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Histopathological Pattern of Endometrial Sampling Performed for Abnormal Uterine Bleeding at Tertiary Care Centre in Western Rajasthan

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Abstract

Abnormal Uterine Bleeding (AUB) is defined as any bleeding that doesn't correspond with the frequency, duration or amount of blood flow during menses. It consists of both dysfunctional uterine bleeding (due to functional causes) and bleeding from structural causes like polyps, fibroids, pregnancy complications, endometrial carcinoma etc. In women ≥ 35 years and certainly in menopausal patients, it mandates evaluation to confirm the benign nature of the problem, so that medical treatment or conservative surgery can be offered and unnecessary radical surgery can be avoided. The wide range of morphologic patterns resulting from both normal and abnormal changes offer a diagnostic challenge to histopathologists. Our study is aimed to study the endometrial cause of abnormal uterine bleeding in women of all age groups and study the prevalence, incidence of different histological patterns of various lesions of endometrium including non-organic and organic causes at our hospital. The prospective study was conducted for 1 years from January, 2019 to December, 2019 on 871 patients. The patients were classified into functional (non-organic) and organic causes. Out of 871, the predominance of cases was in the perimenopausal age group 41-50 years (40.07 %) followed by age group 31-40 years (30.54 %). The mean age of women presenting with abnormal uterine bleeding was 41.7 years. The common clinical presentation of abnormal uterine bleeding was menorrhagia (66.02 %) followed by post-menopausal bleeding (16.42 %), menometrorrhagia (6.31 %) and oligomenorrhea (4.48 %). Out of 871 cases, non-organic causes are 80.94 % followed by organic causes (19.06 %). Out of 871 cases studied, proliferative phase was the most common histopathological diagnosis constituting 63.95 % cases followed by secretory phase (15.27 %), endometrial hyperplasia (6.43 %), product of conception (3.10 %), H Mole (2.76 %) and

endometrial polyp (2.41 %). In our study, pregnancy related bleeding was seen in 51(5.86%) cases, 64.71% of which were in the age group 21-30 years. In our study endometrial carcinoma was found in 13 (1.49%) patients. The incidence of endometrial carcinoma was high after 50 years of age group. These results clearly had shown that histopathological study is mandatory for all cases of AUB so as to rule out preneoplastic or malignant lesions. This simple study of endometrial curettage or biopsy concludes that histopathological examination of endometrial biopsies is gold standard diagnostic tool in evaluation of AUB and revealed various patterns ranging from normal endometrium to malignancy.

Keywords: Histological pattern, Abnormal Uterine Bleeding, Dysfunctional Uterine Bleeding

Introduction

Abnormal uterine bleeding is considered one of the most common and challenging problems presenting to the clinicians. Heavy bleeding may affect a woman's health both medically and socially, causing problems such as iron deficiency anemia and many chronic illnesses. [1]

Abnormal Uterine Bleeding (AUB) is defined as any bleeding that does not correspond with the frequency, duration or amount of blood flow of a normal menses [2], and suggestive of hormonal imbalance or a significant underlying condition necessitating aggressive treatment including a major surgery. [3] It includes both dysfunctional uterine bleeding (due to functional causes) and bleeding from structural causes like polyps, fibroids, pregnancy complications, endometrial carcinoma etc. [4]

Dysfunctional uterine bleeding is defined as any bleeding from the vagina that varies from a woman's normal menstrual cycle. It may be anovulatory characterised by alternating periods that are heavy and light, spotting or unpredictable shorter and longer cycles.

In women ≥ 35 years and certainly in menopausal patients, it mandates evaluation to confirm benign nature of the problem, so that medical treatment or conservative surgery can be offered and unnecessary radical surgery can be avoided. [5] Accurate analysis of endometrial sampling and localisation of intrauterine lesions is the goal to effective evaluation and management of problem. Diagnostic techniques available for evaluation for abnormal uterine bleeding includes endometrial biopsy, dilatation & curettage and ultrasonography. [6]

Dilatation and curettage is a useful and cost-effective method of detecting intrauterine pathologies and therefore, this histological study was carried out to identify the causes of Abnormal Uterine Bleeding (AUB) at different age groups which may be of helpful in planning the therapeutic strategies by the gynaecologists.

The wide spectrum of histopathological patterns exists to offer a diagnostic challenge to histopathologists. Our study is aimed to study the endometrial cause of abnormal uterine bleeding in women of all age groups and study the prevalence, incidence of different histological patterns of various lesions of endometrium including non-organic and organic causes at our hospital.

Materials & Methods

This prospective study was conducted at the Department of Pathology, S. P. Medical College, Bikaner in Western Rajasthan. The study will be prospective from January, 2019 to December. 2019 for 1 year. Patients with isolated endometrial causes of abnormal uterine bleeding will be included for the

study and the pattern of uterine histopathological changes identified and classified according to age groups.

The first group consists of patients with abnormal uterine bleeding due to functional (non-organic causes) includes: Secretory endometrium, Proliferative endometrium, Atrophic endometrium, Disordered proliferative endometrium, Decidual reaction, Hormonal imbalance.

The second group includes patients with Abnormal uterine bleeding due to organic causes includes: Endometrial polyp, Endometritis, Low grade endometrial hyperplasia, Endometrial carcinoma, Pregnancy-related conditions, Cervical lesions.

Inclusion Criteria

1. All endometrial biopsies done for patients presenting with abnormal uterine bleeding in above age group.
2. Endometrial tissues obtained after dilatation and curettage procedure for abnormal uterine bleeding will be included.

Exclusion Criteria

1. Bleeding from cervical-vaginal region.
2. Person with known hematological causes of bleeding.

Results & Discussion

Total 871 cases of abnormal uterine bleeding were studied. Out of these majority of cases were in the perimenopausal age group 41-50 years (40.07 %) followed by age group 31-40 years (30.54 %). (Table 1) Similar observations were also made by Doraiswami S. et al[7] (33.5 %), Zeeba S. Jairajpuri[8] (35.89 %), Rupal shah et al[9] (53.4 %), Mune S.B. et al[10] (42 %). An increased number of cases in this age group could be due to the fact that as menopause approaches, decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, results in low level of estrogen which cannot keep the normal endometrium growing.

Table 1: distribution of total number of cases according to age

Sn.	Age Group (Years)	No. of Cases (n)	Percentage (%)
1	11-20	13	1.49
2	21-30	121	13.89
3	31-40	266	30.54
4	41-50	349	40.07
5	51-60	96	11.02
6	>61	26	2.99
Total		871	100

The mean age of women presenting with abnormal uterine bleeding was 41.7 years which was comparable with S. Vaidya et al[11] (43 years), Agrawal et al[13] (41 years) and Mune S.B. et al[10] (44.2 years).

The common clinical presentation of abnormal uterine bleeding was menorrhagia (66.02 %) followed by post-menopausal bleeding (16.42 %), menometrorrhagia (6.31 %) and oligomenorrhea (4.48 %). (Table 2)

Similarly, menorrhagia was predominant in other studies like Anwar M. et al[12] (42.4 %), Mune S.B. et al[10] (47.6%), Ara et al[14] (49.06 %) and Muzaffar et al[15] (51.9 %).

Table 2: distribution of cases according to clinical presentations

Sn.	Clinical Presentation	No. of Cases (n)	Percentage (%)
1	Menorrhagia	575	66.02
2	Post-menopausal bleeding	143	16.42
3	Menometrorrhagia	55	6.31
4	Oligomenorrhea	39	4.48

5	Metrorrhagia	34	3.90
6	Polymenorrhea	25	2.87
Total		871	100

Out of 871 cases, non-organic causes are 80.94 % followed by organic causes (19.06 %). (Table 3)

Similar observations of non-organic and organic causes were also made by Mune SB et al[10] (64.6 % & 35.4 %), Ara & Roohi[14] (62.1 % & 37.9 %), Muzaffar et al[15] (61 % & 39 %), Abdullah LS et al[16] (61.5% & 38.5%).

Table 3: distribution of total number of cases based on organic and non-organic causes

Sn.	Category	No. of Cases	Percentage (%)
1	Non-Organic	705	80.94
2	Organic	166	19.06
Total		871	100

Out of 871 cases studied, proliferative phase was the most common histopathological diagnosis constituting 63.95 % cases followed by secretory phase (15.27 %), endometrial hyperplasia (6.43 %), and product of conception (3.10 %), H Mole (2.76 %) and endometrial polyp (2.41 %). (Table 4, Figure 1,2)

The incidence of 63.95% of proliferative endometrium compares with Rupal S et al[9] (38.1%), Ghani et al[17] (45.1%) and Bindroo S et al[18] (37.2%). Bleeding in a 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 bleeding results. In our study, Proliferative pattern was predominantly found in 41-50 years of age group, similar to Doraiswami S et al[9].

In the present study secretory phase was found in 15.27% cases compares with Rupal S et al[9] (9.2%), while higher incidence in Ghani et al[17] (21.6%) and Bindroo S et al[18] (34%). Bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding, 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.

Table 4: distribution of total number of cases according to histopathological patterns

Sn.	Histological Patterns	No. of Cases (n)	Percentage (%)
1	Proliferative Phase	557	63.95
2	Secretory Phase	133	15.27
3	Endometrial hyperplasia	56	6.43
4	Product of Conception	27	3.10
5	H Mole	24	2.76
6	Endometrial Polyp	21	2.41
7	Endometritis	19	2.18
8	Adenocarcinoma	13	1.49
9	Decidual reaction	15	1.72
Total		871	100

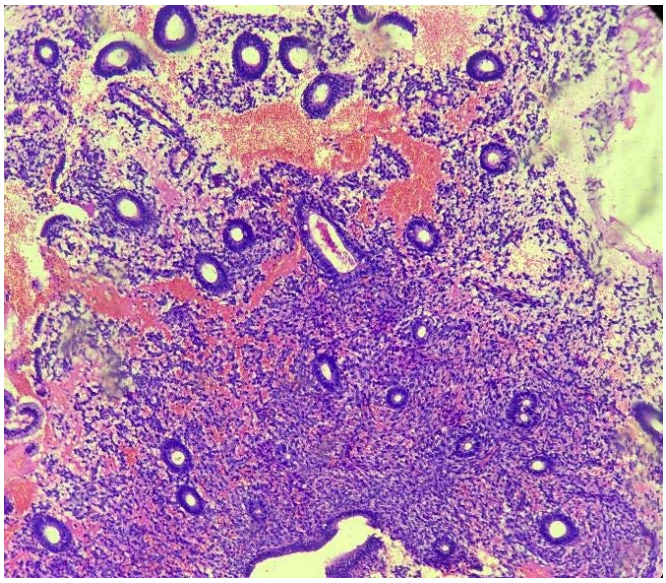
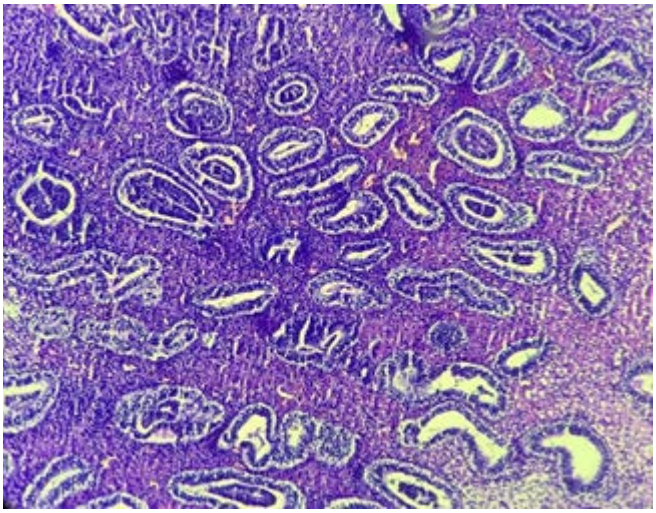


Fig. 1: (a) Proliferative Phase (H&E stain) 10X



(b): Secretory Phase (H&E stain) 10X

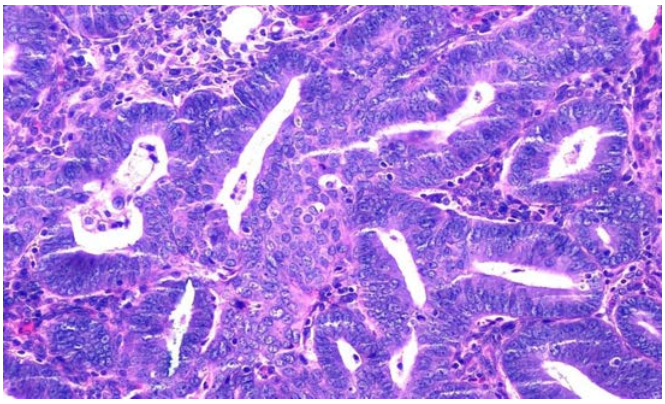


Fig 2: High Power view (40X) of Adenocarcinoma of Endometrium

Among 705 cases of non-organic pathology, 79.01 % cases (557) were in proliferative phase, 18.87 % (133) were in secretory phase and only 2.13 % (15) in decidual reaction. Among 166 cases of organic causes, 33.73 %(56) was endometrial hyperplasia followed by product of conception (16.27 %, 27), H mole (14.46 %, 24) and endometrial polyp (12.65 %, 21).

Unopposed exposure of the endometrium to estrogen leads to endometrial hyperplasia, which was commonest pathology of AUB in our study and observed in 6.43% of cases. Literature reports quite variable incidence of endometrial hyperplasia, Asuzu IM et al[19] (10%), Bindroo S et al[18] (16%), Vaidya et al[11] (10.9%), Khan et al[20] (12.6%) and Silander et al[21] (6.66%). Similar to other studies, observed that endometrial hyperplasia was the most frequent result in women aged 41-50 years, probably due to exposure to unopposed estrogen.

In our study, pregnancy related bleeding was seen in 51(5.86%) cases, 64.71% of which were in the age group 21-30years. Pregnancy related bleeding in other studies, like Jairajpuri ZS[8] et al were 15.36% and 51% of which were in the age group 21-30years. In our study, pregnancy-related bleeding includes product of conception (3.10%) and molar pregnancy (2.76%).

Prolonged oestrogen stimulation also results in formation of endometrial polyp. The incidence of benign endometrial polyps was 2.41% in our study which was similar to other studies Saroj AB et al[22] (1.79%), Deeba F et al[23] (3.6%). In our study, higher incidence of 52.38% was seen in 31–40 years age group.

Endometritis, diagnosed in 2.18% of cases concurs with the reported incidence of 2.6% by Rupal shah et al[9] and Mune SB et al[10] (2.4%). Majority of them were >40years age group similar to study by Mune SB et al[10] and Damale et al[24].

In our study endometrial carcinoma was found in 13 (1.49%) patients, Riaz S et al[25] reported 1.0% & Abdullah LS[16] et al reported 1.8%. Lower incidences of 0.4% by Khan S et al[20] and 0.47% by Jairajpuri ZS[8] had also been reported in the literature. Likewise, higher incidences of 4.4% and 5.71% have been reported by Doraiswami et al[7] and Bhatta S et al[26] respectively. As reported in the literature and also in our study, endometrial carcinoma was commonly seen in more than 50 years of age group. Hence histopathological examination of endometrium should be done generously in women presenting with AUB after the age of 40 years to rule out malignant pathology.

Histopathological examination of endometrial biopsies is a gold standard diagnostic tool in evaluation of AUB and reveals various patterns ranging from normal endometrium to malignancy. Most of the patients with Abnormal Uterine Bleeding presented with normal cyclic endometrium, followed by endometrial hyperplasia and disordered proliferative endometrium. There was an age specific correlation of endometrial lesions. Normal cyclical proliferative endometrium and endometrial hyperplasia were predominantly found in the 41-50 years age group. Incidence of endometrial polyp was high in 31-40 years of age group. The incidence of endometrial carcinoma was high after 50 years of age group. These results clearly had shown that histopathological study is mandatory for all cases of AUB so as to rule out preneoplastic or malignant lesions. This simple study of endometrial curettage or biopsy can be of great help to gynecologists to plan therapy of a patient presented with AUB by close follow up of a patient who has precursor lesion or by timely surgical intervention in case of malignant lesions.

Conclusions

Abnormal uterine bleeding in perimenopausal women is most commonly dysfunctional in origin. There is an age specific association of endometrial lesions. Carcinoma of endometrium occurs with increasing frequency with increasing age. In perimenopausal women AUB is most commonly dysfunctional due to hormonal imbalances and in the reproductive age group, one should first rule out complications of pregnancy.

1.49% cases had malignant disease in present study. This shows the importance of doing curettage and biopsy. Diagnostic curettage or endometrial biopsy should be mandatory without delay in all cases of perimenopausal and post-menopausal bleeding to rule out malignancy.

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