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Clinicopathological Study of Endometrium in Dysfunctional Uterine Bleeding

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Abstract: Introduction: *Bleeding per vagina is a common symptom in gynaecologic disease , beingassociated with a variety of pathological conditions of female genital tract.*
When there is no obvious cause for abnormal bleeding gynaecologists commonly use the term "dysfunctional uterine bleeding". DUB is one of the most frequently encountered condition, among women in reproductive age.[2].A study is done to know the histopathology of the endometrium indysfunctional uterine bleeding. To correlate the histopathology with, age, parity andbleeding pattern in dysfunctional uterine bleeding.
Materials and methods: *The material for this study consists of 150 patients with clinically diagnosed as dysfunctional uterine bleeding during the period of August 2017 to April 2019.*
Results: *The youngest was 18 years and oldest was 62 years. Majority of the patients showed cystoglandularhyperplasia (42%). Cysptoglandular hyperplasia was more common in the age group 36-40 years and 41-45 years ageMenorrhagia wan commonest bleeding pattern seenmultiparous women. Half of the patients were anemic.*
Conclusion: *DUB was a common gynaecological complaints, predominantlyseen in the age group 31-40 years.Menorrhagia wan commonest bleeding pattern seenmultiparous women. Half of the patients were anemic. Hyperplastic endometrium was the commonest observed type.of endometrium, followed by proliferative type endometrium. Proliferative and secretory endometrium were commonlyseen in the age group of 31-40 years. The hyperplasticendometrium seen in the age group of 38-40 years*

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I. Introduction

Bleeding per vagina is a common symptom in gynaecologic disease , beingassociated with a variety of pathological conditions of female genital tract. When there is no obvious cause for abnormal bleeding gynaecologists commonly use the term "dysfunctional uterine bleeding". DUB is one of the most frequently encountered condition, among women in reproductive age.Dysfunctional uterinebleeding is defined by various authors .Gravis defined DUB as menorrhagia or Metorrhagia caused by impairment of endocrine factors they normally control the menstrual function.Sutherlands defines abnormal uterine bleeding which in not explained by any palpable lesion the reproductive organs.The conventional definition of DUB, is abnormal uterine bleeding in absence of pelvic pathology , by ordinary clinical examination is open to the objection because betterdiagnostic aids such as endometrial biopsy, curettage, vaginal smear, laproscopy, endoscopy would reveal definite pelvic pathology in many cases diagnosed as DUB.In the present study definition of Clark.B. Smith, [11] any type of bleeding associated with tumor inflammation, or pregnancy, after careful clinical examination of the patientboth local and general is regarded as DUB.DUB is a hormonal disorder, knowledge of the normal hormonal control of mensuration is useful .Mensuration may be defined as a "periodic and cyclical shedding of pregestational endometrium accompanied by loss of blood " It takes place atapproximately 28 day intervals with range of 21-32 days between the menarche and menopause[5]. Mensuration is dependant on hormonal control mainly from the hypothalamus, anterior pituitary and ovary.The endometrium has remarkable ability to respond to the ovarian hormones in a cyclical fashion, with the resultant monthly phenomenon of menstruation, and it has an excellent regenerative capacity towards restoration after a normal slough[7].

II. Aims And Objectives

1)To study the histopathology of the endometriumdysfunctional uterine bleeding
2) To correlate the histopathology with, age, parity andbleeding pattern in dysfunctional uterine bleeding.
3) To evaluate incidence of incidental organic lesions indysfunctional uterine bleeding.

III. Materials and Methods

The material for this study consists of 150 patients with clinically diagnosed as dysfunctional uterine bleeding during the period of August 2017 to April 2019.The material consists of endometrial curettings from patients of Siddhartha Medical college, Vijayawada. All these in the patients were selected at random majority of them are of reproductive age group .

In all the 150 patient detailedclinical history was taken and thorough clinical examination, which includes general, systemic and gynaecological examination was done..ALL these 150 patients after excluding other disorders by pelvic examination and investigations were diagnosed as "dysfunctional uterine bleeding" For all these patients dilatation and curettage was done and the material was received for histopathological examination.Endometrial curettage was done in majority of the patients prior to hysterectomy as a therapeutic and/or a diagnostic procedure. The aim was to exclude a surface endometrial lesion and it sometimes had a therapeutic effect as well. Therapeutic curettage was done at the time of bleeding and a diagnostic curettage, premenstrually or on the 5th-10th day of bleeding.

The curettage specimen was fixed in 10% aqueous formaldehyde for a period of 8-12 hours, the tissue was processed for paraffin embedding and 3-5 um sections were cut and routinely stained with Haematoxylin and Eosin stain[5,8].

Histopathological appearances were studied and recorded. Whenever required special stain like periodic acid-Schiff, Vangieson's and reticulin stains were performed to evaluate secretory activity and for demonstration of collagen and reticulin fibres.

IV. Results And Observations

150 DUB patients were analysed in the following ways:

1) Its relation to various age group
2) Its relation to parity
3) Type of bleeding in DUB
4) Type of bleeding in relation to age
5) Clinical findings in relation to DUB
6) Haemoglobin percentage in grams in 150 DUB cases.
7) Increased incidence of menorrhagia after tubal ligation
8) Type of endometrium in 150 DUB cases
9) Type of endometrium related to age group
10) Incidental organic lesions in DUB
11) Endometrial histology in presence and absence of organic lesions

Table 1: Relation of DUB with different Age groups

Age in years	No.of Cases	percentage
16 – 20	02	1.3
21- 25	10	6.7
26 -30	26	17.3
31- 35	18	12
36- 40	37	24.7
41-45	38	25.3
46-50	15	10.0
51-55	NIL	0.0
56-60	3	2.0
61-65	1	0.7
Total	150	100

The above table is showing age distribution of 150 DUB patients .The youngest was 18 years old and the oldest is 62 years old .the maximum incidence of DUB was in the age group of 36-40 years (24.7 %) followed by 41-45 years (25.3%).Minimum incidence was in the age group of 16-20 years and 61-65 years.

Table 2: Type of Bleeding in DUB

Type of bleeding	NO.of Cases	Percentage
Menorrhagia	80	53.3
Polymenorrhea	16	10.7
Polymenorrhagia	5	3.3
MetropathicaHaemorrhagica	12	8.0
Metrorrhagia	25	16.7
Menometrorrhagia	9	6.0
Oligomenorrhagia	3	2.0
Total	150	100

The above table showing 150 patients who came with the complaint of different bleeding pattern. MenorrhagiA was the most common type of abnormal bleeding seen in 80 patients (53.3%), 25 (16.7%) patients are with complaint of metrorrhagia.16 (10.7%) patients presented with polymenorrha.8% patients presented with metriopatheia haemorrhagica. 9(6.0%) patients presented with menometrorrhagia, 3 (2.0%) patients presented with oligomenorrhoea.

Table 3: Clinical findings inrelation to DUB

Clinical findings	No . of Cases	percentage
1.Size of uterus		
a. normal size	132	88
b.Bigger than normal size (upto 5 weeks)	18	12
2.Ovarian enlargement		
a.Normal	140	93.3
b.Cystic Ovaries	10	6.7

General pelvic examination was done for all 150 DUB patients, prior to the dilatation and curettage under aseptic precautions, bimanual examination done. Size of the uterus is normal in 132 patients, bigger than the normal up to 5 weeks in 18 patients. In 140 patients' adnexa not palpable by bimanual examination. In 10 patients cystic ovary were felt on one side.

Table 4: Table showing haemoglobin percentage in grams

Hemoglobin in gms	**NO.of cases**	**percentage**
3.1 – 5	1	0.7%
5.1 – 7	10	6.7%
7.1 – 10	98	65.3%
Above 10	41	27.3%

Majority of the patients (65.3%) had haemoglobin<10 gm% they were moderately anaemic having haemoglobin between 7.1-10gms%.Above 41 patients had haemoglobin above 10 gms %.10 patients had haemoglobin between 5.1 – 7 gms %.only one patient had severe anaemia of Hb 4.4 gms%.

. **TABLE-5** Endometrial Pattern in 150 DUB Patients

S.L.no	**Endometrial pattern**	**No.of Cases**	**Percentage**
1	Cystoglandular hyperplasia	63	42.0
2.	Proliferative Endometrium	38	25.3
3.	Secretory phase Endometrium	22	14.7
4	Menstrual Bleeding	11	7.2
5.	Irregular shedding	9	6
6.	Chronic Nonspecific endometritis	4	2.7
7	Decidualized Endometrium	1	0.7
8	Adenomatous hyperplasia	1	0.7
9	Granulomatous endometritis	1	0.7
	Total	150	100

Out of 150 DUB patients 63 patients showed cystoglandular hyperplasia and 1 case showed decidualised endometrium , 1 case showed Adenomatous hyperplasia and one case showed granulomatous endometritis.

Table 6: Endometrial Histology in presence and absence of organic lesions

Type of endometrium	**No.of cases**	**Organic lesions present**	**Organic lesions absent**
Cystic Glandular Hyperplasia	63	--	--
Proliferative	38	4	34
Secretory	22	2	20

The above table is showing organic lesions in endometrium .In Cystic glandular hyperplasia no organic lesions were found .In the proliferative phase 4 patients showed organic lesions with secretory phase 2 patients show organic lesions**.**

V. Discussion

Dysfunctional uterine bleeding is one of the most frequently encountered conditions in gynaecologicalpractise**.** Dysfunctional uterine bleeding may present at any age between puberty andmenopause and it may occur with any type of endometrium. Anovulation was most common at the two extremes of menstrual life (i.e menarche and menopause). The incidence of DUB in different age groups is compared with that of other studies

Table 10 : Age distribution of DUB Cases

	Authors	**No.of cases**	**15-20 years**	**21-30 years**	**31-40 years**	**41-50 years**	**Above 50 years**
1	Suttherland et al	1000	36 (3.6%)	242 (24.2%)	343 (34.3%)	362 (36.3%)	17 (1.7%)
2	Anasuya et al	117	17 (14.5%)	24 (20.5%)	33 (28.2%)	38 (32.5%)	5 (4.3%)
3	Bhattacharji et al	164	14 (8.5%)	50 (30.5%)	56 (34.2%)	44 (26.8%)	---
4	Wagh et al	552	97 (17.6%)	215 (39.0%)	143 (25.9%)	94 (17.0%)	3 (0.5%)
5.	Gosh et al	50	--	2 (4.0%)	15 (30.0%)	23 (46.0%)	10 (20.0%)
6	Mahrotra et al	150	15 (10.0%)	72 (48.0%)	35 (23.3%)	25 (16.7%)	3 (2.0%)
7	A.V.K.Nirmala	3569	205 (3.34%)	2295 (37.46%)	1051 (17.15%)	18 (0.29%)	----
8	Present Study	150	2 (1.3%)	36 (24.0%)	55 (36.7%)	53 (35.5%)	4 (2.7%)

In the present study of 150 cases, 2 patients were in the age group of 15-20 years , 36 patients were in the age group of 21-30 years , 55 patients in the age group of 31-40 years, 4 patients were in the age group of above 50 years. Maximum incidence seen in the age group of 31-40 years (36.7%)

Table 12 : comparative incidence of Histopathological Type of endometrium in various series.

Authors	**Histological Types of Endometrium**						
	Proliferative	Secretary	Irregular shedding	Irregular ripening	Hyperplastic Endometrium	Atrophic Endometrium	Pill Endometrium
Das and Chugh et al	41.50%	22.50%	1.08%	1.08%	30.60%	1.08%	0
K.Kanaka et al	34.00%	4.00%	--	--	62.00%	0	0
Narula et al	37.72%	35.92%	--	--	20.91%	5.45%	0
Joshi & Deshpane	51.94%	16.82%	--	--	31.24%	0	0
Present Series	25.30%	14.70%	6.00%	--	42.70%	0	0.7%

The incidence of proliferative endometrium in the present series (25.3%) nearly correlates with that of Kanakadurgamba and K.Srinivasraoseries.Joshi and Deshpande have found higher incidence 51.94%.

VI. Summary

A Study of 150 patients , clinically diagnosed as dysfunctional uterine bleeding were evaluated for endometrial for endometrium curettage , histology and correlated with age , parity and type of bleeding was done.

The patients belonged to various age groups .The youngest was 18 years and oldest was 62 years. The maximum incidence of DUB was noticed in the age group of 36-40 years (24.7%) and 41-45% (25.3%). Maximum incidence of dysfunctional uterine bleeding was seen in multiparous women.he common bleeding pattern encountered in DUB was menorrhagia 53.3%. Menorrhagia and polymenorrhea were commonly noted in the age group of 31-40 years. Metrorrhagia and metropathiahaemorrhagica were seen in age group of 41-50 years.5.3% patients were moderately anaemic having haemoglobinpercent between 7.1-10 gm% 10. gm7%. 6.7 % patients had HB between 5.1 - 7 gm% and 0.7%had Hb % between 3.1 - 5 gms%. Majority of the patients showed cystoglandularhyperplasia (42%). Cryptoglandular hyperplasia was more common in the age group 36-40 years and 41-45 years agegroup (16 cases). In the 21-25 years age group, only 2 patients were seen, and in 26-30 years- 8 patients and 31 - 35 years 6 patients and 36-40 years 19 patients were seen. The incidence of normal endometrium was 40%i.eproliferative endometrium (25.3%) and serology endometrium(14.7%) .Proliferative endometrium wasseen in only onepatient in the age group of 21-25 years (2.6%) and in theage group of 26-30 years 7 patients (18.4%). 31-40 yearspatients were seen (36.8%).Secretory endometrium is seen

in 3 patients (13.6%)in the age group of 21-25 years, 4 patients (18.2%) wereseen in the age group of 26-30 years, 3 patient (13.6%) inthe age group of 31-35 years, Above 40 year 12 (54.5%)patients had secretory endometrium. The incidence of Irreglar shedding was 6%. 4 patients(44.4%) of irregular shedding were mean the age group of21-30 years and 4 (44.4%) patients were were in the age group of 31-40 years. Above 50 years only one patient(11.2%) was noticed. Histochemical studies: DUB Cases which showed secretoryendometrium has decreased amount of glycogen. In cases which showed hyperplastic endometrium. Glycogen was presentin variable amounts, suggesting lack of cyclical activity.

VII. Conclusion

DUB was a common gynaecological complaints, predominantlyseen in the age group 31-40 year.Menorrhagiais commonest bleeding pattern seenmultiparous women. Half of the patients were anemic. No specific relationship exists between blooding patternage and parity.

Hyperplastic endometrium was the commonest observed type.of endometrium, followed by proliferative type endometrium.Proliferative and secretory endometrium were commonlyseen in the age group of 31-40 years. The hyperplasticendometrium seen in the age group of 38-40 years,.No definite relationship exists between endometrial typeand parity. Menorrhagia was the commonest bleeding pattern observedin the patients having proliferative, secretory andhyperplastic endometrium. Incidental organic lesions were seen in 4% of patients. PAS stain showed decreased amount of glycogen in secretory phase in DUB patients..

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Images.FIG-1 Mild Cystoglandular Hyperplasia

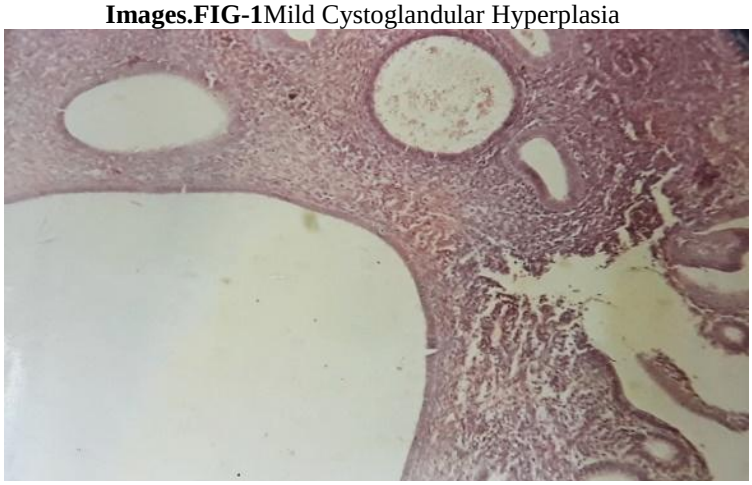


FIG-2: Adenomatous Hyperplasia without atypia

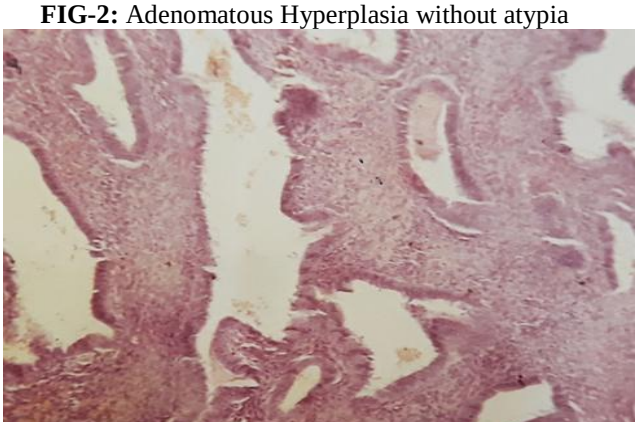
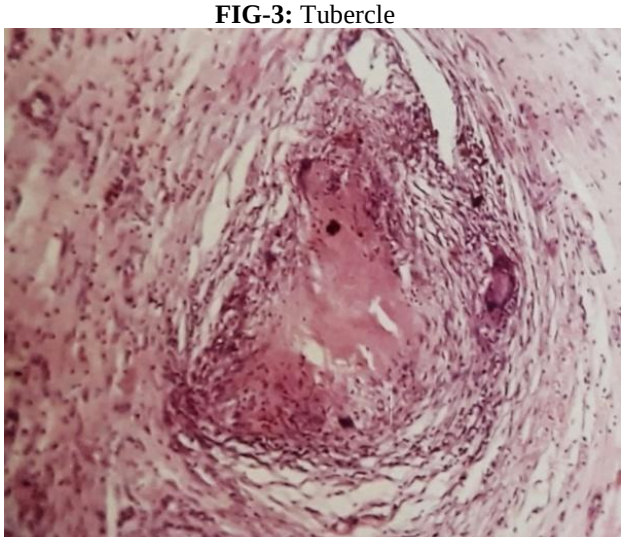
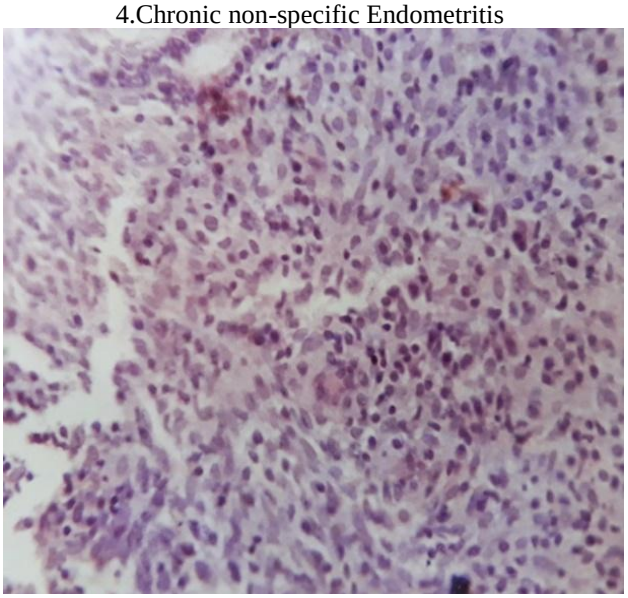


FIG-3: Tubercle



4.Chronic non-specific Endometritis



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