



ORIGINAL RESEARCH PAPER

Pathology

MICROSCOPIC PATTERN OF ENDOMETRIUM IN ABNORMAL UTERINE BLEEDING – OUR EXPERIENCE

KEY WORDS: abnormal uterine bleeding, endometrium, histology, microscopy

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ABSTRACT

Abnormal uterine bleeding (AUB) is defined as the bleeding pattern that differs in the duration, amount and frequency of the flow of a normal menstrual cycle. AUB is one of the most common reasons due to which women visit a gynaecologist and has a variety of causes, from hormonal imbalance in reproductive age group women to hyperplasia and malignancies in perimenopausal and postmenopausal patients. Histopathological analysis of endometrial biopsy from dilatation and curettage samples gives an accurate diagnosis of the cause of AUB. This study was conducted to find out the microscopic patterns in the endometrial curettage samples of females presenting with abnormal uterine bleeding, at our institute.

Introduction:

Abnormal uterine bleeding (AUB) is defined as the bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause. ⁽¹⁾ Abnormal Uterine Bleeding (AUB) is an important symptom of both benign and serious gynaecological disease. ⁽²⁾

The most probable aetiology of abnormal uterine bleeding is related to patient's reproductive age, whether the patient is premenopausal, perimenopausal or postmenopausal. ⁽³⁾ AUB includes structural causes like fibroids, polyps, pregnancy complications and endometrial carcinoma or can be functional, termed as dysfunctional uterine bleeding. ^(3,4)

Excessive bleeding can affect the medical as well as social health of women and is one of the leading causes of iron deficiency anemia. ⁽⁴⁾ The bleeding patterns in AUB include menorrhagia, polymenorrhoea, metrorrhagia, metromenorrhagia and postmenopausal bleeding. ^(1,5)

Histopathological examination of endometrial biopsies is considered as the gold standard for evaluation of AUB. ^(6,7) This study was conducted to find out the microscopic spectrum of endometrial biopsies in women of different age groups presenting with abnormal uterine bleeding.

Material and method:

This observational prospective study was conducted in the department of Pathology, SMS medical College, Jaipur over a period of two years, from January 2017 to December 2018. All endometrial curettage samples for histopathological evaluation, with the clinical diagnosis of AUB were included in this study. Inadequate samples, follow up cases of endometrial malignancies, gravid patients, postoperative, postpartum, and pregnancy-related bleedings were excluded. Endometrial biopsies received were fixed in 10% formalin and processed. The paraffin embedded tissues were sectioned at 5 µm, stained with haematoxylin and eosin stain and studied by light microscopy. The histopathological findings were correlated with the clinical details.

Result:

In our study, we had a total of 1480 endometrial biopsies from patients of AUB over a period of 2 years. Of these, the most common age group involved was 41 to 50 years (42.1% cases) and the second most common age group for AUB was 31 to 40 years (31.8% cases).

Table 1: Age wise distribution of patients with AUB

Age range (years)	No of patients	Percentage (%)
21-30	39	2.6
31-40	471	31.8
41-50	624	42.1
51-60	253	17.1
61-70	76	5.1
71-80	19	1.3
Total	1480	100.0

Table 2: distribution of cases according to menstrual status

Menstrual status	No of cases	Percentage (%)
Premenopausal	583	39.4
Perimenopausal	682	46.1
Menopausal	215	14.5
Total	1480	100.0

We had maximum cases (46.1%) in the perimenopausal group, followed by premenopausal (39.4%) and menopausal patients (14.5%).

As depicted in table 3, We found a linear correlation of increasing incidence of AUB as the parity of patients increased, with the grand multipara women having the highest incidence of the disease.

Table 3: parity of patients presenting with AUB

Parity	No of cases	Percentage (%)
Nullipara	147	9.9
Para 1	194	13.1
Para 2	203	13.7
Para 3	407	27.6
Grand multipara	529	35.7
Total	1480	100.0

Table 4: The bleeding pattern in cases of AUB

Pattern of bleeding	No of patients	Percentage (%)
Menorrhagia	434	29.3
Metrorrhagia	573	38.7
Polymenorrhagia	223	15.1
Polymenorrhoea	132	8.9
Continuous bleeding per vaginum	45	3.0
Post-menopausal bleeding	73	4.9
Total	1480	100.0

The most common symptom with which our patients presented was metrorrhagia (38.7%) followed by menorrhagia (29.3%), as shown in table 4.

Table 5: Endometrial microscopic spectrum in cases of AUB

Endometrial microscopic pattern	No of cases	Percentage (%)
Proliferative phase	467	31.6
Secretory phase	293	19.8
Endometrial polyp	128	8.6
Endometritis	39	2.6
Atrophic	97	6.6
Disordered proliferation	172	11.6
Typical hyperplasia	173	11.7
Atypical hyperplasia	75	5.1
Endometrial carcinoma	36	2.4
Total	1480	100.0

In this study, the most common histology noted in the endometrium was that of proliferative phase (467 cases), followed by secretory phase (293 cases). There were 172 cases of disordered proliferation and 128 endometrial polyps. We had 173 cases of typical hyperplasia and 75 cases of atypical hyperplasia. 97 patients had atrophic endometrium while 39 patients had endometritis. We also encountered 36 cases of endometrial carcinoma.

Discussion:

Endometrium acts as a reflection of the hormonal status in women, where variation in microscopic pattern can be observed as per the age, phase of menstrual cycle or any another specific pathology.⁽⁸⁾

Abnormal uterine bleeding is one of the most common gynecological problem in women of all age groups.⁽⁴⁾ Microscopic examination of the endometrial curettage specimen is considered the gold standard for diagnosing the etiology of AUB.^(6,7)

The commonest age group presenting with AUB in our study was 41 to 50 years. Similar result was obtained by many researchers^(4,9-15) while some authors have reported an early incidence in the age group of 31 to 40 years^(3,16).

We had maximum cases (46.1%) in the perimenopausal group, followed by premenopausal (39.4%) and menopausal patients (14.5%). The reason for having an increased incidence of AUB in perimenopausal age group is the decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, resulting in low level of oestrogen which cannot keep the normal endometrium growing.⁽⁴⁾

The incidence of AUB increased with increase in parity, in our study. This is comparable to the observation of Afgan et al.⁽⁷⁾

The most common symptom with which our patients presented was metrorrhagia (46.8%) followed by menorrhagia (21.2%). However, Kaur et al⁽¹⁰⁾, Afgan et al⁽⁷⁾, Hoxhaj et al⁽¹⁷⁾ and Jetley et al⁽¹⁸⁾ observed menorrhagia to be more than metrorrhagia in their respective studies, while Azim et al⁽¹⁶⁾ have reported polymenorrhagia to be the most common bleeding pattern in their study. An increased incidence of metrorrhagia as compared to menorrhagia in our study could be attributed to the fact that women quite often tend to neglect menorrhagia for a long time before consulting a gynaecologist.

The International Federation of Gynecology and Obstetrics (FIGO) Executive Board has laid down the PALM-COEIN classification system for abnormal uterine bleeding (AUB) among non-gravid women of reproductive age, for uniformity.⁽⁹⁾ There are 9 main categories, which are arranged according to the acronym PALM-COEIN: Polyp, Adenomyosis, Leiomyoma, Malignancy (and hyperplasia), Coagulopathy, Ovulatory disorders, Endometrial, latorrogenic and Not otherwise classified. The term "DUB," which was previously used as a diagnosis when there was no systemic or locally definable structural cause for AUB, is not included in the

system and should be abandoned.⁽⁹⁾

In our study the most common microscopic pattern of endometrial biopsy was of cyclic endometrium with 31.6% Proliferative and 19.8% secretory, totalling to 51.4 %. This is similar to other studies of Tiwari et al⁽⁵⁾, Singh et al⁽⁹⁾ and Azim et al⁽¹⁶⁾. However, Mune et al⁽⁴⁾ noted a lower incidence of secretory phase compared to our study and other similar studies.

Bleeding in proliferative phase is due to anovulatory cycle, due to progressive rise of estrogen to comparatively high level, which is followed by sudden fall in estrogen due to feedback inhibition of pituitary or of FSH secretion and hence bleeding occurs. Bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding, and is explained by inability of corpus luteum to synthesize adequate amount of progesterone, although it remains active throughout the entire period of 12-14 days.⁽²⁰⁾

There were 11.6% cases of disordered proliferation in the current study. This finding is lower as compared to Singh et al (16.1%) and Mune et al (13.7%) but higher than More et al (7.4%).^(4,9,19) Most of the patients were in the perimenopausal group, as also observed by Singh et al.⁽⁹⁾

The incidence of endometrial polyps (8.6%) is comparable to other researchers.^(4,9) Endometrial hyperplasias constituted 16.8 % in this study, similar to More et al.⁽¹⁹⁾ But Singh et al and Mune et al have reported a higher incidence in their studies.^(4,9)

We had a slightly lower incidence of atrophic endometrium (6.6%) as compared to other studies.^(4,9) This difference is due probably to a greater number of perimenopausal patients as compared to post-menopausal women in our study as compared to theirs.

Similar to previous studies we had 2.6% cases of endometritis.^(4,9,19) We encountered 36 (2.4%) cases of endometrial carcinoma. This is comparable to other studies and they were mostly seen in peri and post-menopausal women.^(4,9,19)

Conclusion:

Abnormal uterine bleeding is the most common reason for a Gynecologic consultation. The causes of AUB range from normal cyclic pattern to carcinomas. One must rule out age dependent pathologies like endometrial polyp, hyperplasia and carcinomas in AUB patients. The Microscopic evaluation of endometrial biopsies is the gold standard diagnostic tool for finding out the cause of AUB. Thus, it of great help to the gynaecologist for planning specific treatment for such patients.

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