

HISTOPATHOLOGY OF ENDOMETRIAL CURETTINGS IN PERIMENOPAUSAL WOMEN WITH ABNORMAL UTERINE BLEEDING

Thukkaram Chitra¹, Sekar Manjani², Ramamurthy Madhumitha³, Arun B. Harke⁴, Ekambaranathan Saravanan⁵, Sigamani Karthik⁶, Balakrishnan Shabana⁷

¹Professor & HOD, Department of Pathology, Karpaga Vinayaga Institute of Medical Sciences & Research Centre, Kanchipuram.

²Final Year Post Graduate Student, Department of Pathology, KIMS.

³Final Year Post Graduate Student, Department of Pathology, KIMS.

⁴Professor, Department of Pathology, KIMS.

⁵Associate Professor, Department of Pathology, KIMS.

⁶Assistant Professor, Department of Pathology, KIMS.

⁷Assistant Professor, Department of Pathology, KIMS.

ABSTRACT

BACKGROUND

Abnormal Uterine Bleeding (AUB) is one of the common complaints in the Gynaecology Outpatient Department. Endometrial sampling by dilatation and curettage is done to find out the aetiology of AUB in perimenopausal women.

OBJECTIVES

The aim of the study is to find out common histopathological diagnosis of endometrial samples of perimenopausal women with AUB and to categorize the causes in relation to clinical presentation.

RESULTS

The prospective study was done at the Department of Pathology, Karpaga Vinayaga Institute of Medical Sciences, during the period from June 2013 to August 2015. Perimenopausal women (41-50 yrs.) with AUB were included in the study. The commonest clinical presentation was menorrhagia followed by metrorrhagia. Endometrial samples of all 74 perimenopausal women with AUB were evaluated by histopathological examination. The commonest histopathological finding was proliferative endometrium (23%) followed by simple hyperplasia (16.2%), secretory endometrium (14.9%) and complex hyperplasia (10.8%). Endometrial carcinoma was diagnosed in 2 patients (2.7%).

CONCLUSION

Endometrial causes of AUB evaluated by histopathological examination of curettings revealed that proliferative and secretory endometrium was the commonest diagnosis followed by simple hyperplasia.

KEYWORDS

AUB – Abnormal Uterine Bleeding; DUB – Dysfunctional Uterine Bleeding.

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INTRODUCTION

Abnormal Uterine Bleeding (AUB) is defined as any uterine bleeding that is more than the normal volume, of longer duration and varying in regularity or frequency. Nearly, 30% of all gynaecological outpatient attendants are for AUB.⁽¹⁾

Abnormal Uterine Bleeding (AUB) is a collective terminology that includes both organic and non-organic causes. Dysfunctional Uterine Bleeding (DUB) is a subgroup of AUB that includes abnormal bleeding due to non-organic causes. It is present in 50% of the women with AUB. An endometrial biopsy is usually done for abnormal uterine bleeding to rule out organic pathology. Age and menstrual history are particularly important, because the aetiologies of abnormal uterine bleeding differ according to the age and menstrual status.⁽²⁾

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Corresponding Author:

Thukkaram Chitra,

Professor and HOD,

Department of Pathology,

Karpaga Vinayaga Institute of Medical Sciences & Research Centre,

GST Road, Chinna Kolambakkam,

Palayanoor Post, Maduranthagam Tk.,

Kanchipuram-603308.

E-mail: drchitrathukkaram@gmail.com

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AIMS AND OBJECTIVES

The aim of the study is to determine the histopathological patterns of endometrial curettings in perimenopausal women with abnormal uterine bleeding.

METHODOLOGY

The prospective study was conducted at the Department of Pathology at Karpaga Vinayaga Institute of Medical Sciences, Chinna Kolambakkam for a period of two years from August 2013 to September 2015. The study was approved by the Institutional Ethics Committee. The study was conducted on 74 consecutive endometrial samples obtained from perimenopausal women by dilatation and curettage.

Patients in the perimenopausal age group presenting to the Gynaecology OPD with symptoms of abnormal uterine bleeding were selected. Complete history including drug history was taken. A complete general examination was done. Routine investigations like complete blood count, bleeding time, clotting time and chest X-ray were done. Ultrasound abdomen and pelvis was performed by an experienced sonologist.

CRITERIA

Patients with abnormal vaginal bleeding aged 41-50 yrs. (Perimenopausal) years who presented to the Gynaecology Department were included. Patients with systemic diseases,

IUCD in situ, incomplete history, inadequate samples, bleeding and coagulation defects were excluded.

COLLECTION OF SPECIMEN

Patients recruited into the study were admitted and endometrial curettage was performed by a gynaecologist. The tissue samples were received in 10% formalin and sent to the pathology department. After routine processing, tissue sections of 4-6 microns were cut and stained with eosin and haematoxylin. The slides were seen under the light microscope by pathologists and studied for their histomorphological patterns.

RESULTS

A total of 74 perimenopausal women underwent diagnostic D and C for AUB during the study period and the curettage was submitted for histopathological examination.

Sl. No.	Pattern of Bleeding	Total	%
1	Menorrhagia	43	58.1
2	Metrorrhagia	22	29.7
3	Menometrorrhagia	7	9.5
4	Polymenorrhea	2	2.7
Total		74	100

Table 1: Pattern of Bleeding in Perimenopausal patients presenting with AUB

Analysis of the pattern of bleeding (Table 1) revealed that menorrhagia (58.1%) is the most common complaint in the perimenopausal age group followed by metrorrhagia (22%).

Cause of AUB	Total	%
Functional causes	41	55
Organic lesions	33	45
Total	74	100

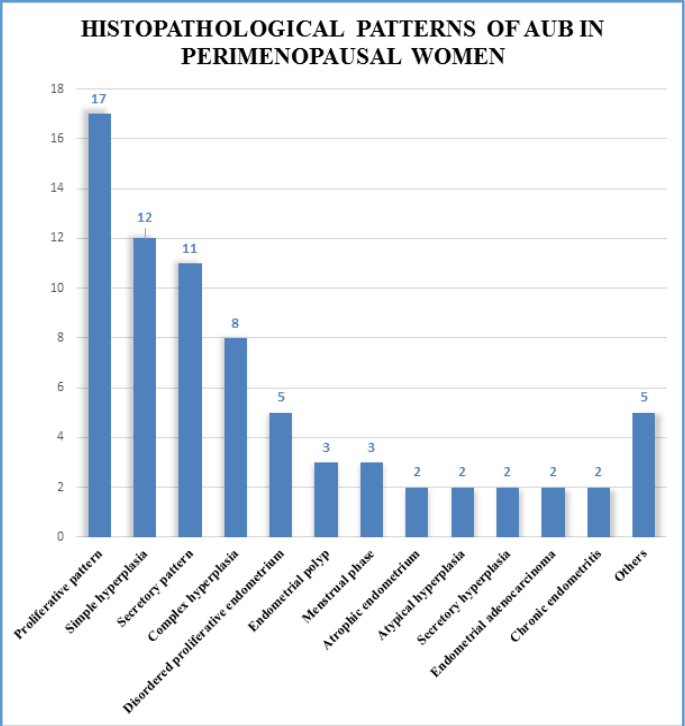
Table 2: Distribution of Cases of AUB in Perimenopausal Age Group

Evaluation of the endometrium revealed various patterns on histopathology (Table 2). Functional causes accounted for slightly more than half of the causes (55%).

Sl. No.	Histopathological Diagnosis	Total	%
1	Proliferative pattern	17	23
2	Simple hyperplasia	12	16.2
3	Secretory pattern	11	14.9
4	Complex hyperplasia	8	10.8
5	Disordered proliferative endometrium	5	6.8
6	Endometrial polyp	3	4.1
7	Menstrual phase	3	4.1
8	Atrophic endometrium	2	2.7
9	Atypical hyperplasia	2	2.7
10	Secretory hyperplasia	2	2.7
11	Endometrial adenocarcinoma	2	2.7
12	Chronic endometritis	2	2.7
13	Endometrial metaplasia	1	1.4
14	Granulomatous TB	1	1.4
15	Hormonal changes	1	1.4
16	Irregular shedding	1	1.4
17	Mixed pattern	1	1.4
Total		74	100

Table 3: Histopathological patterns of AUB in Perimenopausal Women

In the perimenopausal age group (Table 3), the commonest diagnoses were proliferative pattern (23%) followed by simple hyperplasia (16.2%), secretory pattern (14.9%), complex hyperplasia (10.8%) and disordered proliferative endometrium (6.8%).



Sl. No.	Histopathological Diagnosis	Total	%
1	Proliferative pattern	17	41.46
2	Secretory pattern	11	26.83
3	Disordered proliferative endometrium	5	12.20
4	Menstrual phase	3	7.32
5	Atrophic endometrium	2	4.88
6	Hormonal changes	1	2.44
7	Irregular shedding	1	2.44
8	Mixed pattern	1	2.44
Total		41	100

Table 4: Nonorganic causes of AUB in Perimenopausal Women with AUB

The nonorganic causes (Table 4, Fig. 1-4) of abnormal uterine bleeding in decreasing order of frequency was proliferative pattern (41.46%), secretory pattern (26.83%), disordered proliferative endometrium (12.22%), menstrual phase (7.32%), atrophic endometrium (4.88%), hormonal changes (2.44%), irregular shedding (2.44%) and mixed pattern (2.44%).

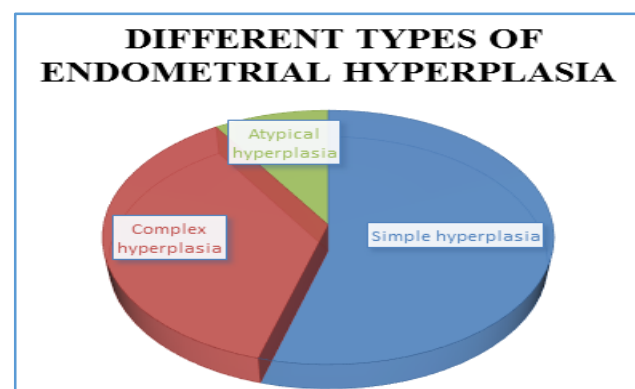
Sl. No.	Histopathological Diagnosis	Total	%
1	Simple hyperplasia	12	36.4
2	Complex hyperplasia	8	24.2
3	Endometrial polyp	3	9.1
4	Atypical hyperplasia	2	6.1
5	Secretory hyperplasia	2	6.1
6	Endometrial adenocarcinoma	2	6.1
7	Chronic endometritis	2	6.1
8	Endometrial metaplasia	1	3
9	Granulomatous TB	1	3
	Total	33	100

Table 5: Organic causes of AUB in Perimenopausal Women with AUB

The organic causes (Fig. 5-8) of abnormal uterine bleeding in this series diagnosed by histopathological examination of D and C specimens in decreasing order of frequency are simple hyperplasia (36.4%), complex hyperplasia (24.2%), polyps (9.1%), atypical hyperplasia (6.1%), secretory hyperplasia (6.1%), endometrial adenocarcinoma (6.1%), chronic endometritis (6.1%), endometrial metaplasia (3%) and granulomatous TB (3%).

Sl. No.	Type	Total	%
1	Simple hyperplasia	12	55
2	Complex hyperplasia	8	36
3	Atypical hyperplasia	2	9
	Total	22	100

Table 6: Different Types of Endometrial Hyperplasia



Among the various types of hyperplasias (total=22), simple hyperplasia (55%) was the commonest type followed by complex hyperplasia (36%) and atypical hyperplasia (9%).

Non-Organic causes of Abnormal Uterine Bleeding

Figure 1: Proliferative Pattern photomicrograph 40x magnification showing widely spaced tubular glands, pseudostratification and mitosis

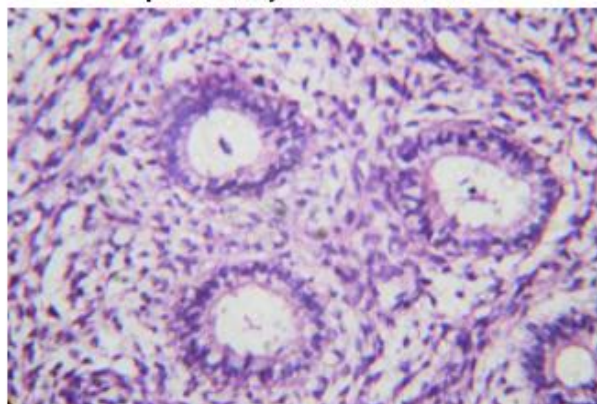


Figure 2: Secretory phase-photomicrograph under 40x showing tubular glands with subnuclear vacuolation.

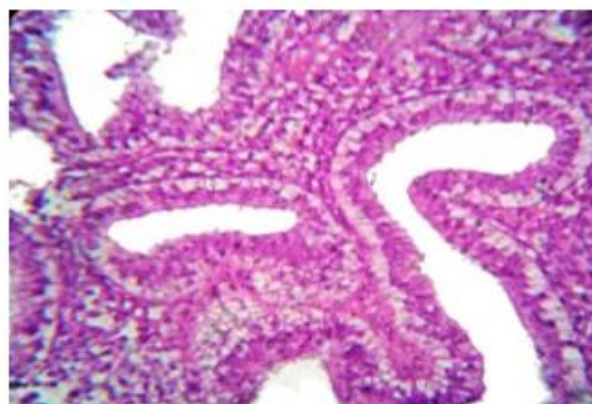


Figure 3: Menstrual phase photomicrograph under 10x magnification showing broken endometrial glands and haemorrhage

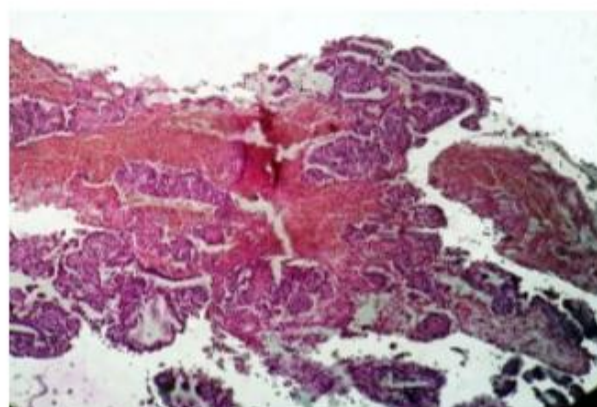
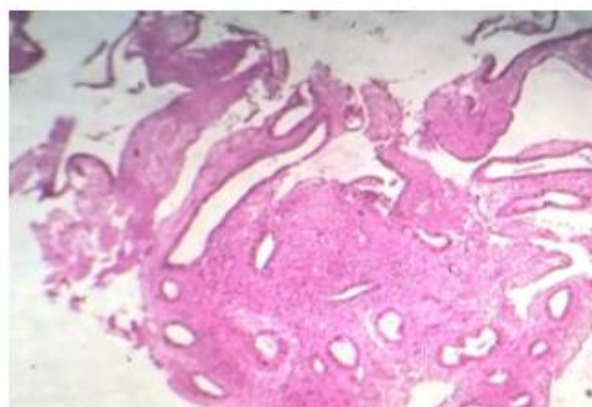


Figure 4: DOP photomicrograph showing occasional cystically dilated glands admixed with short tubular glands.



Organic causes of Abnormal Uterine Bleeding

Figure 5: Simple Hyperplasia under 40 x magnification showing minimally crowded glands with outpouchings.

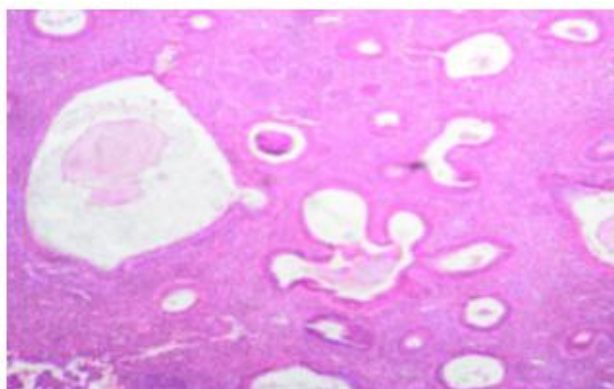


Figure 6: Complex Hyperplasia without atypia-back to back glands with complex branching infoldings and minimal intervening stroma

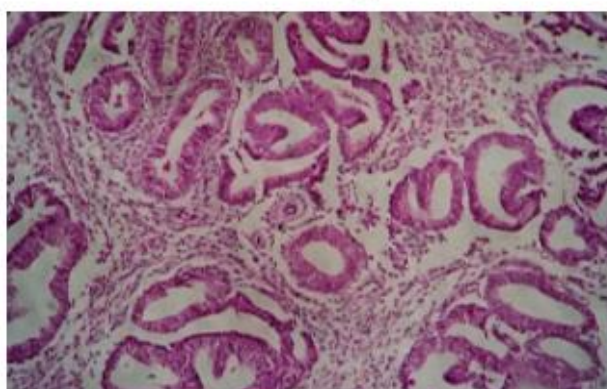


Figure 7: Polyp -under 40x magnification thick walled blood vessels

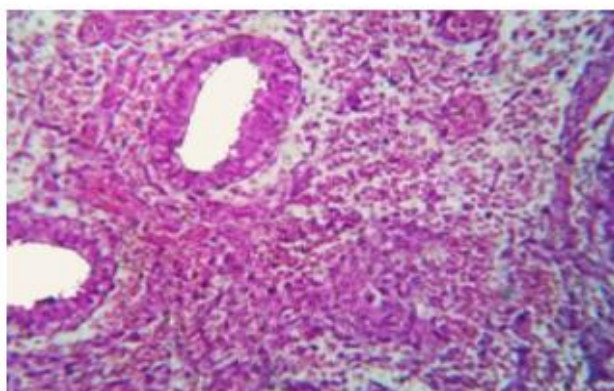
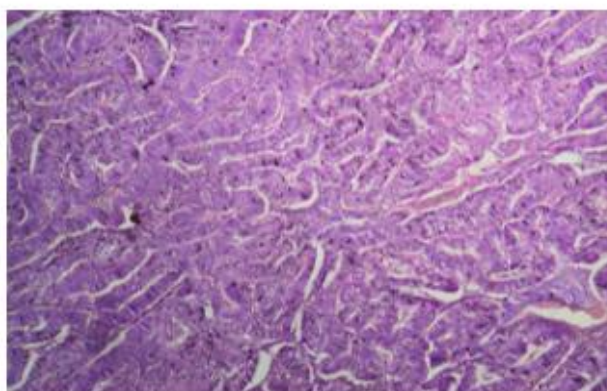


Figure 8: Adenocarcinoma-40x magnification complex branching forming labyrinthine pattern with no intervening stroma



DISCUSSION

Any vaginal bleeding not satisfying the criteria for normal menstruation is called as abnormal uterine bleeding. It is caused by a wide variety of diseases of the reproductive system as well as non-gynaecologic causes. Organic aetiologies of AUB include diseases of the reproductive tract, iatrogenic and systemic causes. Dysfunctional uterine bleeding can be diagnosed only after all the organic causes of AUB have been excluded.

In this study, only perimenopausal patients were studied as the highest incidence of AUB is in the perimenopausal age group. This is also the commonest age group affected in most of the studies like Soleymani E et al.⁽³⁾ Shwetha Agrawal et al.⁽⁴⁾ Jagadale Kunda et al.⁽⁵⁾

The most common presenting complaint in this study is menorrhagia (58.1%) followed by metrorrhagia (29.1%). Menorrhagia is also the commonest complaint in many studies like Sadia Khan et al.⁽⁶⁾ Sajitha K et al.⁽⁷⁾ Shwetha Agrawal et al.⁽⁴⁾ and Jagadale Kunda et al.⁽⁵⁾ AUB can be caused by organic or functional (non-organic) causes. In most of the studies, functional causes are common than organic causes. Likewise, functional causes are slightly more common (55%) than organic causes in this study. This is comparable to findings in studies like Supriya Sandeepa et al.⁽⁸⁾ Doraiswami Saraswathi et al.⁽⁹⁾ Jagadale Kunda et al.⁽⁵⁾ Normal cyclical patterns including proliferative and secretory patterns are the most common histopathological diagnoses seen in most of the studies. This phenomenon is also seen in this study. Both patterns together constitute 37% of cases in this study.

Sl. No.	Study	Normal Cyclical Pattern (PP+SP)	DOP	Atrophy
1	Present study	37.9	6.8	2.7
2	Soleymani E et al. ⁽³⁾	81.4	15.4	-
3	Shwetha Agrawal et al. ⁽⁴⁾	71.75	-	-
4	Zeeba S Jairajpuri et al. ⁽¹⁰⁾	53.91	5.7	1.1
5	Supriya Sandeepa et al. ⁽⁸⁾	51.1	0.2	1.1
6	Layla S Abdullah et al.	46.6	8.7	3.1
7	Jagadale Kunda et al. ⁽⁵⁾	44	-	-
8	Bhatta S et al. ⁽¹¹⁾	42.62	6.56	7.38
9	Mariam Abid et al. ⁽¹²⁾	34	-	6.22
10	Doraiswami Saraswathi et al. ⁽⁹⁾	28.36	20.53	2.44
Table 6: Comparative Study of Incidence of Functional Causes of AUB (%)				

PP – Proliferative Pattern; SP – Secretory Pattern.

Hyperplasias constitute 29.7% of cases of AUB in our study. Simple hyperplasia is present in 16.2% cases in this study. A similar incidence of hyperplasia is found in studies like Sarwat Ara et al.⁽¹³⁾ Nadia Adnan Ghani et al.⁽¹⁴⁾ and Bhoomika Dadhanania et al.⁽¹⁵⁾

The overall risk of progression of hyperplasia to cancer is 5-10%. The risk of progression of simple hyperplasia, complex hyperplasia, simple hyperplasia with atypia and complex hyperplasia with atypia to carcinoma are respectively 1%, 3%, 8% and 29%.⁽¹⁶⁾

The incidence of endometritis in the present study is 2.7%. A high incidence of endometritis is noted in Zeeba S. Jairajpuri et al.⁽¹⁰⁾ Sarwat Ara et al. ⁽¹³⁾

Sl. No.	Study	Hyper-plasias	Endometritis	Polyp	Malignancy
1	Present study				
2	Soleymani E et al. ⁽³⁾	2.5	-		0.7
3	Layla S Abdullah et al. ⁽¹⁷⁾	9.1	5.8	9.9	1.8
4	Mariam Abid et al. ⁽¹²⁾	5	12	14	2
5	Supriya Sandeepa et al. ⁽⁸⁾	17.4	0.7		1.1
6	Shwetha Agrawal et al. ⁽⁴⁾	16.5	-	-	4.5

Sl. No.	Study	Hyper-plasias	Endometritis	Polyp	Malignancy
7	Zeeba S Jairajpuri et al. ⁽¹⁰⁾	5.79	6.1	1.72	0.4
8	Jagadale Kunda et al. ⁽⁵⁾	22	-	1	4
9	Bhoomika Dadhanania et al. ⁽¹⁵⁾	26.66	2	-	2.66
10	Doraiswami Saraswathi et al. ⁽⁹⁾	6.11	4.15	11.24	4.4
11	Bhatta S et al. ⁽¹¹⁾	18.03	6.56	2.46	5.74
Table 7: Comparative Study of the Incidence of Common Organic Causes of AUB (%)					

Polyps are an important organic cause of AUB. The present study reported polyps in 4.1% of cases. Mariam Abid et al.⁽¹²⁾ has the highest incidence of polyps (14% of cases). In this study, there is an increase in frequency of polyps with increasing age.

Malignancies are less common, but an important cause of abnormal uterine bleeding. In the present study, 2 cases of endometrial carcinoma were seen. Among the malignancies, endometrial carcinoma (Especially endometrioid type) was the commonest reported malignancy in most of the studies. Cases of Malignant Mixed Mullerian Tumour (MMMT), endometrial stromal sarcoma and adenosarcoma were rarely reported in some studies.

CONCLUSION

AUB is one of the common reasons for visit to the Gynaecology Outpatient Department. The present study showed that the highest incidence of AUB is in the perimenopausal age group (41-50 years). Normal cyclical patterns like proliferative and secretory pattern are the commonest histological diagnosis followed by the simple hyperplasia.

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