Original Research Article

Histopathological and clinical evaluation of Endometrium in patients of dysfunctional uterine bleeding (DUB): A cross sectional prospective study in quaternary care centre of different district of Gujarat, India

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Abstract

Context: Dysfunctional uterine is the bleeding most common condition for which patients needs to consult gynaecologist. Evaluation of histopathological findings of endometrium in patients of DUB helps in management and counselling of patients and useful to find out the pathological incidence of organic lesions prior to surgery. **Aims:** The aims are to analyse the histomorphological pattern of endometrium in dysfunctional uterine bleeding (DUB), assessment of architectural evaluation of the functional endometrium and providing data with reference to subsequent treatment regimen. **Methods and Material:** Total of 1803 patients presenting with DUB were subjected to evaluate with gross and microscopic examination of dilatation & curettage materials and hysterectomy specimens of the patients either admitted or came in OPD at quaternary care centre of different district or specimens received from outside hospitals. **Results:** Out 1803 of these, 621 cases were reported as Proliferative phase of endometrium, 410 cases were reported as Secretory phase of endometrium, 271 cases were of disordered proliferative endometrium, 149 cases of Basal endometrium, 88 cases of Endometrial hyperplasia, 61 cases of Menstrual endometrium, 53 cases of Hormonal induced changes of endometrium, 44 cases of Atrophic endometrium, 26 cases of Autolytic endometrium, 26 cases were reported as Well differentiated endometrial adenocarcinoma, 18 cases of Acute endometritis and 9 cases of Menstrual with hormonal included endometrium, Secretory with autolytic endometrium, Papillary syncytial changes of endometrium and Senile cystic endometrium. Maximum cases of dysfunctional uterine bleeding (823/1803) were seen between 41-50 years of age. Most of the cases presented with menorrhagia (1045/1803). **Conclusions:** Evaluation of endometrium in patients of DUB helps in management and counselling of patients and useful to find out the pathological incidence of organic lesions in DUB prior to surgery.

Key-words: Uterine bleeding, Proliferative phase of endometrium, Secretory phase of endometrium, Endometrial hyperplasia

Introduction

Dysfunctional uterine bleeding (DUB) is characterised by excessive, heavy, prolonged duration or frequent bleeding from uterine origin. DUB is not because of pregnancy or any other identifiable pelvic or systemic disease. This is the reason why DUB is a diagnosis of exclusion[1]. Dysfunctional uterine bleeding is the most common problem occur in women in the 30– 50 years' age group. The incidence of DUB get increases as age advances till women reaches menopause[2]. The endometrium which lines the uterine cavity is one of the most dynamic tissues of our human body, an interesting and useful tissue for histopathological study. It is characterized by cyclic phases of cell proliferation, differentiation and death in response to sex steroids liberated from the ovary. An understanding of the variation in the normal morphological picture of the endometrium gives an essential background for the evaluation of various endometrial pathology[3]. Massive menstrual bleeding may affect a womans health both medically as well as socially and leads to problems such as iron deficiency anemia and social phobia respectively. Dysfunctional uterine bleeding is the commonest condition which later manifest as iron deficiency in the developed world and of chronic illness in the developing countries[1].

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Aims and Objectives

- To study the microscopic features of endometrium in Dysfunctional Uterine Bleeding (DUB) and to establish the cause of DUB.
- To study correlation of age, parity, different clinical presentation and different clinical findings (bleeding pattern) with histopathological findings.

Materials and Methods

This cross-sectional prospective study done at in quaternary care centre of different district of Gujarat started after HERC approval and 1803 cases were studied from October 2011 to June 2021. The study included examination of dilatation & curettage materials and hysterectomy specimens of the patients either admitted at Hospital or OPD patients or specimens received from outside hospitals.

For each case, a brief essential clinical history and investigational findings were recorded. Patients age, clinical presentation and clinical indication as well as the type of hysterectomy were reviewed. Only one dominant diagnosis was considered and documented as the indication for the procedure.

D & C and hysterectomy specimens were studied grossly as well as microscopically. After receiving the surgical specimens in 10% formalin at the department of Pathology, detailed gross examinations of whole specimen done. For fixation purpose, Additional cuts were made based on the size of the specimen and morphology of representative cut sections were recorded.

The tissue bits from representative area were taken for tissue processing and paraffin blocks were prepared. The blocks were sectioned and routinely stained with haematoxylin and eosin stain. Detailed findings and microscopic features were evaluated and

recorded.The histopathology requisition forms submitted along with specimen were reviewed for intra-operative findings by the concerned surgeon. In case of any inadequacy in the history, the concerned treating surgeon was consulted for further information. Microscopic and macroscopic findings or any incidental findings were documented in the final report.Thereafter, various data were collected from the D & C and histopathological findings like various indications for performing hysterectomy, types of lesions identified in the histopathological examination, percentage of cases in which clinical diagnosis were correlated with the histopathological finding, frequency of unexpected diseases or pathologies, various pattern of occurrence of different pathologies in relation to age and mode of presentation of patients.

Further, the obtained parameters were evaluated using descriptive statistical analysis. Statistical analyses were performed using the IBM SPSS (Statistical package for the Social Sciences v15.0) and Microsoft Excel 2007 software.

Inclusion criteria

Endometrial tissue from patients of all age group clinically diagnosed as DUB (in whom there was no organic pathology) like-

- Normal ovulatory DUB
- An ovulatory DUB like in – Insufficient follicular development and persistent ovarian follicle.
- Ovulatory DUB like in corpus luteal insufficiency and persistent corpus luteum.
- All the endometrial samples included for the study will obtained by dilatation and curettage (D&C) method and hysterectomy.

Exclusion criteria

Patients presenting with DUB due to pregnancy related complications, systemic causes and iatrogenic causes.

Results

Total 1803 cases were studied from October 2011 to June 2021. Age of the patients ranged from 23 years to 65 years with mean 44 years. All 1803 patients presented with abnormal excessive bleeding per vagina. The duration of which varied from 5 days to 3 years. Of 1803 patients, 1479 (82%) were 3rd to 4th decade and out of that 914 (61.79%) patients presented with menorrhagia. Out of 1803 patients 152 (8.4%) presented with mild bleeding per vagina, 171 (9.4%) presented with moderate bleeding per vagina and 1480 (82%) presented with severe bleeding per vagina. (Table 1, 2) History of hormonal intake was found in 62(3.4%) of patients.

Based on the number and type of endometrial glands, glandular epithelial lining and stromal features, the endometrium was grouped into different categories. Out of 1803 DUB patients, 621 (34.5%) patients showed feature of proliferative endometrium (Table 3,7). Majority of the patients were between 31-50 years of age i.e. 540 (86.96%). 367 (67.97%) patients presented with menorrhagia which was most common bleeding pattern in proliferative phase (Table 3, 6). 271 (15%) showed features of disordered proliferative endometrium. 222 (81.9%) patients belonged to 31-50 years age groups. 173 (63.2%) patients presented with menorrhagia which was most common bleeding pattern in disordered proliferative endometrium. 410 (22.7%) showed secretory phase. Maximum numbers of patients 360 (87.8%) were between 31-50 years of age in secretory phase. Menorrhagia was the most common bleeding pattern seen in 325 (79.26%). 149 (8.3%) showed basal endometrium. Maximum numbers of patients 112 (75.16%) were between 41-50 years of age. Menorrhagia was the most common bleeding pattern seen in 128 (85.9%). Feature of endometrial hyperplasia were seen in 88 (4.9%) biopsies which includes 80 (90.90%) biopsies of simple glandular hyperplasia and 8 (9.10%) biopsy of complex atypical hyperplasia. Maximum numbers of patients 41 are seen between 21-30 years and 37 patients between 41-50 years of age. Polymenorrhagia was the most common bleeding pattern seen in 64 (72.72%) patients with endometrial hyperplasia. 61 (3.4%) biopsies showed menstrual phase endometrium. Maximum numbers of patients 58 (95%) were between 41-50 years of age. Menorrhagia and polymenorrhagia was the most common bleeding pattern seen in patients (Table 2,3,7). 9 biopsy showed menstrual with hormonal induced changes of endometrium. 53 (2.9%) biopsies showed hormonal induced changes. Maximum numbers of patients 50 (94.3%) were between 41-50 years of age. 44 (2.4%) endometrial biopsies showed atrophic endometrium. Maximum numbers of patients 35 were between >50 years of age. Bleeding following amenorrhoea was the most common bleeding pattern seen in all 40 patients. 26 (1.5%) endometrial biopsies showed autolytic endometrium. 9 (0.5%) biopsy showed secretory phase with autolytic endometrium. 18 (1.0%) endometrial biopsies showed acute endometritis. 9 (0.5%) endometrial biopsy showed papillary syncytial changes of endometrium. 9 (0.5%) endometrial biopsies showed senile cystic endometrium. 26 (1.5%) endometrial biopsies showed well differentiated endometrial adenocarcinoma. Maximum numbers of patients 20 (76.9%) were >50 years of age. Bleeding following amenorrhoea was the most common bleeding pattern seen in all 26 (100%) patients

Table 1: Type of Bleeding According to age

Age (Years)	Bleeding Pattern							
	Bleeding following amenorrhoea	Menorrhagia	Metrorrhagia	Menometrorrhagia	Polymenorrhoea	Polymenorrhagia	Oligo menorrhoea	**Total**
21-30	0	101	23	22	0	10	10	**166**
31-40	0	428	0	24	26	167	11	**656**
41-50	29	486	8	20	27	253	0	**823**
>50	123	30	0	0	0	5	0	**158**
Total	**152**	**1045**	**31**	**66**	**53**	**435**	**21**	**1803**

Table 2: Co-relation of bleeding pattern with endometrial pattern

	Proliferative endometrium	Secretory endometrium	Disordered proliferative endometrium	Basal endometrium	Menstrual endometrium	Hormonal induced changes of endometrium	Menstrual with hormonal induced endometrium	Atrophic endometrium	Autolytic endometrium	Secretory with autolytic endometrium	Endometrial hyperplasia	Acute endometritis	Papillary syncytial changes of endometrium	Senile cystic endometrium	Endometrial adenocarcinoma – Well differentiated	**Total**
Bleeding following amenorrhoea	20	2	15	9	4	8	2	40	4	0	13	0	0	9	26	**152**
Menorrhagia	322	325	173	128	29	10	7	0	15	9	0	18	9	0	0	**1045**
Metrorrhagia	10	6	0	0	3	3	0	2	2	0	6	0	0	0	0	**31**
Menometrorrhagia	25	2	35	2	0	0	0	0	0	0	2	0	0	0	0	**66**
Polymenorrhoea	25	5	7	6	0	5	0	2	0	0	3	0	0	0	0	**53**
Polymenorrhagia	199	70	41	4	25	27	0	0	5	0	64	0	0	0	0	**435**
Oligo menorrhoea	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**21**
Total	**621**	**410**	**271**	**149**	**61**	**53**	**9**	**44**	**26**	**9**	**88**	**18**	**9**	**9**	**26**	**1803**

Table 3: Type of endometrial pattern related to age group

Endometrial pattern	21-30 years	31-40 years	41-50 years	>50 years	Total
Proliferative endometrium	46	292	248	35	**621**
Secretory endometrium	46	253	107	4	**410**
Disordered proliferative endometrium	30	73	149	19	**271**
Basal endometrium	0	17	112	20	**149**
Menstrual endometrium	0	3	58	0	**61**
Hormonal induced changes of endometrium	0	3	50	0	**53**
Menstrual with hormonal induced endometrium	0	0	5	4	**9**
Atrophic endometrium	0	0	9	35	**44**
Autolytic endometrium	0	3	23	0	**26**
Secretory with autolytic endometrium	0	8	1	0	**9**
Endometrial hyperplasia	41	0	37	10	**88**
Acute endometritis	3	4	8	3	**18**
Papillary syncytial changes of endometrium	0	0	3	6	**9**
Senile cystic endometrium	0	0	7	2	**9**
Endometrial adenocarcinoma – Well differentiated	0	0	6	20	**26**
Total	**166**	**656**	**823**	**158**	**1803**

Table 4: Age incidence of patients with DUB

Authors	No. of patients	<20 years	21-30 years	31-40 years	41-50 years	>50 years
Sutherland 1949[4]	861	33 (3.9%)	194 (22.5%)	295 (34.3%)	325 (37.7%)	14 (1.6%)
Dass A and Chugh S .1964[5]	117	17 (14.53%)	24 (20.51%)	33 (28.21%)	38 (32.5%)	5 (4.3%)
Kanakdurgamba K. and Srinivas Rao K. 1964[6]	150	22 (14.67%)	66 (44%)	38 (25.33%)	24 (16%)	-
Wagh K.V. and Swamy V. 1964[7]	552	97 (17.6%)	215 (39.0%)	143 (26%)	94 (17.03%)	3 (0.54%)

Mehrotra V.G. et al 1972[8]	150	15 (10%)	72 (48%)	35 (23.33%)	25 (16.67%)	3 (2%)
Nirmala A.V.K 1991[9]	6125	205 (3.35%)	4553 (74.01%)	1349 (22.02%)	18 (0.29%)	
Allahbadia G.1992p[10]	50	20 (40%)	16 (32%)	10 (20%)	4 (8%)	-
Pilli G.S. et al 2002[11]	100	2 (2%)	58 (58%)		38 (38%)	2 (2%)
Mitra K. and Chowdhary M.K. 2003[12]	100	10 (10%)	26 (26%)	62 (62%)	2 (2%)	-
Zeeba et al 2013[13]	638	18 (2.82%)	156 (24.25%)	212 (33.22%)	229 (35.89%)	23 (3.59%)
Doraiswami et al 2011[14]	409	6 (1.5%)	85 (20.8%)	116 (28.4%)	137 (33.5%)	65 (15.8%)
Present study	**1803**	**0 (0%)**	**166 (9.2%)**	**656 (36.4%)**	**823 (45.6%)**	**158 (8.7%)**

Table 5: Comparative incidence of type of bleeding in DUB

Authors	No. of patients	Menorrhagia	Menometrorrhagia	Metrorrhagia	Polymenorrhoea	Polymenorrhagia	Bleeding following amenorrhoea	Prolonged and continuous bleeding	Irregular bleeding	Oligo menorrhoea
Kanakadurgamba K. and Shrinivas Rao K. 1964[6]	150	6 (4%)	-	-	5 (3.3%)	-	24 (16%)	54 (36.0%)	61 (40.6%)	-
Ghosh B.K and Sen Gupta K.P. 1968[15]	50	19 (38%)	11 (22%)	-	-	-	-	3 (6%)	17 (34%)	-
Mehrotra V.G. et al 1972[8]	150	78 (52.3%)	29 (19.4%)	-	11 (7.3%)	28 (18.6%)	-	Post menopausal bleeding 4 (2.6%)		-
Pilli G.S. et al 2002[11]	100	34 (34%)	18 (18%)	23 (23%)	11 (11%)	-	14 (14%)	-	-	-
Wahda Moohamed et al 2010[16]	363	124 (34%)	48 (13.2%)	13 (3.5%)	5 (1.3%)	26 (7%)	-	71 (20%)	Post menopausal bleeding 76 (21%)	
Zeeba S. Jairajpuri et al 2013[13]	462	189 (40.90%)	23 (4.97%)	82 (17.74%)	27 (5.84%)	20 (4.32%)	-	66 (14.28%)	Post menopausal bleeding 13 (2.81%)	42 (9.09%)
Present study	**1803**	**1045 (57.9%)**	**66 (3.6%)**	**31 (1.7%)**	**53 (2.9%)**	**435 (24.1%)**	**152 (8.4%)**	**-**	**-**	**21 (1.2 %)**

Table 6: Type of bleeding pattern in relation to age groups (Comparison between Zeeba S Jairajpuri et al 2013[13] (n=462) and present study (n=1803)

Type of bleeding	< 20 years		21-30 years		31-40 years		41-50 years		>50 years		Total	
	Zeeba S	Present study	Zeeba S	Present study	Zeeba S	Present study	Zeeba S	Present study	Zeeba S	Present study	Zeeba S	Present study
Menorrhagia	-	-	42	**101**	69	**428**	78	**486**	-	**30**	189	**1045**
Metrorrhagia	-	-	20	**23**	28	-	34	**8**	-	-	82	**31**
Menometrorrhagia	-	-	8	**22**	8	**24**	7	**20**	-	-	23	**66**
Polymenorrhoea	-	-	5	-	7	**26**	15	**27**	-	-	27	**53**
Polymenorrhagia	-	-	4	**10**	12	**167**	4	**253**	-	**5**	20	**435**
Continuous bleeding	1	-	41	-	3	-	6	-	-	-	66	-

	6											
Post menopausal bleeding	-	-	-	-	-	-	4	-	9	-	13	-
Bleeding following amenorrhoea	-	-	-	-	-	-	-	**29**	-	**123**	-	**152**
Oligo menorrhoea	-	-	5	**10**	17	**11**	20	-	-	-	42	**21**

Table 7 (A, B, C, D): Incidence of different histological patterns of endometrium in DUB in present study and by various authors

(A)

Author	Proliferative endometrium	Secretory endometrium	Disordered proliferative endometrium	Basal endometrium	Menstrual endometrium	Hormonal induced changes of endometrium	Menstrual with hormonal induced endometrium	Atrophic endometrium	Autolytic endometrium	Secretory with autolytic endometrium	Endometrial hyperplasia	Acute endometritis	Papillary syncytial changes of endometrium	Senile cystic endometrium	Endometrial adenocarcinoma – Well differentiated	**Total**
Present study	621 (34.5%)	410 (22.7%)	271 (15%)	149 (8.3%)	61 (3.4%)	53 (2.9%)	9 (0.5%)	44 (2.4%)	26 (1.4%)	9 (0.5%)	88 (4.9%)	18 (1%)	9 (0.5%)	9 (0.5%)	26 (1.4%)	**1803**

(B)

(C)

Author/Histopathological pattern	**Proliferative**	**Secretory**	**Hyperplasia**	**Endometritis**	**Polyp**	**Exogenous hormone**	**Disordered proliferative**	**Atrophic**	**Carcinoma**	**Irregular shedding**	**Irregular ripening**	**Luteal phase defects**	**Complications of pregnancy**	**Inadequate**	**Total**
Zeeba S Jairajpuri et al 2013[13]	159 (24.92 %)	185 (28.99 %)	37 (5.79 %)	39 (6.11 %)	11 (1.72 %)	11 (1.72 %)	37 (5.7 %)	7 (1.1 %)	3 (0.47 %)	15 (2.35 %)	6 (0.94 %)	12 (1.88 %)	98 (15.36 %)	18 (2.82%)	**638**

Author	**Proliferative phase**	**Secretory phase**	**Irregular shedding**	**Irregular ripening**	**Hyperplastic endometrium**	**Atrophic endometrium**	**Chronic endometritis**	**Total**
Dass A. and Chungh S. 1964[5]	46 (41.5%)	25 (22.5%)	2 (1.8%)	2 (1.8%)	34 (30.6%)	2 (1.8%)	-	111
Joshi S.K. and Deshpande D.H. 1964[20]	147 (54%)		19 (6.9%)	10 (3.6%)	87 (31.7%)	7 (2.4%)	4 (1.4%)	274
Kanakadurga	51	6 (4%)	-	-	93	-	-	150

mba K. and Srinivas Rao K. 1964[6]	(34%)				(61.9%)			
Bhargava H. and Shashi Gupta 1979[21]	47 (47%)	27 (27%)	8 (8%)	-	18 (18%)	-	-	100

(D)

Authors	Normal endometrium	Endometrial hyperplasia	Irregular ripening endometrium	Chronic menstrual endometrium	Irregular shedding	Atrophic endometrium	Total
Sutherland (1949)[4]	547 (63.5%)	265 (30.8%)	26 (3%)	-	13 (1.5%)	10 (1.2%)	861
Kistner (1964)[22]	230 (57.5%)	123 (30.8%)	-	31 (7.8%)	9 (2.2%)	7 (1.7%)	400

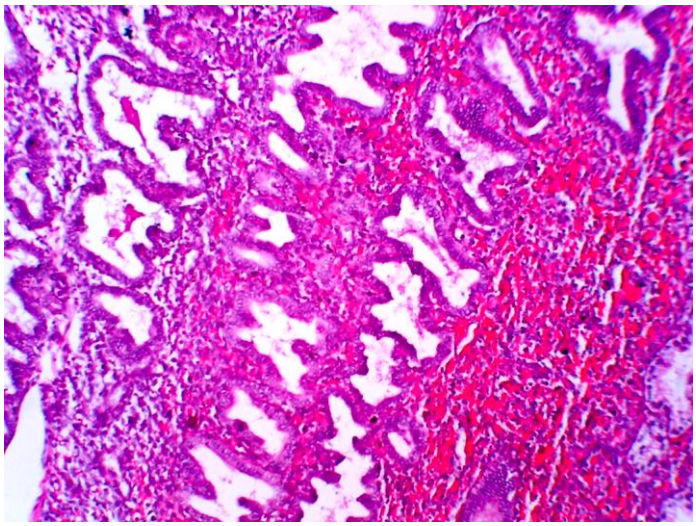

Figure 1: Microphotograph of Secretory endometrium (H&E stain 10x view)

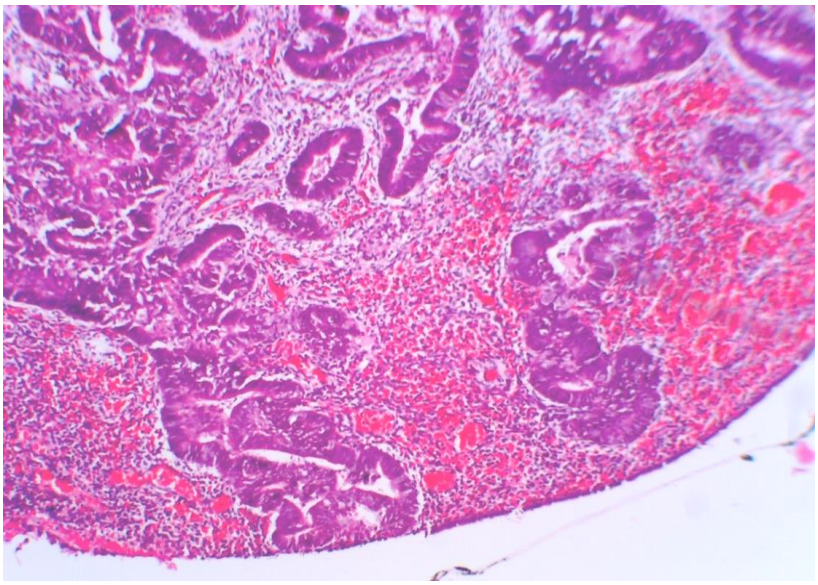

Figure 2: Microphotograph of Proliferative endometrium (H&E stain 10x view)

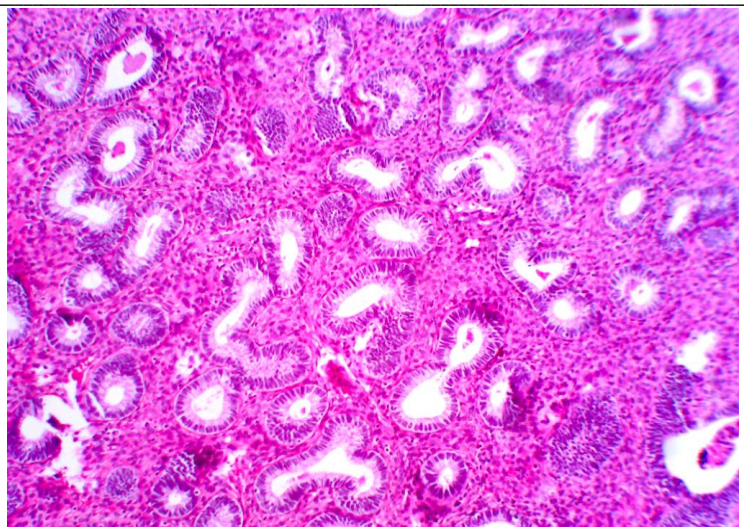

Figure 3: Microphotograph of Simple glandular hyperplasia of endometrium (H&E stain 10x view)

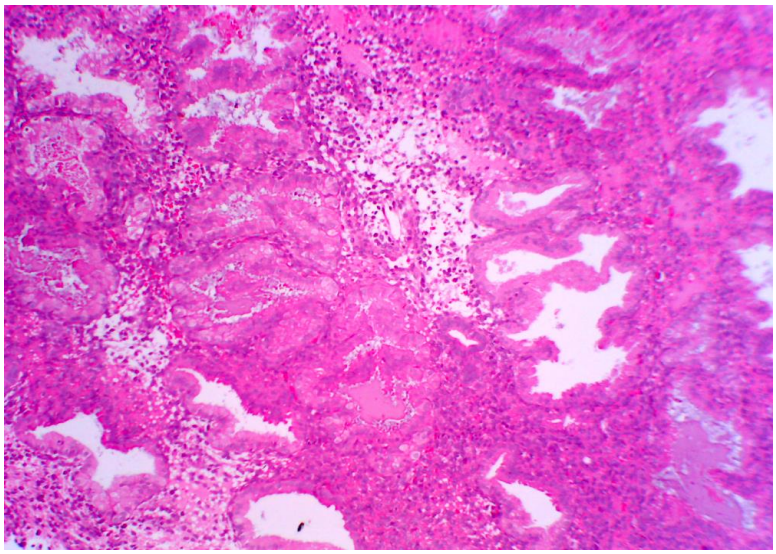

Figure 4: Microphotograph of Complex atypical glandular hyperplasia of endometrium (H&E stain 10x view)

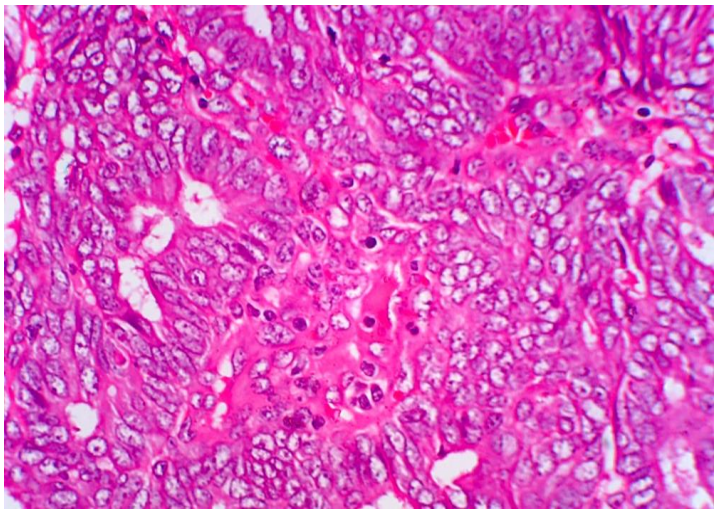

Figure 5: Microphotograph of Endometrial adenocarcinoma (H&E stain 40x view)

Discussion

DUB is one of the most frequently encountered conditions in gynaecology and is the principal diagnosis in at least 10% of all new patients in both hospital and private practice. The true incidence is difficult if not impossible to establish, because of the lack of objective measurements of menstrual blood loss and because most published series have been limited to patients admitted to hospital for diagnostic curettage. DUB can occur at any age, though its etiology and management vary greatly in different age groups. So as an understanding of the effects of age and parity on management and on the risk of missed uterine pathology is important[4].

Most of the old studies (Sutherland 1949[4], Dass A and Chugh S. 1964[5], Kanakdurgamba K. and Srinivas Rao K. 1964[6], Wagh K.V. and Swamy V. 1964[7], Mehrotra V.G. et al 1972[8], Nirmala A.V.K 1991[9], Allahbadia G.1992[10], Pilli G.S. et al 2002[11], Mitra K. and Chowdhary M. K. 2003[12]) recorded a peak age incidence of DUB between 21 to 40 years of age, but recent studies (Zeeba et al 2013[13], Doraiswami et al 2011[14]) recorded a peak age incidence of DUB between 31 to 50 years as seen in our present study. It is comparable with our study (Table 4).

Gosh B.K. and Sengupta K.P. (1968)[15], Mehrotra V.G et al (1972)[8], Pilli G.S et al (2002)[11], Wahda Moohamed et al (2010)[16] and Zeeba S Jairajpuri et al (2013)[13] also found the menorrhagia as being commonest type of bleeding seen in 38%, 52.3%, 34%, 34% and 40.90% patients respectively. Whereas in contrast to this Kanakadurgamba K. and Shrinivas Rao K. (1964)[6] found increased number of patient with irregular bleeding i.e. 61 (40.6%) patients and menorrhagia in only 6 (4.0%) patients (Table 5).

Menorrhagia was the most common type of bleeding during age (41-50 years) according to Zeeba S Jairajpuri et al (2013)[13]. Present study is in accordance with maximum number of patients having menorrhagia and was between 41-50 years. (Table 5,6,7).

Kanakadurgamba K and K. Shrinivas Rao (1964)[6] found 34% biopsies diagnosed as proliferative endometrium. Pilli G.S. et al (2002)[11], Dass A and Chugh S. (1964)[5] and Zeeba S Jairajpuri et al 2013[13] noted 34%, 41% and 24.92% DUB patients as having proliferative endometrium respectively.

Sharadamma M.S. (1995)[17] and Bhattacharji (1964)[18] reported 25.30% and 19.6% proliferative endometrium in their studies respectively. In present study most of the patients were fall in between 31-50 years of age group. This finding is in accordance with Zeeba S Jairajpuri et al 2013[13], who reported 127 (79.87%) patients diagnosed under proliferative phase category belonged to 31-50 years of age. In present study, menorrhagia was one of the most common bleeding pattern seen in patients diagnosed under proliferative phase category patients. Mehrotra V.G. et al (1972)[8] also found higher incidence of menorrhagia in proliferative phase i.e. in 61(65%) patients. Pilli G.S. (2002)[11] et.al also found menorrhagia being commonest bleeding pattern for proliferative phase endometrium, followed by metrorrhagia.

Kanakadurgamba K and Shrinivas Rao K. (1964)[6] found menorrhagia being the commonest type of bleeding in secretory phase but they found lower incidence of secretory endometrium i.e. in 4% only in their study. Pilli G.S. et al (2002)[11] and Zeeba S. Jairajpuri et al 2013[13] noted 13% and 28.99% DUB patients as having secretory endometrium respectively.

Bhattacharji (1964)[18] reported higher number of cases belong to secretory endometrium that is of 43.9% of patients. In present study most of the patients were reported in between 31-50 years of age group. This finding is in accordance with Zeeba S. Jairajpuri et al 2013[13], who reported 139 (75.14%) patients diagnosed under secretory phase category belonged to 31-50 years of age.

In present study, most common bleeding pattern observed was menorrhagia that was observed in patients diagnosed under secretory phase category. Pilli G.S. et al (2002)[11] observed that menorrhagia was the commonest type of bleeding in 61.5% of patients.

Zeeba S Jairajpuri et al 2013[13] reported 37 (5.7%) patients of disordered proliferative endometrium and most common age group was 31-50 years in 26 (70.27%). Our study incidence is higher than above study (Table 5,6,7).

Percentage of patients with endometrial hyperplasia was least with Zeeba S Jairajpuri et al (2013)[13] i.e. 37 (5.79%) which is correlating with the present study and highest with Ghosh B.K and Sengupta K.P. (1968)[15] i.e. 68%. Zeeba S Jairajpuri et al (2013)[13] observed the incidence of hyperplasia increased with age, 25 (67%) patients were over 40 years which is correlating with the present study but correlating with Solapurkar M.L. (1986)[19] study i.e. below 30 years most common. Our study shows two clusters of age groups one is 21-30 years and second is 41-50 years. So it is comparable of both above studies.

Wagh K. and Swamy V[7]. (1964) had reported 1.5% incidence of endometrial carcinoma in their case series study. In the study of Solapurkar M.L[19]. (1986), they have observed 7 (2.45%) patients diagnosed under adenocarcinoma of endometrium category. One patient was reported below 35 years of age (14.28%), 4 patients were observed above 55 years (55%) while 2 cases were reported in between 46-55 years (28.57%).

Silverberg[19] in study of 5000 case of endometrial carcinoma found only 2.4% patients below 40 years of age.

In present study 26 biopsies (1.5%) showing feature of adenocarcinoma of endometrium was encountered. Indicating adenocarcinoma was one of the less common causes for DUB. Out of 26 cases 20 were in > 50 years of age and 6 cases was in 41-50 years of age (Table 5,6,7).

There is increased Incidence of endometrial carcinoma with age.

Conclusion

Study of endometrial microscopy in women with DUB is helpful to distinguish an ovulatory from ovulatory DUB and to diagnose hyperplasia and carcinoma of endometrium. A significant number of endometrial samples on histopathology revealed changes, rendering endometrial curetting and biopsy an important diagnostic procedure in evaluation of DUB. Endometrial causes of DUB are related, therefore it is specially recommended in women of the perimenopausal age presenting with DUB, to rule out premalignancy and malignancy. Accurate reporting of endometrial biopsy sample is the key to effective therapy and optimal outcome. Although atrophic endometrium was the commonest finding in postmenopausal women, post menopausal bleeding should always be taken seriously because it usually reflects an organic pathology. The present study revealed those proliferative and secretory endometriums are the most common endometrial histopathological pattern in endometrial samples obtained for DUB in our region. Accuracy of the endometrial biopsy sample, the convenience of the patients, clinicians and cost containment has been established very firmly in literature. This screening procedure will remain important tool in the diagnosis of DUB. So in view of varied endometrial pattern, from normal to adenocarcinoma and incidental organic lesions found, histological study of endometrium is very important and useful in women of all age groups particularly when conservative management is desired.

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Conflicts of interest

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