ORIGINAL ARTICLE

HISTOPATHOLOGICAL STUDY OF ENDOMETRIUM IN DYSFUNCTIONAL UTERINE BLEEDING

Bhoomika Dadhania*[1], Gauravi Dhruva[2], Amit Agravat[3], Krupal Pujara[1]

[1]Resident, H. J. Doshi Hospital staff quarters, Gondal Road, Rajkot.

[2]Professor and Head, [3]Associate Professor, Department of Pathology, P.D.U. Medical College Rajkot, Gujarat

ABSTRACT

BACKGROUND: Dysfunctional uterine bleeding (DUB) is one of the commonest presenting symptoms in gynaecology out-patient department. The term dysfunctional uterine bleeding is used to describe abnormal uterine bleeding for which no specific cause has been found. Endometrial biopsy could be effectively used as the first diagnostic step in DUB. This study was done to evaluate histopathology of endometrium for identifying the endometrial causes of DUB and to correlate them with various age groups **MATERIALS AND METHODS:** This is a prospective study, undertaken in the department of pathology of P. D. U. Medical College, Rajkot, over a period of two years from July 2010 to July 2012. 150 endometrial lesions diagnosed on histopathology were selected for the final analyses. **RESULTS:** The most common age group presenting with DUB was 41–50 years (40.6%). The commonest pattern in these patients was proliferative endometrium. The commonest pathology was simple cystic hyperplasia (25.3%). Other patterns identified were secretory endometrium, menstrual endometrium, Pseudodecidual changes, endometrial carcinomas. Endometrial causes of DUB and age pattern was statistically significant with P value <0.05. **CONCLUSION:** There is an age specific association of endometrial bleeding, with highest incidence in perimenopausal age group. The incidence of proliferative pattern was high in this study. Dilatation 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

INTRODUCTION

Women suffer from many gynaecological diseases. One among them is dysfunctional uterine bleeding, which has significant morbidity in that it interferes with their personal, family and social life. Woman today experience more menstrual cycles than her ancestors did. This is mainly due to decreased parity and reduction in lactational amenorrhea. Dysfunctional uterine bleeding is one of the commonest conditions for which patients seek advice in the gynaecological outpatient department. 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.[1]

Corresponding Author

Dr. Bhoomika P Dadhania
H.J.Doshi Hospital staff , Gondal Road, Rajkot
Email : drbhoomikadhingani@gmail.com

The term dysfunctional uterine bleeding is used to describe abnormal uterine bleeding for which no specific cause has been found. It is the diagnosis of exclusion made when there is no recognizable medical cause. The endometrial biopsy is chosen to evaluate dysfunctional uterine bleeding because it has several advantages over other diagnostic methods. The hormonal assay is very expensive and laboratories with hormonal assay are not available in rural area.

MATERIALS AND METHODS

This is a study on histopathology of endometrium in Dysfunctional Uterine Bleeding, undertaken in the department of pathology of our medical college over a period of two years from July 2010 to July 2012. Material for the study consisted of endometrial tissue obtained by Dilatation and Curettage of patients presenting with Dysfunctional Uterine Bleeding, who were either attending OPD or admitted in obstetrics and gynecology department of our Hospital, Which were sent for histopathological study to the Department of Pathology. Inclusion criteria: Endomatrial tissue from patients of all age groups clinically diagnosed as DUB (in whom there is no organic pathology) like 1)Normal ovulatory DUB,2)Anovulatory DUB like insufficient follicular development, 3) Ovulatory DUB like in Persistant corpus luteum.

Exclusion criteria: 1) Patients presenting with DUB due to pregnancy related complications 2) Organic lesions involving the genital tract and organs like leiomyomas and adenomyosis, genital tract infections, systemic causes and other lesions 3) Hysterectomy specimens. The endometrial tissue was fixed in 10% formalin for 12-24 hours and then entire tissue was taken for routine processing 0.5 µm thickness sections taken from paraffin blocks were stained with Haematoxylin and Eosin (H & E) and studied microscopically. Relevant clinical data was collected from the hospital and laboratory records. Microscopic examination was done by two pathologists, individually to reduce observer bias. The data collected for the study was statistically analysed using $\chi 2$ test.

RESULTS

150 samples of endometrium obtained from patients suffering from DUB were included in the present study as shown in table 1. All the endometrial samples included for the study were obtained by dilatation and curettage (D & C) method and the age of the patients ranged from 21- 52 years with a mean of 36.5 years. Highest incidence of DUB was found in 41-50 years of age group.The commonest pattern in 41-50 years patients was proliferative endometrium. The commonest pathology irrespective of age group was simple cystic hyperplasia (25.3%). 15.33% endometrial biopsies were diagnosed as secretory phase endometrium. Majority of patients i.e. 47.82% belonged to 31-40 years of age group. Out of 150 endometrial biopsies 2.66% biopsies showed microscopic features suggestive of irregular proliferative endometrium. Endometrial hyperplasia was the most common pathology encountered.12% biopsies showed features of Simple Cystic Hyperplasia, 13.33% biopsies showed features of Adenomatous hyperplasia and 1.33% biopsies showed features of Complex Atypical Hyperplasia. Incidence of simple cystic hyperplasia was highest in the 4^{th} decade of life suggesting that the incidence of endometrial hyperplasia increases with age. Irregular shedding of endometrium was seen in 1.33% patients and menorrhagia was the commonest type of bleeding among them. Of the 150 endometrium samples 10% samples showed features of pseudodecidual changes (? Hormone effect) and majority of the patients presented with menorrhagia. One (0.66%) patient was diagnosed as having deficient secretory phase with coordinated apparent delay. One (0.66%) patient was diagnosed as Arias Stella reaction. Three (2%) of patients were diagnosed having endometritis Adenocarcinoma of endometrium was seen in 4(2.66%) of patients. All the patients were above 50 years of age as shown in table 2

Table 1: Relationship of DUB with different age groups.

Age(years)	No. of patients	%
21-30	22	14.66
31-40	60	40.00
41-50	61	40.66
>50	7	4.60
Total	**150**	**100.00**

DISCUSSION

The term dysfunctional uterine bleeding is used to describe abnormal uterine bleeding for which no specific cause has been found. It is the diagnosis of exclusion made when there is no recognizable medical cause. Organic cause of abnormal uterine bleeding may be subdivided into reproductive tract disease, iatrogenic causes and systemic disease. When an organic cause cannot be found, then by exclusion, a diagnosis of dysfunctional uterine bleeding (DUB) is assumed. In about 25% of the patients, the abnormal uterine bleeding is the result of a well defined organic abnormality.[1] The routine non invasive investigations for dysfunction uterine bleeding include complete blood count, platelet count, prothrombin time (PT), Activated partial thromboplastin time (APTT) and liver function test to rule out any coagulation and bleeding disorders. In women of reproductive age group, serum and urine human chorionic gonadotropin (HCG) levels are evaluated to rule out pregnancy. To rule out an endocrine etiology, thyroid function test, follicle stimulating hormone (FSH), lutenizing hormone (LH), prolactin levels are assessed. On ruling out these causes, gynaecologists turn to imaging studies such as pelvic ultrasound (USG), and transvaginal USG and tissue sampling. Dilation and curettage can be a diagnostic as well as therapeutic procedure. [2] The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported to be as high as 96%. [3] All adolescents with menorrhagia should undergo evaluation for coagulopathy.[4] Complications of pregnancy are common in the age group 21–30 years. This can be explained by the fact that most women conceive at this age,

Table 2: Endometrium in Different Age Groups

	Age Group				
Endometrial pattern	**21-30 years**	**31-40 years**	**41-50 years**	**>50 years**	**Total**
Simple cystic hyperplasia (Swiss cheese)	3	6	9	0	18
Adenomatous hyperplasia	3	8	8	1	20
Complex endometrial hyperplasia	0	1	0	1	2
Proliferative endometrium	6	12	14	0	32
Proliferative endometrium with focal dysplasia	0	3	2	1	6
Irregular proliferative phase	2	0	2	0	4
Secretory endometrium	5	11	7	0	23
Atypical secretory hyperplasia	0	1	0	0	1
Deficient Secretory phase	0	1	0	0	1
Menstrual endometrium	2	7	7	2	18
Irregular shedding	0	1	1	0	2
Peudodecidual changes (? Hormone effect)	1	7	7	0	15
Arias Stella Reaction	0	1	0	0	1
Endometritis	0	1	2	0	3
Endometrial carcimoma	0	0	2	2	4
Total	**22**	**60**	**61**	**7**	**150**

hence pregnancy should be considered a complication of pregnancy until proven otherwise. Our study significantly revealed that the occurrence of menstrual disorders increases 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 Muzaffar et al. [5,6] in their study of endometrium . Our study like several others showed that proliferative lesions like disordered proliferative pattern, endometrial hyperplasia and secretory endometrium occur more commonly in the age group 41–50 years. The reason for increased incidence of dysfunctional uterine bleeding in this age group (41–50 years) may be due to the fact that these patients are in their climacteric period. As women approach menopause, cycles shorten and often become intermittently anovulatory due to a decline in the number of ovarian follicles and the estradiol level. Predominant number of cases in this study showed normal physiologic phases such as proliferative, secretory and atrophic menstrual 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. A significant number of cases showed disordered proliferative pattern in this study. Disordered proliferative pattern lies at one end of the spectrum of proliferative lesions of the endometrium that includes carcinoma at the other end with intervening stages of hyperplasias. The term "disordered proliferative endometrium" has been used in a number of ways and is somewhat difficult to define. It denotes an endometrial appearance that is hyperplastic but without an increase in endometrial volume.[7] It also refers to a proliferative phase endometrium that does not seem appropriate for any one time in the menstrual cycle, but is not abnormal enough to be considered hyperplastic. Disordered proliferative pattern resembles a simple hyperplasia, but the process is focal rather than diffuse. The exact cause of bleeding in patients more than 50 years cannot be postulated, but it may be due to anatomic vascular variations or local abnormal haemostatic mechanisms. Thin walled veins, superficial to the expanding cystic glands make the vessel vulnerable to injury. Increased incidence of endometrial hyperplasia relates to occurrence of risk factors like obesity, diabetes, increased intake of animal fat and sedentary life style. Identification of

endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. In the present study incidence of carcinoma endometrium was more common in the 41–60 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. [5-7] Chronic endometritis was observed in few patients. This condition needs to be diagnosed because with specific treatment, endometrium starts functioning normally.[8, 9]

Figure 1: proliferative endometrium with focal dysplasia

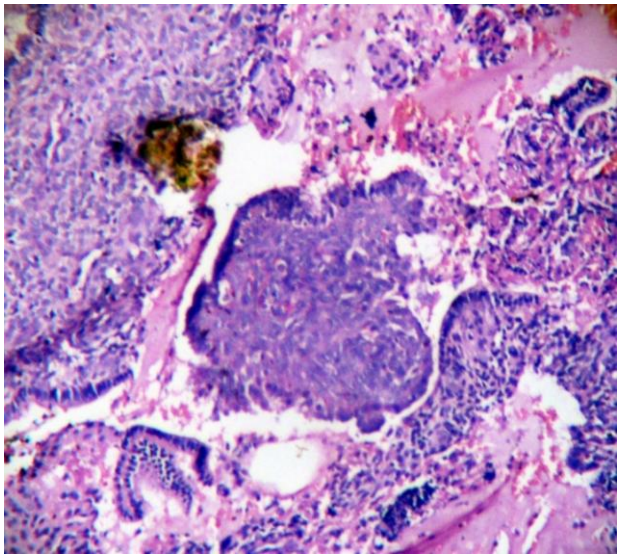


Figure 2: Endometrial hyperplasia

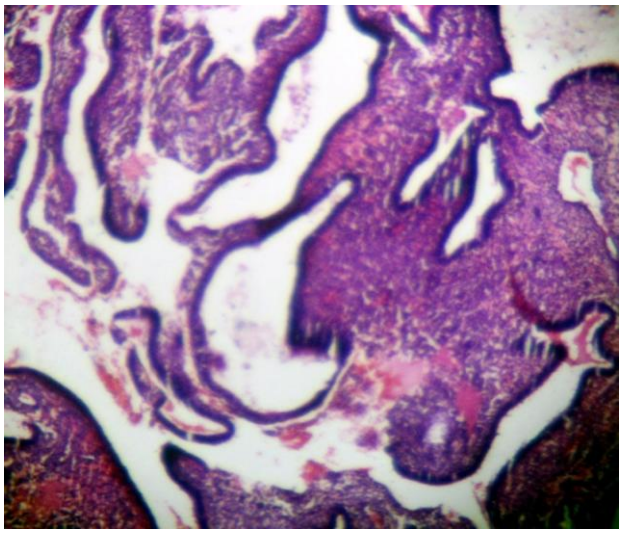


Figure 3: Adenomatous hyperplasia

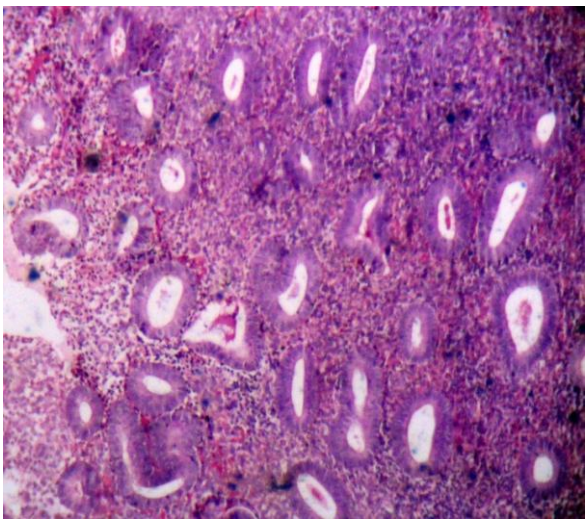
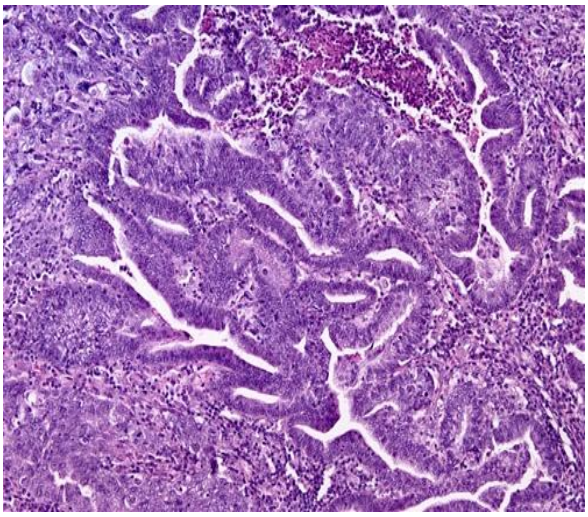


Figure 4: Endometrial adenocarcinoma



CONCLUSION

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.

REFERENCES

1. Chabra S, Jaswal M, Nangia V. Uterine size, Endometrium Fertility in women with dysfunctional uterine haemorrhage. J. Obstet Gynaecol India, 1992; 42:692-694.
2. Albers JR, Hull SK, Wesley RM. Abnormal uterine bleeding. *Am Fam Physician* 2004; 69(8): 1915-1926.
3. Litta P, Merlin F, Saccardi C, Pozzan C, Sacco G, Fracas M et al. Role of hysteroscopy with endometrial biopsy to rule out endometrial cancer in postmenopausal women with abnormal uterine bleeding. *Maturitas* 2005 ; 50(2): 117-123.
4. Shankar M, Lee CA, Sabin CA, Economides DL, Kadir RA.. von Willebrand disease in women with menorrhagia: a systematic review. *BJOG*. 2004; 111(7): 734-740.
5. Yusuf NW, Nadeem R, Yusuf AW. Dysfunctional Uterine Bleeding: A Retrospective Clinicomorphological Study over Two Years. *Pak J Obstet Gynaecol* 1996; 9(1): 27-30.
6. Muzaffar M, Akhtar KA, 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): 486-489.
7. Silverberg SG.. Problems in the differential diagnosis of endometrial hyperplasia and carcinoma. *Mod Pathol* 2000; 13(3): 309-327.
8. Escoffery CT, Blake GO, Sargeant LA.. Histopathological findings in women with postmenopausal bleeding in Jamaica. *West Indian Med J* 2002; 51(4): 232-235.
9. George AV, Guylaine L,Graves GR. Guidelines for themanagement of abnormal uterine bleeding. *J Obstet Gynaecol Can* 2001; 23(8): 704-709.