



Clinicopathological study of abnormal uterine bleeding: A two-year study at tertiary care center

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ABSTRACT

Background

Histopathological assessment of endometrial samples plays a crucial role in the diagnosis of abnormal uterine bleeding (AUB). The present study was conducted to assess histopathology of endometrium with AUB.

Methods

It is a prospective study conducted in the Department of Pathology, Dr Shankarrao Chavan, Government Medical College, Nanded, Maharashtra, India. All cases attending Gynaecology OPD with AUB were included in study. The sample received was Dilatation & Curettage (D&C) samples, endometrial biopsy, polypectomy and hysterectomy specimen. Specimens were routinely processed and stained with Haematoxylin & Eosin stains and microscopic morphological evaluation was done and data recorded and analysed.

Results

We studied 680 cases. Out of which 661 cases showed significant findings and 19 were reported unsatisfactory samples for evaluation. The commonest histomorphological pattern in these patients were proliferative endometrium 248(36.47%), leiomyoma 100 (14.70%), adenomyosis 90 (13.23%), endometrial hyperplasia 72 (10.58%), secretory endometrium 47(6.91%), atrophic endometrium 40 (6.91%), endometritis 11 (1.61%), endometrial polyp 27(3.97%), adenomyosis with leiomyoma were seen in 23 cases (3.66%) and least number cases were of endometrial carcinoma forming 3(0.44%) of the total cases taken in the study.

Conclusions

Histopathological examination of endometrium in patient of AUB shows a wide spectrum of changes ranging from normal endometrium to malignancy. Accurate analysis of endometrial sampling is important in management of AUB.

Keywords: AUB, Endometrium, Leiomyoma, Menorrhagia

INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as changes in frequency of menstruation, duration of flow or amount of blood loss.¹ AUB interferes significantly with the quality of life in otherwise healthy women with various distressing symptoms like menorrhagia, polymenorrhea and metrorrhagia.²⁻⁴ The cause of AUB varies according

to the age, endometrial response to hormones and their variations and other structural lesions.⁵

AUB can be due to functional disturbances referred to as dysfunctional uterine bleeding and organic pathologic conditions, such as chronic endometritis, endometrial polyps, endometrial hyperplasia, submucosal leiomyoma or endometrial neoplasm.⁶

Currently the most commonly used technologies for outpatient evaluation of the endometrium are biopsy, hysteroscopy, and Trans Vaginal Ultrasound (TVS). Endometrial biopsy by Dilatation and Curettage or office endometrial biopsy is considered the gold standard in AUB.⁷

Hysterectomy is one of the most common surgical procedures in gynaecology worldwide. It is one of the major methods of surgical management of abnormal uterine bleeding.⁸

METHOD AND MATERIALS

The present study "Clinicopathological study of abnormal uterine bleeding" was undertaken in the Department of Pathology, Dr Shankararo Chavan, Government Medical College, Nanded, Maharashtra, India.

The study design was Prospective study. The duration of study: January 2011-December 2012. Approval from the institutional ethical committee and from Maharashtra university of health sciences (MUHS), Nashik was taken before commencing study. The present study included histopathological examination of surgical specimens like endometrial biopsies, D & C samples, hysterectomy specimens and polypectomy specimens at the department of pathology in our institute.

The detailed clinical history was taken from the case records which included following parameters age,

and parity, dominant clinical pattern of abnormal bleeding, radiological findings, operative findings, and clinical diagnosis.

The inclusion criteria included women of all age group attending Gynaecology OPD with chief complaint of AUB while the exclusion criteria involved pregnancy related causes and gestational trophoblastic disease

The surgical specimen and biopsies were fixed in 10 % neutral buffer formalin, gross examination of the specimen was done, for assessing the appearance and extent of lesion. In case of endometrial biopsies, D & C samples whole tissue was submitted and in hysterectomy specimen the sections were taken in following orders i.e. Endometrium, myometrium, cervix and associated lesion. Sections were processed according to standard protocol and stained with H & E stains and special stains were done whenever necessary. The clinical and histopathological data obtained was analyzed.

RESULTS

In this study spanning from January 2011 –December 2012, 680 cases of abnormal uterine bleeding were collected from Gynaecology OPD & ward. The distributions of nature sample shown in Table 1. Out of 680 cases 661 were endometrial lesions and in 19 cases no diagnosis given because of inadequate sample of D & C material, hence excluded from study.

Table 1 Distribution of Nature of Sample (n=680)

Nature of sample	No of Specimen	Percentage
Endometrial biopsy, D & C sample	367	53.97%
Hysterectomy	286	42.05%
Polypectomy	27	3.97%
Inadequate sample	19	2.79%
Total	680	100%

Among the 680 cases, the majority of cases were in the age group 41-50 of years i.e. 271 cases

(40.90%), followed by 193 cases (27.98%) belonging to 31-40 years of age (Table 2).

Table 2 Distribution of Cases according to Age Group (n=661)

Age Group	No of Cases	Percentage (%)
21-30	80	12.10%
31-40	193	27.98%
41-50	271	40.90%
51-60	81	12.25%
61-70	33	4.99%
71-80	03	0.45%
Total	661	100

The incidence of AUB was high in grand multipara 319 (39.88%) cases and in parity III 264 (33%) cases. This indicates that the incidence of AUB increases as parity increases. In present study predominant pattern of AUB were reported as menorrhagia 338

cases (51.13%), followed by intermenstrual bleeding in 115 cases (17.39%), polymenorrhagia in 79 cases (11.95%), while metrorrhagia was seen in 73 cases (11.04%) (Table 3).

Table 3 Distribution of Bleeding Pattern according to Age Group

Age Group	Menorrhagia	Metrorrhagia	Polymenorrhagia	Menormetrorrhagia	Intermenstrual Bleeding	Total
21-30	26	10	17	13	14	80
31-40	94	28	20	14	37	193
41-50	162	18	28	21	42	271
51-60	33	13	13	7	15	81
61-70	22	4	1	1	05	33
71-80	1	0	0	0	2	3
Total	338(51.13%)	73(11.04%)	79(11.95%)	56(8.47%)	115(17.39%)	661

Spectrum of endometrial findings, found in present study were proliferative endometrium was the most frequent finding 248 (36.47%), leiomyoma comprised of 100 cases (14.70%), adenomyosis 90 cases (13.23%), endometrial hyperplasia 72 cases (10.58%), secretory endometrium 47 cases (6.91%), atrophic endometrium 40 cases (5.88%), endometrial polyp 27 cases (3.97), endometritis 11 cases (1.61%), endometrial carcinoma 3 cases (0.44%) (Table 4).

Out of 11 cases of endometritis, 10 cases (90.90%) were of chronic endometritis and 1 case (9.09%) of tubercular endometritis. Total of 661 cases, 72 cases were endometrial hyperplasia. Out of 72 cases hyperplasia without atypia constitutes 59 (81.94%) and Atypical hyperplasia constitutes 13 cases (18.05%).

Table 4 Age Wise distribution of Endometrial Lesions

Age Group	21-30	31-40	41-50	51-60	61-70	71-80	Total
Proliferative endometrium	40	76	92	33	7	00	248(36.47%)
Secretory endometrium	08	14	22	03	00	00	47(6.91%)
Atrophic endometrium	00	8	5	13	11	03	40(5.88%)
Endometritis	3	3	5	00	00	00	11(1.61%)
Endometrial hyperplasia	8	20	28	11	5	00	72(10.58%)
Adenomyosis	4	26	41	13	06	00	90(13.23%)
Adenomyosis with leiomyoma	2	6	14	1	00	00	23(3.38%)

Leiomyoma	14	30	51	03	02	00	100(14.70%)
Endometrial polyp	1	10	13	03	00	00	27(3.97%)
Carcinoma of endometrium	00	00	00	01	02	00	3(0.44%)
Inadequate sample	05	04	03	03	04	00	19(2.79%)
Total	80	193	271	81	33	03	680(100%)

DISCUSSION

AUB accounts for almost 25% of gynaecological operations and 20% of outpatient visits.³ Total 661 cases of AUB were studied to establish various causes of AUB and to analyse distribution of histopathological findings with various age group. Detail clinical data were noted from case records, which included age, parity, presenting complaints, associated complaints, operative finding and diagnosis.

In present clinicopathological study, AUB was commonly seen among 40-50 years of age group i.e. 271 cases (40.90%), similar occurrence was reported by Bhatta S at el, Sandeepa S et al, Mahapatra M et al, Rajagopal I et al, Sharma R. et al which shows maximum number of cases were in similar age range comprised of 48 cases (39.34%), 122(76.72%), 53(38%) 81(48.5%),87(47.5%) respectively (Table 5).

Table 5 Comparison of Age Range with Different Studies

Studies	Age range	No of cases
Bhatta S at el ⁴	41-50	48(39.34%)
Sandeepa S et al ⁶	41-50	122 (76.72%)
Mahapatra M et al ⁹	41-50	53(38%)
Rajagopal I et al ¹⁰	41-50	81(48.5%)
Sharma R. et al ¹¹	41-50	87(47.5%)
Present Study	41-50	271(40.90%)

The most common bleeding pattern encountered in present study was menorrhagia 338(51.13%) which is comparable with the study by Mahapatra M et al & Rojagopal I et al.

Table 6 represent the summary of various endometrial lesions and patterns of endometrium in AUB. The most common cyclic endometrial pattern seen in present study was proliferative endometrium 248 cases (36.47%) [Fig 1], which was comparable

with studies done by Sharma R et al 71 cases(38.8%), Sandeepa S et al 62 cases(38.99%) & Mahapatra M et al 64 cases (45.70%) however Rajagopal I et al had lower incidence of proliferative pattern endometrium 15 cases (8.9%). This is followed by leiomyoma 100(14.70%) cases with maximum no of patients falling in age group of 31-40 years which is comparable with study done by Ramachandran T et al¹² 56 cases (22.9%). However, study done by V. R SR et al¹³ had higher incidence of (54%).

Table 6 Comparison of Endometrial Lesions with Different Studies

Endometrial Patterns	Present study	Sharma R. et al	Sandeepa S et al	Rajagopal I et al	Mahapatra M et al
Proliferative endometrium	248(36.47%)	71(38.8%)	62(38.99%)	15(8.9%)	64(45.70%)
Secretory endometrium	47(6.91%)	30(16.3%)	20(12.57%)	40(23.9%)	42(30%)
Atrophic endometrium	40(5.88%)	08 (4.4%)	6(3.77%)	19(11.3%)	7(5.00%)
Endometritis	11(1.61%)	06(3.3%)	3(1.88%)	-	

Endometrial hyperplasia	72(10.58%)	22(12.0%)	59(37.10 %)	38(22.6%)	17(12.10%)
Adenomyosis	90(13.23%)	-	-	-	-
Adenomyosis with leiomyoma	23(3.38%)	-	-	-	-
Leiomyoma	100(14.70%)	-	-	-	-
Endometrial polyp	27(3.97%)	04(2.2%)	-	-	05(3.60%)
Carcinoma of endometrium	3(0.44%)	02(1.1%)	5(3.14%)	3(1.7%)	01(0.70%)
Inadequate sample	19(2.79%)	11(6.0%)	-	-	-

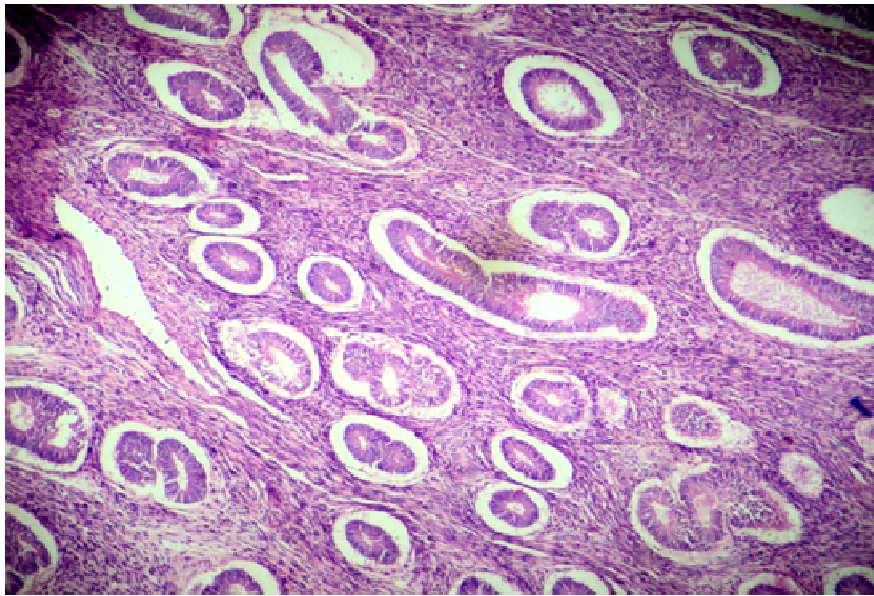


Fig 1 Proliferative endometrium showing round tubular glands lined by columnar cell and dense cellular stroma (H & E, 10 X)

The third commonest lesion was endometrial hyperplasia [Fig 2] observed in 72(10.58%) cases with its maximum number of patients falling in the age group of 31 to 40 years which is comparable with study done by Sharma R et al 22(12.0%) and is in discordance with the studies done by Sandeepa S et al 59 (37.10 %), Rajagopal I et al 38 (22.6%), who observed a high incidence of endometrial hyperplasia. Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma.³ Postmenopausal bleeding is frequently associated with an atrophic endometrium.

The number of cases with atrophic endometrium [Fig 3] constitutes 40 cases (5.88%) in present study which is concordance with study done by Sharma R et al, Sandeepa S et al, Mahapatra M et al. Endometritis was seen in 11 cases (1.61%), out of which 1 case showed necrotizing granulomatous endometritis i.e caseating granulomas, Langhans type of giant cells, areas of necrosis [Fig 4] & remaining 10 cases showed chronic endometritis (Fig 5). In this study endometrial carcinoma [Fig 6] constituted only 3 (0.44%) of cases. A similar incidence was reported by Mahapatra M et al 01(0.70%). The concomitant lesion seen in 23 (3.66%) which constitute adenomyosis with leiomyoma.

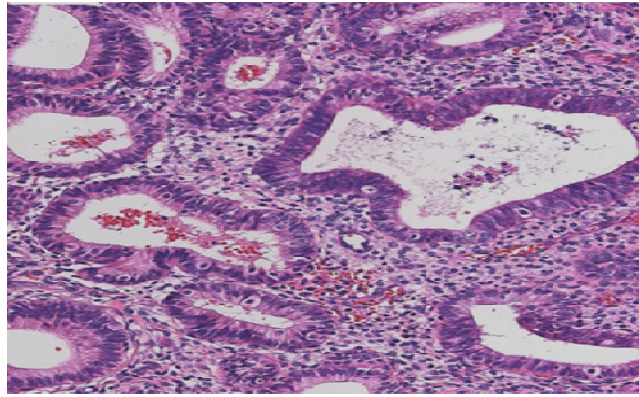


Fig 2 Atypical hyperplasia: very closely packed irregular-shaped endometrial gland separated by hyperplastic endometrial stroma. Glands are lined by hyperchromatic epithelium with nuclear atypia (H & E , 10 X)

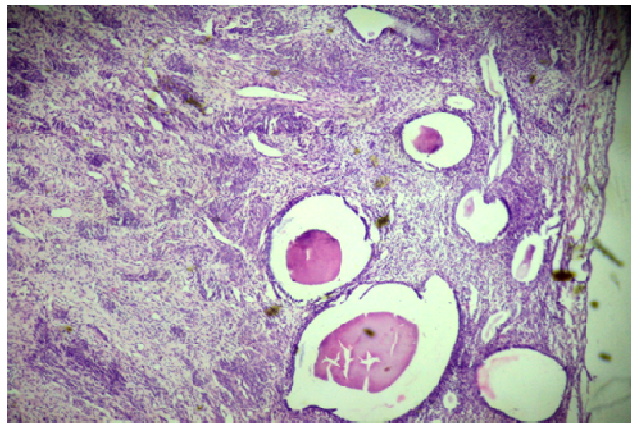


Fig 3 Atrophic endometrium showing cystically dilated endometrial glands with flattened epithelium (H&E, 10 X)

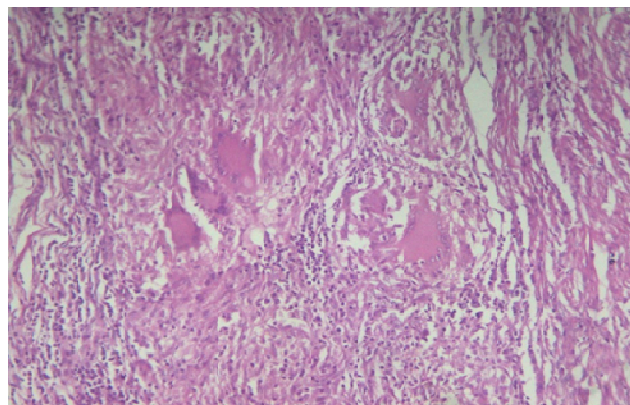


Fig 4 Chronic granulomatous endometritis showing granulomas with langhan's giant cells (H & E, 10X)

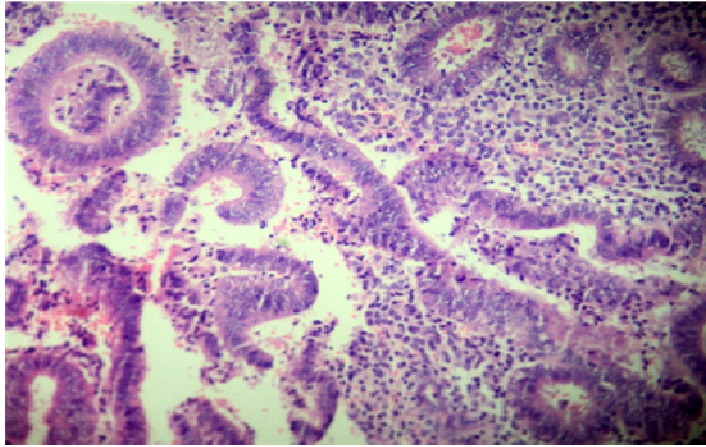


Fig 5 Chronic nonspecific endometritis showing lymphocytes and plasma cells in stroma and lumen of endometrial glands (H & E, 10 X)

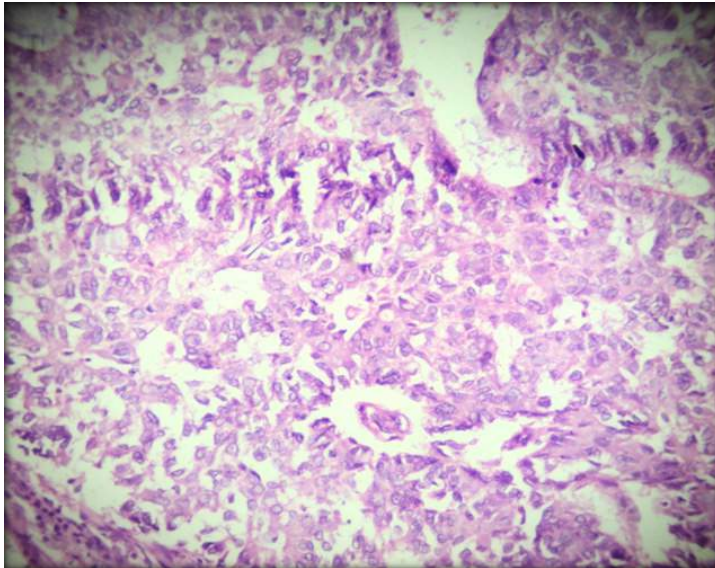


Fig 6 Well differentiated adenocarcinoma of endometrium showing tumor tissue composed of numerous, small, crowded glands with varying degrees of nuclear atypia. (H & E, 10 X)

CONCLUSION

Endometrial sampling is a simple cost effective and appropriate method that provides accurate diagnostic step in abnormal uterine bleeding. Histopathological examination of endometrium in patient of AUB shows a wide spectrum of changes ranging from normal endometrium in various hormonal cycles to malignancy. AUB needs thorough and prompt evaluation as it could be the only clinical manifestation of endometrial malignancy.

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