

ORIGINAL ARTICLE

MORPHOLOGIC PATTERNS OF ENDOMETRIUM IN BIOPSY/ CURETTING SPECIMENS OF PATIENTS WITH ABNORMAL UTERINE BLEEDING

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Background: Endometrial biopsy or curettage is the gold standard technique for evaluation of abnormal uterine bleeding (AUB) after ruling out the possibility of medical causes. The objective of our study is to determine the frequency of various endometrial pathologies in different age groups with complaints of AUB. **Methods:** This study was conducted in Pathology Department of DG Khan Medical College and Multan Institute of Kidney Diseases. It was a retrospective, descriptive cross-sectional study done over two years from 1 Jan 2017 to 31 Dec 2018. Sampling technique was convenience sampling. Endometrial biopsies and curetting were parts of this study. Histopathological findings of biopsy and curetting specimens were noted. **Results:** Total cases were 148 and data was categorized in reproductive (12–39 year), perimenopausal (40–50 year) and postmenopausal (above 50 year) age groups. In reproductive age group, secretory endometrium 22% was the most frequent finding followed by proliferative phase endometrium (20%). In perimenopausal age group, proliferative phase endometrium was the most common histological finding (31%). This was followed by secretory endometrium (23%) and chronic endometritis (17%). In postmenopausal age group, most common histological finding was exogenous hormone effect seen in 43% cases followed by non diagnostic tissue, atrophic endometrium and chronic endometritis, each 14.2%. **Conclusion:** We observed diverse findings like benign entities, infectious aetiology and malignancy as well.

Keywords: Abnormal uterine bleeding, AUB, Dilatation and Curettage, Histomorphological patterns, Proliferative, Secretory, Endometrium

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INTRODUCTION

Abnormal uterine bleeding (AUB) is the most common gynaecologic problem worldwide.¹ The AUB can be defined as a bleeding which shows difference in frequency, bleeding duration and amount of menstrual flow from normal menstrual cycle.² Menstrual problems are responsible for significant morbidity affecting one in five women at some stage in their life. Prevalence of abnormal uterine bleeding in developing countries like Pakistan is found to be 5–15%.³

Abnormal uterine bleeding is commonest indication for endometrial sampling by endometrial biopsy or curettage. Endometrial biopsy or curettage is the gold standard technique for evaluation of AUB after ruling out the possibility of medical causes. Both organic and non-organic causes are evaluated in AUB. Different morphologic patterns and causes of AUB are observed according to different age group.⁴ Histological evaluation of endometrial biopsy or curettage provides wide list of histomorphological patterns due to normal and abnormal changes like exogenous hormonal effects, infections, hyperplasia and carcinoma. It also helps in further management of patient.⁵

The objective of this study was to determine the frequency of various endometrial pathologies in different age groups with complaints of AUB in reproductive (premenopausal), perimenopausal and menopausal age groups.

MATERIAL AND METHODS

This study was done in two tertiary care hospitals of south Punjab from January 2017 to December 2018. A proforma was designed carefully and it contained all relevant information like age and presenting complaint. Dilatation and curettage/biopsy specimens were included in our study. Non diagnostic cases were also part of study. Cases of AUB in which hysterectomy was done were not included. Cases of molar pregnancy were also excluded. Biopsies were fixed in 10% buffered formalin. Formalin fixed biopsies were grossed, processed, sectioned and stained with haematoxylin and eosin (H & E). Diagnostic microscopy of haematoxylin and eosin stained sections was done by two histopathologists. Histological diagnosis of 148 cases was made. Data was entered in SPSS-17 and statistical analysis was done in the form of mean, standard deviation and frequency.

RESULTS

In 2 year period of January 2017 to December 2018, a total of 148 cases were examined for histopathological diagnosis. All these cases were presented as abnormal uterine bleeding and endometrial biopsy/dilatation and curettage was performed in all these patients. Cases with clinical impression of molar pregnancy and hysterectomy specimens were excluded. The mean age of patients was 42.3±8.5 years. The age was categorized in 3 groups. Majority (54.05%) of the patients were in perimenopausal age group 40–50 years, then second common age group was reproductive age group (12–39 years) having 36.48% cases. The least common group was postmenopausal group (above 50) with 9.4% cases.

Proliferative phase endometrium was commonest histopathological finding followed by secretory endometrium, chronic endometritis, benign endometrial polyp and exogenous hormone effect. Non diagnostic (4 cases) were also present. Four cases of disordered endometrium, 3 cases of gestational endometrium and 2 cases each of atrophic endometrium and stromal and glandular breakdown were noted. Single cases of necrotizing granulomatous inflammation, fungus associated endometritis and simple hyperplasia with atypia were seen.

Most common finding was early and late secretory phase endometrium (12 cases) in reproductive age group, followed by proliferative phase endometrium 11 cases (20%), chronic endometritis (15%) and benign endometrial polyp (15%). Cyclical endometrium (proliferative, early and late secretory) was also leading diagnosis in perimenopausal age group 25 (31%) cases, 11 (14%) cases, and 12 (15%) cases respectively. Chronic endometritis 14 (17%) cases and benign endometrial polyp 7 (9%) cases were major diagnosis in rest of cases like reproductive age group.

Table-1: Frequency of endometrial lesions (n=148)

Diagnosis	Patients
Proliferative phase endometrium	37
Chronic Endometritis	24
Late secretory phase endometrium	19
Benign endometrial polyp	16
Early secretory endometrium	16
Exogenous hormone effect	15
Non Diagnostic/No endometrium obtained	4
Disordered proliferative endometrium	4
Gestational endometrium	3
Atrophic endometrium	2
Glandular and stromal breakdown	2
Menstrual phase endometrium	2
Endometrial carcinoma	1
Morphology favours fungus associated endometritis	1
Necrotizing granulomatous inflammation	1
Simple endometrial hyperplasia with atypia	1

Table-2: Percentage of histopathological findings in reproductive, perimenopausal and postmenopausal age groups [Cases (%)]

Histopathological findings	Reproductive age group	Perimenopausal age group	Postmenopausal age group
Proliferative phase endometrium	11 (20)	25 (31)	1 (7.1)
Chronic Endometritis	8 (15)	14 (17)	2 (14.2)
Disordered proliferative endometrium	2 (4)	2 (2)	
Early secretory endometrium	5 (9)	11 (14)	
Exogenous hormone effect	3 (6)	6 (7)	6 (43)
Gestational endometrium	3 (6)		
Glandular and stromal breakdown	2 (4)		
Late secretory endometrium	7 (13)	12 (15)	
Menstrual phase endometrium	2 (4)		
Fungus associated endometritis	1 (2)		
Necrotizing granulomatous inflammation	1 (2)		
Non diagnostic/No endometrium obtained	1 (2)	1 (1)	2 (14.2)
Benign endometrial polyp	8 (15)	7 (9)	1 (7.1)
Simple endometrial hyperplasia with atypia		1 (1)	
Endometrial carcinoma		1 (1)	
Atrophic endometrium			2 (14.2)

DISCUSSION

Hormonal changes in an ovulatory cycle cause cyclical changes in endometrium. Hence, endometrial sample should be taken at proper time of menstrual cycle. Incomplete clinical information can lead to incorrect diagnosis. Organic cause of AUB can be systemic disease, iatrogenic and reproductive disease. The term Dysfunctional Uterine Bleeding (DUB) is used when no specific cause of AUB can be identified.⁶

Abnormal uterine bleeding should be evaluated for pathologies which can be identified histologically like hormonal imbalance pattern, endometrium showing stromal and glandular breakdown, exogenous hormone effect, endometrial polyp, endometritis, atrophic endometrium, simple endometrial hyperplasia and carcinoma. In developing countries, AUB is very common indication for hysterectomy procedure but specific organic cause could not be established in 40% cases. This hysterectomy procedure is also associated with some

complications like early menopause, infection, bowel or bladder damage and bleeding.⁷

Endometrial biopsy assessment is done to determine the cause of AUB. Histopathological examination of endometrial biopsy or curettage should be done with AUB in a female in which her AUB is not settled with three months course of medicine. Abnormal uterine bleeding renders notable morbidity. However cause of AUB can differ in different parts of world. In our study, total 148 endometrial specimens with abnormal uterine bleeding were evaluated for histopathological findings. Mean age of our study cases was 42.3 ± 8.5 years. Abid, *et al*⁸ in Karachi performed a study on patients of AUB and found mean age of the patients as 40.3 ± 11.06 years which matches with the result of our study. Mean age of the patients were reported to be 45.8 ± 1.53 years in a study by Salvi *et al*.⁹ Sajitha *et al*¹⁰ showed similar findings like our study and majority of their patients were 46–60 years old.

Majority (80/148, 54.05%) of patients with AUB fall in perimenopausal (40–50) age group category in our study. Reproductive age group (12–39 years) (54, 36.48%) and postmenopausal (>50 years) group (14, 9.45%) were following the perimenopausal age group. Doraiswami *et al*¹¹, Muzaffar *et al*¹² and More *et al*¹³ also observed the same findings. AUB was seen early almost a decade in a study by Mitra *et al*¹⁴ and Rajesh Patil *et al*¹⁵ and it was 45.2% and 62% respectively.

Majority of the cases in our study were exhibiting histological features of cyclical endometrium like proliferative, secretory, menstrual phase and atrophic endometrium. Histopathological diagnosis of 37 (25.67%) cases was proliferative endometrium in our study. Anovulatory cycles can be the cause of bleeding in the proliferative phase endometrium. This finding in our study was similar with the result of studies done by Kumari *et al*¹⁶. Secretory endometrium pattern was second commonest pattern in our study and it was observed in 35 (23.64%) cases. Ovulatory dysfunctional bleeding can be the cause of bleeding in secretory phase.

Chronic endometritis was noted in 24 (16%) cases. Intrauterine contraceptive device, pregnancy and abortion can be the cause of acute and chronic nonspecific endometritis. Chronic nonspecific endometritis is relatively more (16%) in incidence. This finding was similar with the results of studies of other authors. Tuberculous endometritis is not common in population of western countries but it is not so uncommon in developing countries.² Histopathological diagnosis of necrotizing granulomatous inflammation one (0.67%) and fungus associated endometritis one (0.67%) was noted in our study.

Total 16 (10.8%) cases of benign endometrial polyp were present in our study. This percentage of benign endometrial polyp in our study was similar with the study of Abid *et al*⁸ and Masood *et al*⁷ in which

benign endometrial polyp was 14% and 8.7% respectively. Benign endometrial polyp in our study showed decreasing 15%, 9%, and 8% frequency of distribution in reproductive, perimenopausal and postmenopausal age group. This was in contrast with the results of Azim *et al*¹⁷ where frequency of polyp was increasing with increasing age.

Exogenous hormone effect was noted in 15 (10.1%) cases, 4 (2.7%) non diagnostic cases, 3 (2.02%) cases of gestational endometrium, 2 (1.35%) cases of atrophic endometrium and 2 (1.35%) cases were reported as stromal and glandular breakdown in our study.

Disordered proliferative endometrium was observed in 4 (2.7%) cases. Histopathological diagnosis of simple hyperplasia with atypia (1, 0.67%) and endometrial carcinoma (1, 0.67%) were encountered in premenstrual age group of our study. Diabetes, sedentary life style, obesity, increased animal fat use is the risk factors which are related with the increased incidence of endometrial hyperplasia. It is important to identify endometrial hyperplasia because it is considered to be precursor of endometrial carcinoma. These findings are almost similar to Dadhanian *et al*¹⁸.

Histopathological diagnosis of non-diagnostic/no endometrium obtained was given in 17% cases of postmenopausal age group. Histopathological assessment in these cases was inconclusive.

CONCLUSION

Microscopic study of endometrial tissue is important to diagnose various histomorphological patterns in all age group women presenting with AUB. We observed variety of histomorphological patterns in women with complaints of AUB encompassing spectrum of normal endometrium to malignancy in our study.

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