87%) cases showed organic lesions causing abnormal uterine bleeding & 188(50.13%) cases were of DUB.

The most common symptom in the present study was menorrhagia (26%), which is comparable with the studies carried out by Geetha B S ⁴, Sagar s et al ⁹ & Maheshwari V et al¹. The most common endometrial pathology encountered in the present study was simple endometrial hyperplasia (17.94%) ( Fig No 4). This was comparable with studies carried out by Maheshwari V V et al¹, Geetha B S et al⁴ & Moghal N et al.¹⁰ Other endometrial lesions included products of conception (8.96%) & hydatidiform mole (0.44%), which were comparable with study done by Geetha B S et al¹ in which products of conception seen in 7.5% cases & hydatidiform mole seen in 0.5% cases. Incidence of endometrial polyps (4.48%) was comparable with studies done by Maheshwari V et al¹(2.9%), Geetha B S et al⁴ (1.5%) & Moghal N et al¹⁰(8.95%).
Endometrial adenocarcinoma constituted 0.89% of cases which is comparable with study done by Moghal N et al¹⁰ in which endometrial adenocarcinoma constituted 0.44% of cases. Myometrial lesions like adenomyosis & leiomyoma were responsible for AUB in 28.58% of cases. Studies done by Maheshwari V et al¹ (24.99%) showed similar findings. In our study a total of 13 cases (5.8%) of malignancies were found. 3 (1.43%) cases belonged to malignancies of endometrial origin, while 10 (4.48%) cases
belonged to malignancies of cervical origin. Of the 3 malignancies of endometrial origin, 2 (0.89%) cases were of adenocarcinoma of endometrium; one Endometroid type of adenocarcinoma well differentiated grade I (Fig No 8) & the other was Papillary serous adenocarcinoma of endometrium well differentiated Stage III A (Fig No 7), while the remaining one case was of Malignant Mixed Mullerian tumor (MMMT) ( Fig No 5 & 6 ). In a study by Merrial J A 1981, the incidence of endometrial malignancies among hospitalized women varied 3.7% & 17.9%.11 Lioder et al12 found endometrial carcinoma as a cause of bleeding in 7% postmenopausal women. The low incidence (0.89%) found in our study, in comparison to that reported by various authors is mostly due to difference in socioeconomic standards & geographical area of study.

**Conclusion:**

1. Gynaecologic histopathogy form a significant proportion of workload of the surgical pathology laboratory in our institute.
2. Histopathological examination of specimens, still remain the mainstay of investigation in delineating the various possible causes of abnormal uterine bleeding. Histopathology gives a definitive picture to management of this most common gynaecologic complaint seen by clinician day in and out.
3. In adolescent and reproductive age group patients, special attention must be focussed on pregnancy related conditions causing abnormal uterine bleeding.
4. The cause of bleeding in peri & post menopausal age group should be thoroughly investigated as large incidence of malignancies are found in this age group.
5. In case of malignancies staging and prognostication become important by histopathological examination.
6. Hence, histopathological examination is gold standard investigation in patients presenting with abnormal uterine bleeding.

<table>
<thead>
<tr>
<th>Organic lesions</th>
<th>Number of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non pregnancy related conditions</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Uterus – Endometrium</strong></td>
<td></td>
<td></td>
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<tr>
<td>Endometritis</td>
<td>2</td>
<td>0.89%</td>
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<tr>
<td>Endometrial polyp</td>
<td>10</td>
<td>4.48%</td>
</tr>
<tr>
<td>Endometrial atrophy</td>
<td>10</td>
<td>4.48%</td>
</tr>
<tr>
<td>Simple endometrial hyperplasia</td>
<td>40</td>
<td>17.94%</td>
</tr>
<tr>
<td>Complex endometrial hyperplasia without atypia</td>
<td>3</td>
<td>1.34%</td>
</tr>
<tr>
<td>Endometrial carcinomas</td>
<td>2</td>
<td>0.89%</td>
</tr>
<tr>
<td>MMMT</td>
<td>1</td>
<td>0.44%</td>
</tr>
<tr>
<td><strong>Uterus – Myometrium</strong></td>
<td></td>
<td></td>
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<tr>
<td>Adenomyosis</td>
<td>28</td>
<td>12.55%</td>
</tr>
<tr>
<td>Leiomyomas</td>
<td>16</td>
<td>7.17%</td>
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<td>Leiomyomas &amp; adenomyosis</td>
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<td>8.96%</td>
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<tr>
<td><strong>Uterine Cervix</strong></td>
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<td></td>
</tr>
<tr>
<td>Lesion</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------------------------------</td>
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<tr>
<td>Chronic cervicitis</td>
<td>36</td>
<td>16.14%</td>
</tr>
<tr>
<td>Dysplasia of cervix</td>
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<td>4.93%</td>
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<td>Endocervical polyp</td>
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<td>SCC of cervix</td>
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<td>3.58%</td>
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<tr>
<td>VGA of cervix</td>
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<td>0.89%</td>
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<tr>
<td>Pregnancy related conditions</td>
<td></td>
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<tr>
<td>H.mole</td>
<td>1</td>
<td>0.44%</td>
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<tr>
<td>Abortions</td>
<td>20</td>
<td>8.96%</td>
</tr>
<tr>
<td>Ectopic pregnancy</td>
<td>8</td>
<td>3.58%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>223</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Table No.1: Distribution of various lesions causing Abnormal Uterine Bleeding according to the site of lesion

Figure No. 1: Magnitude of organic lesions causing Abnormal Uterine Bleeding

Figure No.2: Age wise distribution of patients presenting with AUB due to organic causes
Figure No.3: Symptomatology in abnormal uterine bleeding patients.

Figure No.4: Photomicrograph showing simple endometrial hyperplasia (H & E -10X).

Figure No.5: Hysterectomy specimen showing Malignant Mixed Mullerian Tumor.
Figure No. 6: Photomicrograph showing foci of chondrosarcoma in a Malignant Mixed Mullerian tumor. (H & E-4X).

Figure No.7: Photomicrograph showing papillary serous type of endometrial adenocarcinoma (H & E-40X).

Figure No.8: Photomicrograph showing endometrioid type of endometrial adenocarcinoma (H &E-40X).

References: