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Histopathological endometrium pattern in dysfunctional uterine bleeding

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Abstract

Dysfunctional uterine bleeding is commonest presenting symptoms and major gynecological problem in patients visiting Gynaecology OPD. The normal morphological appearance of the endometrium provides an essential background for evaluation of endometrial pathology.

Aims: To co-relate the clinical data with histopathological observation in the endometrium in dysfunctional bleeding.

Methods: This study was carried out in seventy patients of dysfunctional uterine bleeding. Endometrial biopsies were obtained and studied for the endometrial pattern in different age group, parity and bleeding pattern.

Results: The most common age group presenting with dysfunctional bleeding was 31-40 years (54%). The commonest endometrium was proliferative endometrium (42%). The commonest bleeding pattern was menorrhagia (47%) and highest incidence seen in multiparous women.

Conclusion: Endometrial biopsy is recommended during workup of patients presenting with dysfunctional uterine bleeding and to rule out any abnormal endometrial pathology.

Keywords: Dysfunctional uterine bleeding, endometrium.

Introduction

Menstruation is a normal physiological process in women`s life, starting from menarche to menopause, occurring more or less at regular interval from puberty to menopause except for pregnancy and lactation. It is not a curse of GOD and not a disease[1], but a normal process in which half to three quarter of menstrual discharge is blood, rest being fragments of endometrial tissue, desquamated vaginal epithelium, mucus , cellular debris and uterine mucosa. This complex process is initiated by functional harmonious relation of hypothalamus, anterior pituitary, ovarian

hormones and uterine mucosa. Any physiological or pathological disturbances in this mechanism may result in menstrual disorder. Dysfunctional uterine bleeding is defined as abnormal bleeding from uterus in the absence of organic disease of genital tract or abnormal bleeding from uterus unassociated with tumor, inflammation or pregnancy and is excessive in amount, duration or frequency.

The term Dysfunctional uterine bleeding should be reserved for those patients in whom pelvic examination is normal but there is no extra genital cause for the bleeding and it is defined as change in frequency of menstruation, duration of flow or amount of blood loss [2]. It is not a single entity but dysfunction may arise in the endometrium, ovary, pituitary, hypothalamus or higher center and it is designated by several names due to its doubtful etiology: Functional uterine bleeding [3]

Dysfunctional uterine bleeding is pathological/ abnormal uterine bleeding.

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Menorrhagia affects 10-30% of menstruating women at any one time, and may occur sometime during the perimenopause in upto 50% of women[4] .Dysfunctional uterine bleeding is diagnosed by exclusion and is related to basic physiology of normal menstruation. Endometrial sampling, hysteroscopy and dilatation and curettage are useful in evaluating the post teenage patient.

Dysfunctional uterine bleeding may be associated with of varied endometrial histology and it is generally agreed that there is no correlation between the amount and duration of bleeding and histological features of the endometrium. An understanding of the varieties in normal morphological appearance of endometrium provide and essential background for the evaluation of endometrial pathology [5].

Aims and objectives

The present study was undertaken to:

1. Co-relate the clinical data with histopathological observation in the endometrium.
2. Study the histopathological picture of dysfunctional uterine bleeding.
3. Study the clinical aspects of dysfunctional uterine bleeding.
4. Rule out any pathology by ultrasonography.
5. Study the falling trends of hysterectomies in dysfunctional uterine bleeding.

Materials and Methods

The present study was carried out on seventy child bearing age group of dysfunctional uterine bleeding.

Patients with pubertal and postmenopausal bleeding, all types of abortion, all cases of fibroids irrespective of size and position and patients on hormonal therapy were excluded from study, and patients with slight ovarian and uterine enlargement were included.

Detailed obstetrical and menstrual history was taken with regard to pattern of menstrual cycle; rhythm of menstrual period, amount of bleeding, accompanied pain, duration of bleeding and date of last menstrual period.

After taking history, general physical examination was done. Per speculum examination was done for any local cause of bleeding and per vaginum examination was done for size, position and mobility of uterus. Fornices were palpated for any ovarian cyst and any organic cause of bleeding.

Routine investigations and ultrasound of uterus and adnexa were done.

Sample of endometrium was obtained by dilation and curettage in premenstrual phase in cyclic bleeding and bleeding phase in acyclic periods. Patient was admitted day before. Perineal area was cleaned with soap and water. Premedication was given one hour before the operation in form of 0.6% atropine and 30 mg fortwin, 50mg phenergan i/m and patient was asked to pass urine before the operation.

Short general anesthesia was given in apprehensive patients. The patient was put in lithotomy position on operation table and perineum and vagina was painted with 5% w/v povidine- iodine solution. Entire cavity was systematically dealt with starting from fundus and going round in clockwise direction, the sample was collected and put in 10% formalin solution and sent to histopathological laboratory.

Histopathology of uterine curetting:

The obtained curettings were processed through chloroform and acetone. Paraffin blocks were prepared and sections of 5-8 microns thickness were cut and stained with haematoxylin and eosin. Uterine curettings were histopathologically classified as:

(a) Proliferative,
(b) Secretory endometrium
(c) Irregular ripening irregular shedding or mixed endometrium
(d) Endometrial hyperplasia
(e) Glandular regression with decidual like stroma
(f) Atrophic endometrium.

Observations

The present study was carried out on 70 patients with dysfunctional uterine bleeding. In patients with cyclic bleeding, dilatation and curettage was done in the pre- menstrual phase and in those with irregular periods or continuous bleeding, the dilatation and curettage was carried out in bleeding phase as a diagnostic and therapeutic measure. Histopathological examination of the endometrial curettings was carried out in all patients.

Distribution of patients according to age is as under and all cases belonged to child bearing age group:

Age in years	Number of patients	Percentage
21-30	13	19
31-40	38	54
41-50	17	24
50 and above	2	3

Distribution of patients according to bleeding complaints is as under:

Presenting symptoms	Number of patients	Percentage
Menorrhagia	33	47
Metrorrhagia	26	37
Polymenorrhagia	6	9
Polymenorrhea	2	3
Oligiomenorrhea	3	4

Distribution of patients according to the type of bleeding in relation to parity (N=70)

Type of bleeding	Nullipara	One child	2-5 children	6 and above children	Total
Menorrhagia	2	3	26	2	33
Metrorrhagia	-	1	19	6	26
Polymenorrhea	-	-	1	1	2
Polymenorrhagia	2	-	3	1	6
Oligiomenorrhea	-	1	2	-	3

Associated clinical findings

1) Pain : five patients complained of dysmenorrhea and two had vague abdominal pain.the remaining did not complain of any pain.

2) Ovaries in 2 patients the ovaries were clinically palpable.
3) Associated minor gynaecologial lesion seen on per speculum examination (n=70):

Per speculum findings	No. of patients	Percentage
Healthy cervix	51	73.0
Cervical erosion	9	13.0
Cervix hypertrophied	6	8.0
Cervical erosion with nabothian follicles	4	6.0

Associated organic lesions in cases of functional uterine hemorrhage were also noted.These lesions were appreciated on per vaginum examination and per speculum examination uterus was anteverted in 41 patients and retroverted in 29 patients.It was of normal size in 23,bulky in 32,large bulky in 7 and 8 patients with bulky uterus and cystocele and rectocele.

Histopathological studies

All cases included in this series were subjected to a detailed histopathological study of the endometrium after giving due attention to the following points:

1) Adequacy of material: In all cases curettings were sufficient for histopathological study.
2)Endometrial gland: whether in proliferative phase , secretory phase, or combination of these two forms, any variation in size and shape of glands and any cystic dilatation was also recorded.
3) Stromal picture : It was recorded as compact, loose or a combination of the two.The degree of stromal hyperplasia,evidence of decidual change and fibrosis if any was noted.
4) Blood vessel: The vascularity of the endometrium was noted.
5) Inflammatory cells

According to the above observations, the cases were divided into the following groups :

1) proliferative endometrium
2) secretory endometrium
3) irregular ripening and shedding of the endometrium or mixed endometrium
4) endometrial hyperplasia
5) glandular regression with decidua like stroma
6) atrophic endometrium

1) Proliferative endometrium:

It was the most commonly encountered endometrial pattern in the present series.It was found in 29 (42%) cases predominantly seen during 35-45 years i.e 16 (23%) cases. Next common age group was 25-35 years in 8(11%) cases. It was 4% amongst the age group 45-55 years and 2 cases in 20-25 years. Proliferative endometrium indicates anovulatory cycles. Out of 29 cases of proliferative endometrium the uterus was bulky in 17 ,normal size in 10 and bulky large in 2 patients. The most common symptom was menorrhagia,the next common symptom was metrorrhagia.Most of the cases had parity between 2-5.Proliferative endometrium was observed in 10 (14%) patients in premenstrual phase and in 19 (27%) patients in bleeding phase ofmenstrual cycle (regular or irregular).

Table showing type of endometrium according to age groups (N=70)

Age group in years	Proliferative	Secretory	Irregular ripening	Irregular shedding	Hyperplasia	Total
20-25	2	3	-	-	-	5
25-35	8	6	1	3	-	18
35-45	16	10	2	2	7	37
45-50 and above	3	2	-	-	5	10
total	29	21	3	5	12	70

Table showing type of endometrium in relation to symptoms (N=70)

Symptoms	Proliferative	Secretory	Irregular shedding	Irregular ripening	Hyperplasia	Total
Menorrhagia	11	12	3	3	4	33
Metrorrhagia	12	6	1	-	7	26
Polymenorrhea	2	-	-	-	-	2
Polymenorrhagia	2	3	1	-	-	6
Oligomenorrhea	2	-	-	-	1	3
total	29	21	5	3	12	70

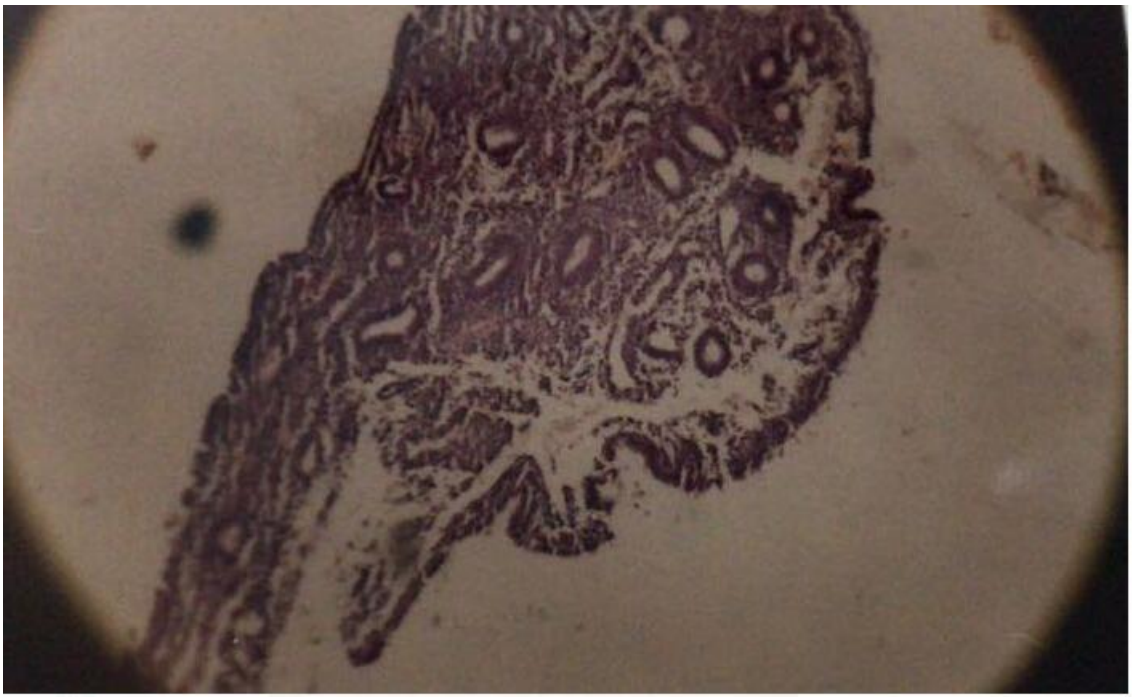
Type of endometrium in relation to the phase of bleeding (N=70)

PHASE OF BLEEDING	Proliferative	Secretory	Irregular shedding	Irregular ripening	Hyperplastic
Premenstrual phase	10	13	0	3	2
Bleeding phase	19	8	5	0	10

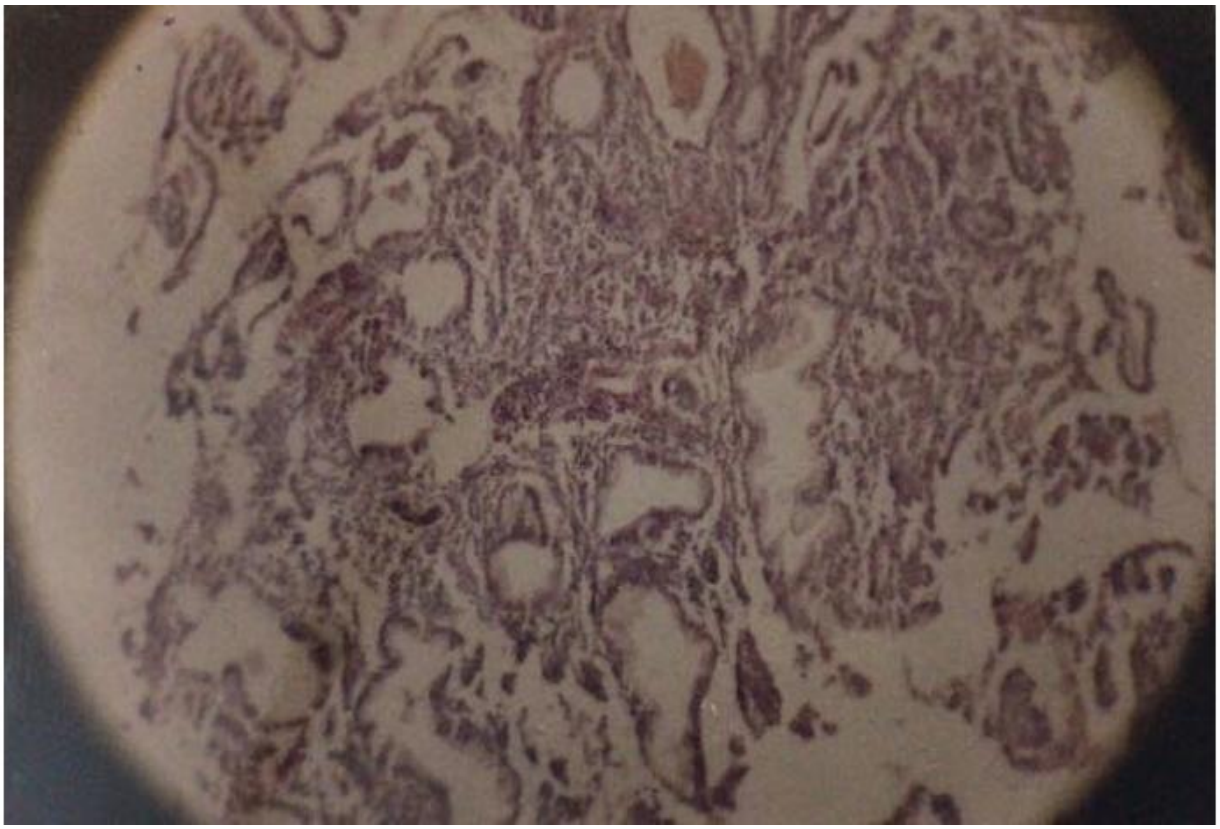
Table showing type of endometrium in relation to parity (N=70)

TYPE OF ENDOMETRIUM	Nullipara	Para-1	2-5	6 and above	Total
Proliferative	-	3	22	4	29
Secretory	3	1	14	3	21
Irregular shedding	1	-	3	1	5
Irregular ripening	-	-	3	-	3
hyperplasia	1	-	9	2	12

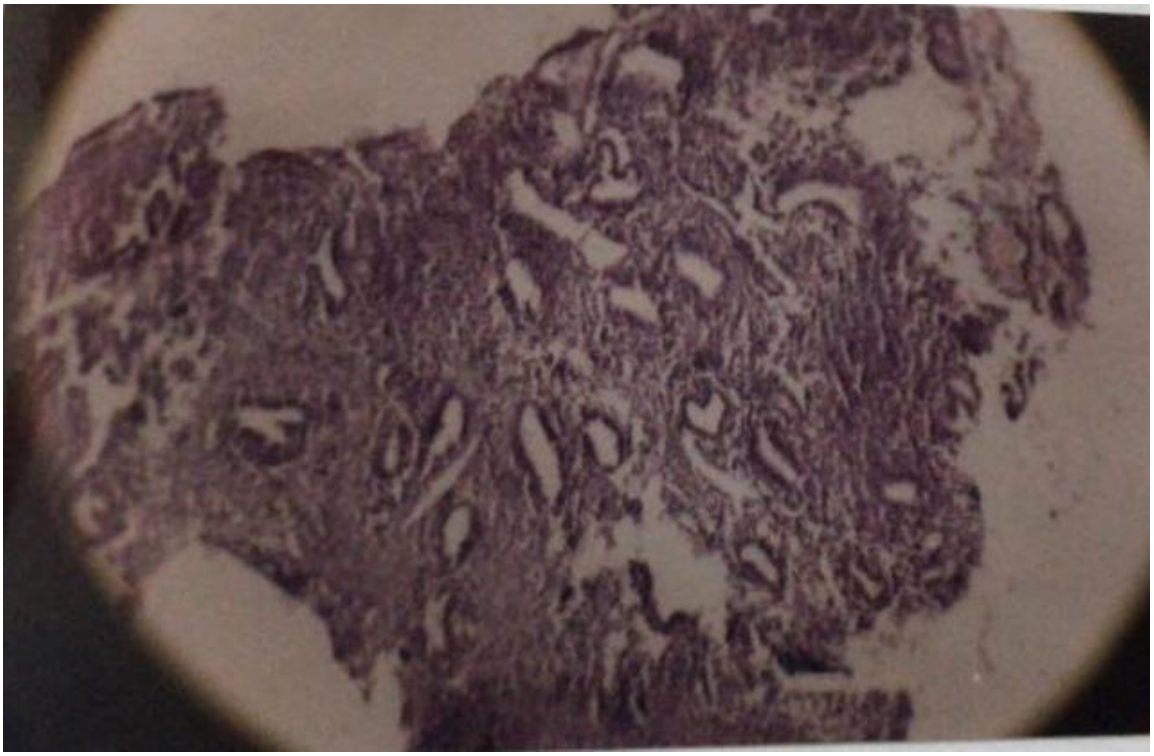
Photograph showing proliferative endometrium under low power (fig 1)



Photograph showing secretory endometrium under low power(fig 2)



Photograph showing endometrial hyperplasia under low power (fig 3)



Discussion

Endometrial tissue is vulnerable for pathological lesion which are hormonally sensitive and responsive tissue and which undergoes changes throughout the reproductive life. Dysfunctional uterine bleeding is one of the commonest complaints in female patients to consult gynecologist. Dysfunctional uterine bleeding includes, bleeding due to endometrial hyperplasia, proliferative endometrium, secretory or Irregular ripening or shedding. dysfunctional uterine bleeding is the diagnosis of exclusion in which no specific organic cause can be attributed to as the reason of bleeding. [6]

Endometrial curettage is the most common mean for assessing dysfunctional uterine bleeding. In this procedure, scrapings of endometrium lining and histopathological examination of tissue is done. This procedure is well accepted by the patients.

The highest incidence of dysfunctional bleeding was noted in age group of 31 -40(54%) years in the present study which is in concordance with the result of studies by the Nedoss [7], Muzaffar [8] and Saraswathi [9], Bhumika [10]In the present study the highest complaints were menorrhagia 47% which is in concordance with Archana (43.85%)[11], Moghal (41%) [12] , Ara & Ruhi (49.06%) [13] followed by metrorrhagia 37% whereas the study by Mehrotra VG [14]showed menorrhagia was commonest type of bleeding followed by polymenorrhagia and metrorrhagia.

Comparison of histopathological of endometrium in various studies reveals that about half of the patients with dysfunctional uterine bleeding had normal proliferation or secretory type of endometrium. The bleeding in proliferative type may be due to anovulatory cycles and bleeding in secretory type is due to ovulatory cycles in dysfunctional uterine bleeding. In the present study proliferative phase of endometrium was seen in 42% cases which is in concordance with results of studies by Patil [15]Damle (35.09%) [16], Dhangal (38.5%) [17]. Secretory type of endometrium was seen in 30% cases which is in concordance with results of study by Patil [15] Rest included irregular ripening and shedding 11% and endometrial hyperplasia 17% in concordance with Patil. Majority of cases are seen in age group of31-40 years which is in concordance with Jairajpuri ZS [18]. The highest incidence of DUB is seen in multiparous women (72%) which is in concordance with Desh Pande [19]

Comparison of histopathological findings

Histopathological Findings	Patil	Pilli	Zawar	Present Study
Proliferative Phase	22	34	43	29
Secretory Phase	19	13	12	21
Endometrial Hyperplasia	40	44	37	12
Irregular shedding/Ripening				8

Out of the 70 patients of dysfunctional uterine bleeding , 50 came for follow up and it was assumed that rest of the 20 patients were relieved of their symptoms. Out of 50 patients, 15 patients with proliferative endometrium were given hormonal treatment. Only 3 patients had hysterectomy. Out of which 2 patients had associated 2 degree uterovaginal prolapse and 1 patient had repeat episode of same complaint after hormonal treatment of 6-9 months. Dass & Chugh[19] show maximum responders to hormonal treatment and surgical treatment in 3 patients in the form of hysterectomy having proliferative endometrium in whom the hormonal treatment fails. Management of anovulatory bleeding in adolescent is clomiphene citrate and progesterone who want to conceive but those who did not desire future fertility and had completed their family and non responders to hormonal treatment opted for surgical treatment.

15 patients had secretory endometrium and responded well to antifibrinolytic agents and low dose oral contraceptive pills.

Summary and Conclusions

Dysfunctional uterine bleeding is an important complaint of patients treated in gynaecological wards. A series of 70 patients with clinical diagnosis of dysfunctional bleeding have been studied and were correlated clinically and histologically. Maximum no. of cases (54%) were between age group of 31-40 years and minimum 3% were above age of 50 years. Dilatation and curettage was performed in the premenstrual phase in 28 cases while in others it was done in bleeding phase. Proliferative endometrium was seen in 42% cases between age of 35-45 years with normal sized and bulky uterus. Secretory endometrium was found in 30% cases and most patients were between 35-45 years. Mixed type of endometrium was seen in 11% with equal frequency in age group of 25-35 years and 35-40 years. The incidence of endometrial hyperplasia was found in 7% cases above age of 35 years. Out of the 50 patients who came for follow up<41 responded to hormonal treatment and hysterectomy was done in 9 patients. It is concluded that histopathological examination can indeed be rewarding in arriving at a definitive diagnosis and to exclude malignant diseases of uterus and it is not justifiable to embark hormonal treatment without information regarding state of endometrium in dysfunctional uterine bleeding.

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Conflict of interest: None declared

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