



STUDY OF HISTOPATHOLOGICAL PATTERNS OF ENDOMETRIUM IN ABNORMAL UTERINE BLEEDING

Pathology

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ABSTRACT

Abnormal uterine bleeding (AUB) is considered one of the most common and challenging problems presenting to the gynaecologist. Histopathological examination of endometrial biopsy is gold standard diagnostic tool in evaluation of AUB. The aim of this study is to determine the spectrum of endometrial pathologies in different age group patients presenting with AUB. **Materials And Methods:** This study on Abnormal Uterine Bleeding which was a prospective study was conducted in the Department of Pathology, Government Medical College and Associated Group of Hospitals, Kota for a period of one year (January 2025- December 2025). A detailed histological study was carried out and the findings were noted. **Results:** Out of the 360 cases studied, the majority of biopsies were in the age group of 31-40years (40.2%). Most of the patients presented with complaints of menorrhagia (58.6%). The most common histological pattern observed were endometrium in proliferative phase (42.2%) followed by secretory phase (30.5%). Disordered proliferative phase was 12.2%. Eight cases of endometrial carcinoma were reported during the present study period. **Conclusion:** Histopathological examination of endometrium is gold standard diagnostic tool in evaluation of AUB. The most common clinical presentation is menorrhagia. The commonest histopathological pattern is proliferative endometrium followed by secretory phase. Histopathological examination of endometrium in patient of AUB shows a changes ranging from normal endometrium to malignancy.

KEYWORDS

Abnormal uterine bleeding (AUB); Menorrhagia

INTRODUCTION

Abnormal uterine bleeding is defined as any bleeding pattern that differs in the frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause. It is a common problem having a long list of causes in different age groups.¹ Abnormal uterine bleeding is the commonest presenting symptom and major gynecological problem responsible for as many as one-third of all outpatient gynecological visit.²

AUB is associated with wide variety of endometrium. The endometrial sampling is chosen to evaluate AUB because it is relatively inexpensive and accurate as an outpatient procedure and has several advantages over other diagnostic methods. The only disadvantage is that, it is an invasive procedure. The hormonal assay is very expensive and laboratories with hormonal assay are not available in rural areas.

Ultrasonography clearly depicts the uterine contour and the status of the ovary, but fails to provide adequate information regarding the endometrium, except in atrophy and hyperplasia. Other investigations like hysteroscopy and hysterosalpingography are mainly helpful in diagnosing organic pathology.³

MATERIALS AND METHODS

This study on Abnormal Uterine Bleeding which was a prospective study was conducted in the Department of Pathology, Government Medical College and Associated Group of Hospitals, Kota for a period of one year (January 2025- December 2025).

All female patients with symptoms of Abnormal uterine bleeding attended as Outpatients and admitted in the Inpatient wards of Department of Obstetrics and Gynaecology, Government Medical College and Associated Group of Hospitals, Kota were the subjects of this study.

Inclusion Criteria:

Patients of all age groups presenting with Abnormal uterine bleeding.

Exclusion Criteria:

Patients presenting with Pregnancy related complications, bleeding due to non endometrial causes like lesions of the myometrium and adnexa, due to Hemostatic disorders, Systemic causes and Iatrogenic causes.

The endometrial samples obtained from endometrial biopsy or from

dilatation & curettage for therapeutic or diagnostic purpose was fixed in 10% buffered formalin for 12-24 hours and the entire tissue was taken for routine tissue processing. Three to five micron thick sections were made from paraffin embedded blocks and stained with Haematoxylin and Eosin (H&E) and studied under light microscopy.

RESULTS

This study was conducted in the Department of Pathology, Government Medical College and Associated Group of Hospitals, Kota for a period of one year (January 2025- December 2025).

Among the 360 cases, the majority of cases were in the age group 36-40 years i.e. 84 cases (23.3%), followed by 78 cases (21.6%) belonging to 41-50 years of age (Table 1).

Table No 1: Distribution Of AUB Cases According To Age

Age group	No. of Cases	Percentage
<20	7	1.9
21-25	14	3.8
26-30	36	10
31-35	61	16.9
36-40	84	23.3
41-45	78	21.6
46-50	50	13.8
>50	30	8.3
Total	360	100

Table No 2: Relationship Of AUB With Parity

Type of parity	No. of cases	Percentage
Nullipara	35	9.7
Multipara(1-3)	242	67.2
Grand multipara	83	23
Total	360	100

The incidence of AUB was found to be highest in multiparous women 242 cases (67.2%) followed by 83 cases (23%) in grandmultiparous women and least in nulliparous women 35cases (9.7%).

Table No 3: Distribution Of Bleeding Patterns In AUB

Types of Bleeding	No. of Cases	Percentage
Menorrhagia	212	58.8
Metrorrhagia	52	14.4
Menometrorrhagia	34	9.4

Polymenorrhea	20	5.5
Oligomenorrhea	12	3.3
Post Menopausal bleeding	30	8.3
Total	360	100

Menorrhagia was the most common symptom accounting for 212 cases (58.8%)

followed by metrorrhagia accounting for 52 cases (14.4%), menometrorrhagia, post menopausal bleeding and polymenorrhea accounting for 34 cases (9.4%), 30 cases (8.3%) & 20 cases (5.5%) respectively with the least being oligomenorrhea 12 cases (3.3%).

Table No 4: Distribution Of Histopathological Patterns In AUB

Type of Endometrium	No. of cases	Percentage
Proliferative phase	152	42.2
Secretory phase	110	30.5
Disordered Proliferative phase	44	12.2
Simple Hyperplasia without Atypia	10	2.7
Complex Hyperplasia with Atypia	1	0.2
Endometritis	5	1.3
Atrophic endometrium	4	1.1
Mixed phase	2	0.5
Polyp	15	4.1
Adenocarcinoma	8	2.2
Tuberculosis	1	0.2
Inadequate	8	2.2
Total	360	100

Proliferative phase was the most common histopathological pattern accounting for 152 cases (57.8%) followed by secretory phase 88 cases (19.1%), simple hyperplasia without atypia 36 cases (7.8%) and the least commonly seen were mixed phase 4 cases (0.8%), atrophic endometrium 3 cases (0.6%) and complex hyperplasia with atypia 2 cases (0.4%).

DISCUSSION

Table No 5: Comparative Study Of Age Incidence

Aut hors	No. of cases	<20 years		21-30 years		31-40 years		41-50 years		>50 years	
		Total	%	Total	%	Total	%	Total	%	Total	%
Sutherland ⁴ (1950)	1000	36	3.6	242	24.2	343	34.3	362	36.2	17	1.7
Anusuya Das ⁸ (1964)	117	17	14.5	24	20.5	33	28.2	38	32.5	5	4.3
Bhattacharji ⁹ (1964)	164	14	8.5	50	30.5	56	34.2	44	26.8	-	-
Wagh & Swamy ¹⁰ (1964)	552	97	17.6	215	39	143	25.9	94	17	3	0.5
Mehrotra ⁵ (1972)	150	15	10	72	48	35	23.3	25	16.7	3	2
Muzaffar ⁶ (2005)	260	-	-	33	12.7	102	39.2	125	48.1	-	-
Saraswati ⁷ (2011)	409	6	1.5	85	20.8	116	28.4	137	33.5	65	15.8

Rajesh ¹¹ (2013)	190	7	3.68	39	20.53	86	45.26	49	25.79	9	4.74
Present study	360	7	1.9	50	13.8	145	40.2	128	35.4	30	8.3

The highest incidence of AUB was noted in the 31-40 years age group in the present study which is in concordance with the results of the studies by Bhattacharji⁹ (1964), Rajesh P¹¹ et al (2013) and Abid¹³ et al (2014) whereas Sutherland⁴ (1950), Muzaffar M⁶ (2005), Saraswati D⁷ (2011) reported maximum incidence in 41-50 years age group, Mehrotra⁵ (1972) and Wagh & Swamy¹⁰ (1964) reported maximum incidence in 21-30 years age group.

Considering these discrepancy in observations, one may conclude that, any age after menarche is not exempt from AUB. The highest incidence of AUB was seen in the reproductive age group (21-40 years) in the present study (54%) which is in concordance with the results of the studies by Sutherland⁴ (58.5%) and Mehrotra VG⁵ et al (71.3%).

Table No 6: Parity And Abnormal Uterine Bleeding

Parity	Sadia Khan ¹² (2011)		Rajesh Patil ¹¹ (2013)		Present Study	
	No. of cases	%	No. of cases	%	No. of cases	%
Nullipara	27	5.4	9	4.74	35	9.7
Multipara (1-3)	270	35.6	136	71.58	242	67.2
Grandmultipara (>4)	203	40.6	27	14.21	83	23
Total	500	100	190	100	360	100

In the present study, the highest incidence of AUB was seen in multiparous women 242 cases (67.2%), which is in concordance with the results of the studies by Bhattacharji⁹ (46%), Devi PK¹⁴ (48.6%), Pillai¹⁵ (87%), Mehrotra VG⁵ (46%) and Sadia K¹² (54%).

The lowest incidence was seen in nulliparous women in the present study 35 cases (9.7%) which is in concordance with the results of the studies by Mehrotra⁵ et al (20%), Anusuya Das⁸ (18%), Bhattacharji⁹ (18.8%) and Sadia K¹² (5.4%) which also showed lesser incidence of AUB in Nulliparous women.

Even though nulliparity is more common risk factor for AUB, our study showed that the incidence of AUB was highest in multiparous women 67.2% which may be attributed to other risk factors such as Obesity, Emotional stress, OCPs & Hormonal replacement therapies (HRT) which are more common in Multiparous women than in Nulliparous women.

Table No 7: Comparative Study Of Types Of Bleeding And AUB

Bleeding Pattern	Mehrotra VG ⁵		Present Study	
	No of cases	Percentage	No. of cases	Percentage
Menorrhagia	78	52	212	58.8
Metrorrhagia	29	19.3	52	14.4
Menometrorrhagia	-	-	34	9.4
Polymenorrhea	39	26	20	5.5
Oligomenorrhea	-	-	12	3.3
Post menopausal bleeding	4	2.7	30	8.3
Total	150	100	360	100

In the present study, Menorrhagia was the commonest type of bleeding 212 cases (58.8%) followed by metrorrhagia (14.4%), menometrorrhagia (9.4%), postmenopausal bleeding (8.3%), polymenorrhea (5.5%) and oligomenorrhea (3.3%) in that order, whereas the study done by Mehrotra VG⁵ showed menorrhagia (52%) was the commonest type of bleeding similar to our study which was followed by polymenorrhea (26%), metrorrhagia (19.3%) and postmenopausal bleeding (2.7%).

Table No 8: Comparative Study Of Incidence Of Menorrhagia In AUB

Authors	Cases	Percentage
Mehrotra ⁵ (1972)	78/150	52%
Sadia k ¹² (2011)	289/500	57.8%

Rajesh ¹¹ (2013)	139/190	73.1%
Present study	211/360	58.6%

In the present study, Menorrhagia was the commonest type of bleeding 211 cases (58.6%) which is concordance with the study done by Mehrotra VG⁵ which showed menorrhagia (52%) as the commonest type of bleeding. Menorrhagia was also the most common bleeding type in both Sadia Khan¹² et al (57.8%) and Rajesh¹¹ et al (73.1%) series.

Table No 9: Comparative Study Of Histopathological Patterns In AUB

Type of Endometrium	Sadia K ¹² et al		Present study	
	Cases	%	Cases	%
Proliferative phase	233	46.6	152	42.2
Secretory phase	192	38.4	110	30.5
Disordered Proliferative	-	-	44	12.2
Simple Hyperplasia without atypia	32	6.4	10	2.7
Simple Hyperplasia with atypia	12	2.4	-	-
Complex Hyperplasia without atypia	14	2.8	-	-
Complex Hyperplasia with atypia	-	-	1	0.2
Endometritis	2	0.4	5	1.3
Atrophic endometrium	5	1	4	1.1
Mixed phase	-	-	2	0.5
Polyp	3	0.6	15	4.1
Adenocarcinoma	2	0.4	8	2.2
Tuberculosis	-	-	1	0.2
Inadequate	-	-	8	2.2
Total	500	100	360	100

In the present study Proliferative phase 152 cases(42.2%) was found to be the most common histological pattern followed by secretory phase (30.5%), simple hyperplasia without atypia (2.7%), disordered proliferative phase (12.2%), endometrial polyp(4.1%), endometrial adenocarcinoma (2.2%), endometritis (1.3%), mixed endometrium (0.5%), atrophic endometrium (1.1%), tuberculosis (0.2%) and complex Hyperplasia with atypia (0.2%) which is concordance with the study done by Sadia Khan¹² et al, which showed proliferative phase was the most common histological pattern comprising 233 cases (46.6%) followed by secretory phase(38.4%), simple hyperplasia without atypia (6.4%), simple hyperplasia with atypia (2.4%), complex hyperplasia without atypia (2.8%), atrophic endometrium (1%), endometrial polyp (0.6%) & 0.4% each of endometritis and endometrial adenocarcinoma.

REFERENCES

1. Ely JW, Kennedy CM, Clark EC, Bowdler NC. Abnormal Uterine Bleeding: A Management Algorithm. J Amer Board Fam Med 2006; 19: 590-602.
2. Awwad JT, Toth TL, Schiff I. Abnormal uterine bleeding in the Perimenopause. Int J Fertil Menopausal Stud., 1993; 38(5):261-269.
3. Hunter DC, McClure N. Abnormal uterine bleeding: an evaluation endometrial biopsy, vaginal ultrasound and outpatient hysteroscopy. The Ulster Medical Journal. 2001; 70(1): 25-30.
4. Sutherland AM. Recent Advances in Obstetrics and Gynecology, 1962; 365-381.
5. Mehrotra VG, Mukerjee K, Pandey M, Samanth V. Functional uterine bleeding (A review of 150 cases). J Obstet Gynaecol India. 1972; 22: 684-9.
6. Muzaffar M, Akhtar KAK, Yasmin S, Mahmood-ur-Rehman, Iqbal W, Khan MA. Menstrual Irregularities with excessive blood loss: a Clinico-Pathological Correlation. J Pak Med Assoc. 2005; 55(11): 486-9.
7. Saraswathi D, Thanka J, Shalineer R, Aarathi R, Jaya V, Kumar PV. Study of Endometrial Pathology in Abnormal Uterine Bleeding. Journal of Obstetrics and Gynecology of India. 2011 July-August; 61(4): 426-430.
8. Anusuya D, Chugh S. Dysfunctional uterine Bleeding – A Clinico- pathological Study. J Obstet and Gynecol India. 1964; 14(2):343-7.
9. Bhattacharji SK. Dysfunctional Uterine bleeding Correlation of endometrial pattern with clinical behavior. J. Obstet and Gynecol India. 1964; 14(2): 372-9.
10. Wagh KV, Swamy V. Functional uterine Haemorrhage. J Obstet and Gynecol India. 1964; 14: 87-392.
11. Patil R, Patil RK, Andola SK, Laheru V, Bhandar M. Histopathological spectrum of endometrium in dysfunctional uterine bleeding. Int J Bio Med Res. 2013; 4(1): 2798-801.
12. Khan S, Hameed Sadia, Umber A. Histopathological Pattern of Endometrium on Diagnostic D & C in patients with Abnormal Uterine Bleeding. Annals 2011; 17(2): 166-70.
13. Abid et al.: Clinical pattern and spectrum of endometrial pathologies in patients with abnormal uterine bleeding in Pakistan: need to adopt a more conservative approach to treatment. BMC Women's Health 2014 14:132.
14. Devi, PK, Sutaria UD. Functional uterine Bleeding (A clinical and histological Study of 357 Cases. J Obstet and Gynecol India. 1964; 14(2): 355-9.
15. Pillai GS, Sethi B, Dhaded AV, Mathur PR. Dysfunctional Uterine Bleeding (Study of 100 cases). J Obstet Gynaecol India. 2002; 52(3): 87-9.