Original Article

Histopathological study of endometrium in dysfunctional uterine bleeding

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Abstract

Introduction: Dysfunctional uterine bleeding is the commonest presenting symptom in gynaecology outpatient department. Endometrial sampling could be effectively used as the first diagnostic step in the DUB. This study was done to evaluate histopathology of endometrium for identifying the endometrial causes of DUB. We also tried to observe the incidence of various pathologies in different age groups presenting with abnormal uterine bleeding. **Material and methods:** This is a prospective study undertaken in the Dept of OBGY, Indian Institute of Medical Science and Research, Warudi, Jalna. 80 cases of DUB were included in this study. Endometrium specimen were obtained by D and C. **Result:** The most common age group presenting with DUB was 41-50 years (50%). The commonest pattern in these patients was proliferative endometrium. The commonest pathology was simple cystic hyperplasia. Menorrhagia was the commonest bleeding pattern. As age advances, incidence of hyperplasia was increased. Parity had no influence on endometrial pattern in DUB. **Conclusion:** There is an age specific association of endometrial bleeding with highest incidence in perimenopausal age group. Dialatation and curettage is helpful to exclude other organic pathology which mimic DUB like endometrial polyp, endometritis, etc. It is useful for diagnosis, to assess therapeutic response and to know the pathological incidence of organic lesions in cases of dysfunctional uterine bleeding prior to surgery.

Keywords: Dysfunctional uterine bleeding, Endometrial hyperplasia, Endometrium.

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INTRODUCTION

The female genital tract is hormone responsive system to a degree unmatched by any other system in the body. The gross configuration of uterus changes dramatically throughout the life. It is a kind of "Puppet on a strings", thus manipulated throughout life by changing levels of ovarian hormones. The endometrium is an endocrine organ that responds to circulating blood levels of estrogen and progesterone. Cyclical uterine bleeding, which begins anatomically and physiologically in normal female marks an important stage of reproductive maturation. Dysfunctional Uterine Bleeding (DUB) is one of the most common and significant gynaecological complaints and is seen in about 10-15% of women attending gynaecological clinic. It is estimated that 9-30% of women of reproductive age suffer from menorrhagia. The prevalence increases with age, peaking just prior to menopause. Because most cases are associated with anovulatory menstrual cycles, adolescent and perimenopausal women are particularly vulnerable. Dysfunctional uterine bleeding has significant morbidity in that it interferes with personal, family and social life. Dysfunctional uterine bleeding is defined as excessive abnormal bleeding from the uterine cavity in the absence of any organic pelvic pathology. The endometrial biopsy is useful to evaluate dysfunctional uterine bleeding because it has served advantages over other diagnostic methods. The hormonal assay is very expensive and laboratories with hormonal assay are not available in rural areas. Dysfunctional uterine bleeding has great variation in the endometrial patterns and its management entirely depends on the type of endometrium. Thus, histopathological study of endometrium plays an important role in its treatment. Hence, we report a study of 80 cases with detailed clinicopathological features.

MATERIAL AND METHODS

This was a prospective study of one year from Jan 2013 to Dec 2013 which included 80 cases of endometrial

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samples obtained from patients clinically diagnosed as DUB who attended OPD or were admitted in Noor Hospital of Indian Institute of Medical Science and Research, Warudi, Jalna. The endometrial samples obtained from endometrial biopsy or from Dilatation and Curettage for therapeutic or diagnostic purpose was fixed in 10% formalin for 12 to 24 hours and the entire tissue was taken for routine processing. 4-5µm thickness sections taken from paraffin blocks were stained with Haematoxylin and Eosin (HandE) and studied under light microscopy.

Inclusion Criteria: Endometrial tissue from patients of all age groups clinically diagnosed as DUB.

Exclusion Criteria:

1. Patients presenting with DUB due to pregnancy related complications.
2. Organic lesions involving genital tract and organs like leiomyomas and adenomyosis, genital tract infections, systemic causes and other tissues.
3. Hysterectomy specimens.

RESULTS

80 cases were studied in present series which were clinically diagnosed as DUB during the period of one year from Jan 2013 to Dec 2013.

Table 1: Incidence of DUB in various age groups

Age (years)	No. of cases	Percentage
< 20 years	-	-
21-30 years	12	15%
31-40 years	24	30%
41-50 years	40	50%
51-70 years	4	5%
Total	**80**	**100%**

Above table shows that the age of patients ranged from 21-70 years. Highest incidence of DUB was found in 41-50 years of age group (50%). Next major group belonged to 31-40 years (30%).

Table 2: Incidence of menstrual disorder in DUB

Menstrual Disorder	No. of cases	Percentage
Menorrhagia	56	70%
Polymenorrhagia	11	13.75%
Polymenorrhoea	5	6.25%
Metrorrhagia	3	3.75%
Oligomenorrhoea	5	6.25%
Total	**80**	**100%**

Above table shows that maximum incidence was of menorrhagia (70%) followed by polymenorrhagia (13.75%).

Table 3: Endometrial pattern in DUB

Endometrial pattern	No. of cases	Percentage
Proliferative	29	36.25%
Secretory	16	20%
Hyperplasia	25	31.25%
Benign Endometrial polyp	1	1.25%
Endometritis	2	2.5%
Atrophic	5	6.25%
Endometrial Carcinoma	2	2.5%
Total	**80**	**100%**

Above table shows that proliferative phase was most common and found in 36.25%. Hyperplasia was found in 31.25% cases and secretory endometrium in 20% cases.

Table 4: Incidence of types of hyperplasia associated with DUB

Types of hyperplasia	No. of cases	Percentage
Simple	15	55.56%
Complex	8	29.62%
Complex with atypia	2	7.4%
Total	**25**	**100%**

Above table shows that most common incidence of hyperplasia was simple hyperplasia followed by complex. Atypical hyperplasia was rare finding.

Table 5: Endometrial pattern in relation to age

Endometrial Pattern	Age (years)									
	21-30 years		31-40 years		41-50 years		51-60 years		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Proliferative	6	50	10	41.8	13	32.5	-	-	29	36.25
Secretory	5	41.6	7	29.2	4	10	-	-	16	20
Simple hyperplasia	1	81.4	4	16.7	10	25	-	-	15	18.75
Complex hyperplasia	-	-	1	4.1	7	17.5	-	-	8	10
Atypical hyperplasia	-	-	-	-	2	5	-	-	2	2.5
Endometrial polyp	-	-	1	4.1	-	-	-	-	1	1.25
Endometritis	-	-	1	4.1	1	2.5	-	-	2	2.5
Atrophic	-	-	-	-	3	7.5	2	50	5	6.25
Endometrial Carcinoma	-	-	-	-	-	-	2	50	2	2.5
	12	**100**	**24**	**100**	**40**	**100**	**4**	**100**	**80**	**100**

Above table shows that proliferative phase was common in □30 years age group. Secretory phase was common in 21-30 years. Hyperplasia was common in > 40 years age group. Atrophic was also common in > 40 years age group.

DISCUSSION

Dysfunctional uterine bleeding is defined as a state of abnormal bleeding from the uterine cavity without any clinically detectable, observable or palpable organic pelvic pathology. The term DUB applies to any uterine bleeding, including disturbances of the menstrual cycle, regular and irregular uterine bleeding and alterations in the amount or duration of menstrual loss, but most commonly implies excessive regular menstrual bleeding. DUB is not one condition with one aetiology, but is a group of disorders characterized by dysfunction of the uterus, ovary, pituitary, hypothalamus or other part of the reproductive system which results in abnormal or excessive uterine bleeding. In clinical practice, the precise nature of dysfunction is often not determined and the diagnosis of DUB is usually made by exclusion of organic disease of the genital tract. DUB can occur at any age though its aetiology and management vary greatly in different age groups. So an understanding of the effect of age and parity on management and on the risk of missed uterine pathology is important. On ruling out the organic causes of abnormal uterine bleeding, gynaecologist turn to Dilatation and curettage. Dilatation and curettage can be both diagnostic as well as therapeutic procedure. The sensitivity of endometrial biopsy for detection of endometrial abnormalities has been reported to be as high as 96%. The age of the patients ranged from 21-70 years. Our study significantly revealed that the occurrence of menstrual disorders increased with advancing age. The commonest age group presenting with excessive bleeding in our study was 41-50 years. A similar incidence was reported by Yusuf *et al* and Muzaffer *et al* in their study of endometrium. Our study like several others showed that proliferative lesions like hyperplasia was more common in the age group of 41-50 years. The reason for increased incidence of DUB in this age group may be due to the fact that the patients are in the climacteric period. As women approach menopause, the cycles become intermittently anovulatory due to a decline in the number of ovarian follicles and their increased resistance to gonadotropin stimulation with longer rather than shorter cycles. 45% of the patients belonged to 21-40 years age (reproductive group) which is characterized by regular menstrual cycles and regular ovulation. In these years, benign organic disease is common though malignancy is rare. Curettage is usually performed to exclude complications of pregnancy and other disease. 5% of the patients belonged to 51-70 years age group and is frequently associated with atrophic endometrium. We had 2 patients in this age group who had endometrial carcinoma. Not a single patient belonged to < 20 years age group, however actual incidence of DUB is not low in this group. They are treated on conservative (hormonal basis) and most often they are unmarried and do not undergo endometrial sampling. Predominant number of cases in this study showed normal physiologic phases such as proliferative and secretory pattern. The bleeding in the proliferative phase may be due to anovulatory cycles and bleeding in the secretory phase is due to ovulatory dysfunctional uterine bleeding. The most common pathology in this study was Endometrial hyperplasia. Endometrial hyperplasia varies from slight exaggeration of the proliferative phase to marked overgrowth approaching adenocarcinoma of the endometrium. The overgrowth affects both the stroma and the glands which increase in number and dilate, producing the typical 'Swiss cheese' endometrium. There is also abnormal vascularisation with numerous large thick-walled spiral arterioles and grossly dilated veins or sinuses immediately under the endometrial surface. There is frequently infarction and thrombosis of the blood vessels with necrosis and shedding of the superficial layers of the endometrium. With the increased vascularity and necrosis, the occurrence of menorrhagia and DUB is not surprising. The main importance of endometrial hyperplasia is the possibility of progression from benign (simple cystic hyperplasia) to adenomatous hyperplasia (complex hyperplasia with or without atypia) and eventually to carcinoma, if the condition persists. Atrophic endometrium was seen predominantly in the 50-70 years age group. The incidence is slightly lower when compared with results shown by Gredmark *et al*. Its importance should not be neglected as atrophy of the endometrium may be associated with the development of large dilated venules situated superficially under a thin endometrium. These venules may rupture and are probably the commonest cause of postmenopausal uterine bleeding. The incidence of endometrial polyp was low in this study. There was a single case of endometrial polyp in the age group 31-40 years. There is a significant difference between endometrial polyp and normal endometrium in receptor expression, cell proliferation and apoptosis regulation. These differences combined with non-random chromosomal aberrations and monoclonality suggests that polyp may provide a suitable microenvironment for the development of malignancy. In the present study, incidence of carcinoma endometrium was more common in the 51-70 years age group. The result of this study was almost similar to data mentioned by Yusuf *et al* and Escoffery *et al* in their study. Chronic

endometritis was observed in few patients. This condition needs to be diagnosed because with specific treatment, endometrium starts functioning normally.

CONCLUSION

Endometrial cause of DUB is age related pathology. Study of endometrial microscopy in women with DUB is helpful to distinguish anovulatory from ovulatory DUB and to diagnose hyperplasia and carcinoma of endometrium. Dilatation and curettage reveals endometrial pattern in dysfunctional uterine bleeding in different cases, varying from normal proliferative and secretory patterns to irregular shedding, irregular ripening and cystoglandular hyperplasia patterns. Dilatation and curettage is helpful to exclude other organic pathology, which mimic dysfunctional uterine bleeding like endometrial polyp, chronic endometritis, endometrial carcinoma, etc. Therefore, conclusion is that dilatation and curettage is useful for diagnosis to plan successful management modality, to assess therapeutic response and to know the pathological incidence of organic lesions in cases of dysfunctional uterine bleeding prior to surgery.

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