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Original Article

Histopathological Study of Endometrium in Abnormal Uterine Bleeding

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Abstract

Abnormal uterine bleeding continues to be one of the most frequently encountered complaints in gynaecology. Until the pathology underlying menorrhagia, is accurately diagnosed, proper therapy is hardly possible. Endometrial sampling is effectively used as the first diagnostic step in AUB as it is simple, cost effective and appropriate method that provides accurate diagnostic yield. The aim of study was to evaluate the variations of endometrium in clinically diagnosed AUB patients.

Materials And Methods: This was a retrospective study undertaken to review the histopathological reports of all endometrial biopsies over a period of 1 year i.e. from July 2019 to June 2020. The data thus obtained was entered by using Microsoft excel & was transferred & analyzed using Statistical Package for Social Sciences (SPSS version 20).

***Results*:** This study included 100 cases of endometrial biopsy specimens. The commonest pattern of endometrium was proliferative. The commonest pathology was endometrial hyperplasia. Other patterns identified were secretory endometrium, chronic endometritis, pill endometrium, disordered proliferative endometrium, tubercular endometritis and endometrial carcinoma.

Conclusion: Our study revealed the highest incidence of AUB in perimenopausal age group. Hence a thorough histopathological examination should be done generously in women presenting with AUB especially after the age of 40, to rule out premalignant and malignant pathology as accurate analysis of endometrial samplings is the key to effective therapy and optimum outcome.

Keywords: Dysfunctional uterine bleeding, Endometrium, Perimenopause.

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Introduction

Abnormal uterine bleeding (AUB) is one of the most common and significant gynecological complaints in the reproductive age group of women and accounts for about 10-15%.[1] AUB is defined as a pattern of bleeding that does not correspond with the duration, amount and frequency of a normal menstrual cycle.[2]

Endometrial biopsy or Dilatation & curettage is a safe and effective technique for evaluating abnormal uterine bleeding and for the diagnosis of endometrial pathologies such as infections, polyps, endometrial hyperplasia and endometrial carcinoma.[3]

AUB which is not associated with organic cause is called as Dysfunctional uterine bleeding (DUB). It is one of the most common complaint for which women visit the gynecologists.

9-30% of women in reproductive age suffer from menorrhagia.[4] It is mandatory to evaluate endometrium in women >40 years of age, especially post menopausal women to rule out endometrial carcinoma, as it is the third most common malignancy of female genital tract with age standardizes incidence of rate 2.9 per 100,000 women.[5]

Pregnancy related and dysfunctional uterine bleeding are more common in younger patients, whereas atrophy and organic lesions become more frequent in older individuals.[6] In women > 40 years and certainly in menopausal patient, it mandates evaluation to confirm benign nature of problem, by ruling out endometrial carcinoma, so that medical treatment or conservative surgery can be offered and unnecessary radical surgery can be avoided.[7]

AIM:

The aim of the study was to evaluate the morphological variations in endometrium in clinically diagnosed AUB patients.

Objectives:

- To evaluate endometrial variations in women with abnormal uterine bleeding.
- To study spectrum of patterns of endometrium in different age groups.

Materials And Methods:

Source and method of collection of data: Study was conducted on endometrial samples from women presenting with abnormal uterine bleeding sent to the department of Pathology at Basaveshwara Medical College & Hospital, Chitradurga. Consent was taken from the ethical committee of the institute prior to the commencement of the study.

Study design: Retrospective study

Duration of the study: The study period was 1 year from July 2019 to June 2020.

Inclusion criteria:

- Patients with abnormal vaginal bleeding aged > 18 years who were clinically diagnosed as AUB were included.

Exclusion criteria:

- Hysterectomy specimens
- Follow up cases of endometrial malignancies, postoperative and postpartum cases were excluded

Tissue processing:

Histopathological examination of the biopsy specimens was done. The specimens were fixed in 10% formalin for 24 hours and were grossed. The gross findings were noted, whole tissue was processed and paraffin embedded. From each block, sections were cut at 4-5 micron thickness and stained with Haematoxylin & Eosin.

Data analysis:

- The data thus obtained was entered by using Microsoft excel & was transferred & analyzed using Statistical Package for Social Sciences (SPSS version 20).
- Analysis was done in the form of percentages and represented as tables where ever necessary.
- Patients were divided into three age groups. (8)
- Group I (adolescents/reproductive): 18-40 years
- Group II (premenopausal): 41-50 years
- Group III (postmenopausal): >50 years.

Results:

This study was carried out in the department of pathology and 100 cases of AUB were studied. Patient's age ranged from 18 - 60 years. The maximum numbers of patients were in the age group between 41-50 years, total of 65%. Highest incidence of AUB was found in 41 - 50 years of age group and proliferative was the commonest pattern, which was similar to the study conducted

by Mehta et al (52%) & Batra et al (48%).

Table I: AUB according to age group.

Age group	Number of cases	Percentage %
18 - 40 years	20	20%
41 - 50 years	65	65%
>50 years	15	15%

Out of 100 patients, 65 % were premenopausal whereas 15% were postmenopausal. Proliferative endometrium was the commonest and predominant finding irrespective of all age group 38%, followed by 16% of disordered proliferative endometrium. 4 cases were diagnosed as endometrial carcinoma. Menorrhagia was the most frequent symptom in 74% of patients followed by menometrorrhagia, metrorrhagia, polymenorrhea and intermenstrual bleeding were presented in 5%, 15%, 5% & 6% of patients respectively. (Table II)

Table II: Patterns of bleeding.

Pattern of bleeding	No of cases	Percentage
Menorrhagia	74	74 %
Metrorrhagia	15	15%
Polymenorrhagia	6	6%
Oligomenorrhoea	0	0%
Menometrorrhagia	5	5%
Total	100	100%

The most common bleeding pattern was found to be menorrhagia followed by metrorrhagia which was similar to the study done by Kishore et al (27%) and Tiwari et al (60%).

Both functional and organic causes are common in premenopausal age group that is 41-50 years.

Table III: Categorization of etiology of AUB.

Causes	No of cases	Percentage %
Functional etiology	69	69%
Organic cause	31	31%
Total	100	100%

Among the organic causes, endometrial hyperplasia i.e. 18% was the most common pathology we had encountered with maximum number in 41-50 years of age group.

Table IV: Categorization of histopathological findings of endometrial biopsy in different age groups.

Causes		18-40	41-50	>50	Total
Organic causes	Endometrial Polyps	-	1	-	1
	Endometritis	1	1	-	2
	Pregnancy related	6	-	-	6
	Endometrial Hyperplasia	-	14	4	18
	Endometrial Carcinoma	-	1	3	4
Functional causes (physiological & Pathological)	Proliferative	7	31	-	38
	Secretory	4	6	-	10
	Atrophic	-	1	1	2
	Disordered proliferative endometrium	2	10	4	16
	Pill endometr - ium	1	2	-	3
	Total	20	65	15	100

Similar studies done by Sandeepa et al and Devi et al, showed incidence of 37.10% and 77.19%. This was the high risk group for endometrial hyperplasia and endometrial carcinoma. Endometrial carcinoma was reported in 4% of cases which was similar to the studies done by Devi et al and Batra et al i.e 2.63% & 3.14% respectively.

In the present study, among the functional causes the most common pattern was the proliferative endometrium with 38% of cases. This finding was similar to the study done by Mehta et al 52% and Tiwari et al 30%.

Discussion:

Women come with various gynecological complaints, most important of which is abnormal uterine bleeding (AUB). Excessive and irregular uterine bleeding (AUB) continues to be one of the most frequently encountered and perplexing condition in adult women.

Dilatation and curettage is said to be diagnostic as well as therapeutic procedure for these patients. The sensitivity of endometrial biopsy for detection of endometrial abnormalities is very high 96%. Endometrial cancer, the most frequent gynecologic malignancy can be picked up in small endometrial biopsies. Thus correct diagnosis whether benign, premalignant and malignant, helps the gynecologist to decide appropriate therapeutic strategy.[1]

Our study and others studies have found a maximum incidence of AUB in perimenopausal

age group. Perimenopause is defined by World Health Organization as the 2 - 8 years preceding menopause and the 1 year after the final menses. As women approach menopause, cycles shorten and often become intermittently anovulatory due to decline in the number of ovarian follicles and fluctuations in the estradiol level leading to various patterns of abnormal bleeding.[6]

In our study predominant number of patients in the age group 41 - 50 years showed normal physiological changes like proliferative and secretory phase patterns. In the present study, proliferative pattern of endometrium was found in 38% of patients. This pattern was commonly observed in late reproductive and perimenopausal women in our study and other studies, may be due to hormonal imbalance in this age group leading to intermittent anovulatory cycles.

Secretory endometrium was the second most common pattern observed in this study and was seen in 10% patients. The bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding and is characterized by regular episodes of heavy menstrual loss. The main defect is in the control of processes regulating the volume of blood lost during menstrual breakdown of endometrium.

The incidence of endometrial hyperplasia (Figure A)

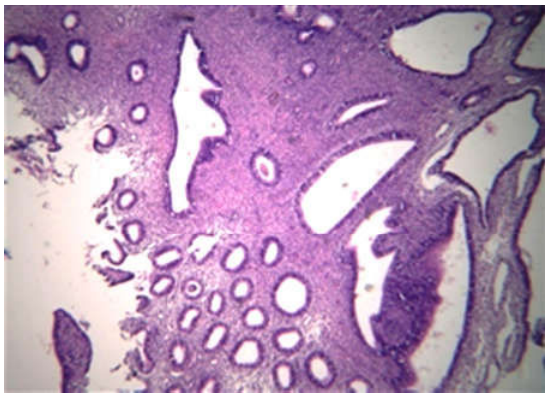

Fig. A: Endometrial Hyperplasia 40 X.

in premenopausal women is reported to be 2% to 10%. In most studies, also 10% to 20% cases of endometrial cancer occur before menopause. As endometrial hyperplasia is thought to be precursor of endometrial carcinoma, the diagnosis and treatment is important in perimenopausal women with heavy or irregular menstrual bleeding and are often advised to have an endometrial sample taken to exclude endometrial disease. This pattern is seen in 18% of our cases. The sensitivity of endometrial biopsy for detection of endometrial abnormalities has been reported to be as high as 96%.[3]

Disordered proliferative endometrium

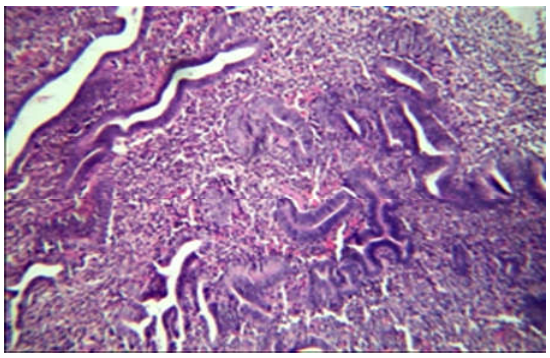

Fig. B: Disordered Endometrium 40X.

is an exaggeration of the normal proliferative phase without significant increase in the overall ratio of glands to stroma and is due to persistant oestrogen stimulation. This pattern is particularly seen in perimenopausal women. The disordered proliferative endometrium resembles normal proliferative tissue in consisting of glands lined by cytologically bland, pseudostratified, proliferative, mitotically active epithelium and in having a normal ratio of glands to stroma. It differs from normal proliferative endometrium in the absence of uniform glandular development. Disordered proliferative endometrium lies at one end of the spectrum of proliferative lesions of the endometrium that includes carcinoma at the other end with intervening stages of hyperplasia.[9,10]

Atrophic endometrium was the most common cause of bleeding in postmenopausal stage. Thin walled veins, superficial to the expanding cystic glands, make the vessels vulnerable to injury and lead to excessive uterine bleeding. Atrophic endometrium was seen in 2% of patients in this study and they presented as postmenopausal bleed.

In our study pill endometrium

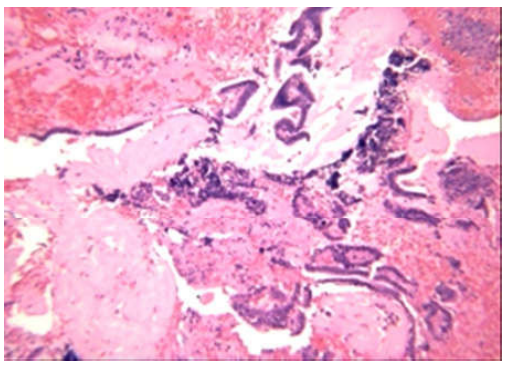

Fig. C: Menstrual Endometrium 10X

is seen in 3% of cases. Other studies reported a lower incidence. In this pattern endometrium shows a combination of inactive glands, abortive secretions, decidual reaction and thin walled blood vessels. This pattern was predominantly seen in perimenopausal age group probably due to increased number of patients in this age resorting to early medical management for bleeding.[6]

The other benign patterns included were irregular shedding, endometritis and menstrual pattern Figure C. In our study we have encountered one case of tubercular endometritis who presented with a complain of AUB and her biopsy showed caseating granulomas with epithelioid cells, langhan's giant cells and was diagnosed as granulomatous endometritis. These cases have to be taken into consideration because with the specific treatment, endometrium starts functioning normally.

Endometrial carcinoma (Figure D)

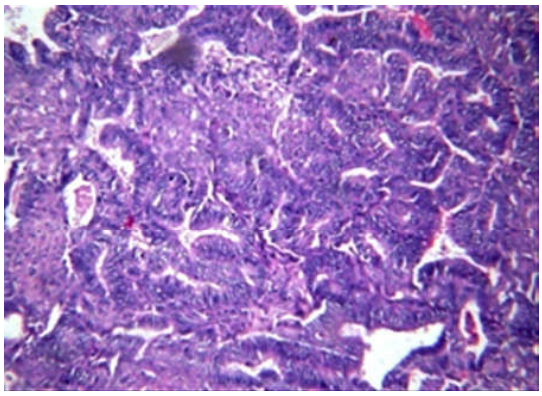

Fig. D: Endometrial Carcinoma 40X.

is the most common invasive cancer of female genital tract. It accounts for 7% of all invasive cancer in women. Malignant conditions observed in this study included 4 cases of endometrial carcinoma which included 3 cases of endometrioid adenocarcinoma and one case of serous carcinoma. Most common presentation in these patients was postmenopausal bleeding and incidence of endometrial carcinoma was 21.73% in postmenopausal age group.

Conclusion:

Endometrial hyperplasia which is a precursor of endometrial carcinoma is the most common organic lesion in elderly women. Histopathological examination should be done generously in women presenting with AUB especially after the age of 40 to rule out malignant pathology as accurate analysis of endometrial samplings is the key to effective therapy and optimum outcome.

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