Clinico-Pathological Evaluation of Dysfunctional Uterine Bleeding

Ajit Kumar Nayak[1], Kalyani Hazra[2], Manju Kumari Jain[3]

ABSTRACT

Introduction: Dysfunctional uterine bleeding is a form of abnormal uterine bleeding in absence of organic disease of the genital tract. The objective of this study was to find out the clinical and pathological aspect of women in various age group and parity presenting with dysfunctional uterine bleeding

Material and Methods: A prospective study was conducted over a period of one year from November 2015 to November 2016 in the Department of Obstetrics and Gynecology, S.C.B Medical College, Cuttack, Odisha. A complete history, clinical examination, laboratory investigations, pelvic scan, and endometrial biopsy were done to diagnose dysfunctional uterine bleeding.

Results: A total of 160 cases were included. The ages of the patients having dysfunctional uterine bleeding were ranging from 21 -70 years. Dysfunctional uterine bleeding was most common in the age group 41-50 yrs (41.25%) followed by 31-40 yrs (28.75%). Majority were multipara (81.87%).Menorrhagia (51.87%) was the most common presentation. Majority of cases histopathology of endometrium revealed proliferative pattern (41.88%) followed by hyperplastic type (27.5%). 21.88% had secretory endometrium, 2.5% had atrophic endometrium and 1.25% cases had endometrial carcinoma.

Conclusion: Dysfunctional uterine bleeding was the most common in the perimenopausal age group and majority had proliferative and hyperplastic type of endometrium in our study. Histopathological evaluation of endometrium which remains the gold standard helps to exclude the local causes and establishes the diagnosis of dysfunctional uterine bleeding, its types, and clinical correlation to histopathological findings and finally helps to determine the mode of management

Keywords: DUB, Endometrium, Histopathology, Pattern.

INTRODUCTION

Abnormal uterine bleeding (AUB) is one of the most common Gynecologic presentations which prompt a patient to consult the Gynecological.[1] AUB is categorized into two broad groups. First is due to organic causes, having some pathology like fibroid, polyp etc and the second is the so called Dysfunctional uterine bleeding (DUB) when there is absence of organic disease of the genital tract or in other words 'abnormal bleeding from the uterus unassociated with tumor, inflammation or pregnancy' The bleeding is unpredictable in many ways. It may be excessively heavy or light and may be prolonged, frequent, or random. DUB can occur during lifespan of a woman at any time from menarche, occasionally even after the menopause in ovulatory and anovulatory cycles. This condition has enormous consequences with regard to social life, morbidity, and clinical load. DUB can be classified into primary, secondary and iatrogenic groups. Primary DUB is due to dysfunction arising in the hypothalamo-pitutary-ovarian axis or dysfunction in the endometrium itself. Secondary DUB is due to endocrinopathies, hematological, vascular disease, liver disorders. Iatrogenic DUB is caused by drugs, exogenous hormone administration, and intrauterine contraceptive devices. So DUB is a diagnosis of exclusion; and one should proceed through logical stepwise evaluation to rule out all other causes of abnormal uterine bleeding. Management of DUB is not complete without tissue diagnosis especially in perimenopause and postmenopause.[2] It has been known to be associated with almost any type of endometrium, even apparently normal endometrium like proliferative and secretory type. Some other histology of endometrium in DUB are irregular ripening, irregular shedding, atrophy, hyperplasia and carcinoma. Many a times the clinical and intra operative diagnosis does not correlate with histopathological diagnosis. The present study aims to evaluate various pathological features in endometrial curettage of patients complaining of dysfunctional uterine bleeding and correlating them with clinical presentation.

MATERIAL AND METHODS

A prospective study name "Clinico-Pathological Evaluation of Dysfunctional Uterine Bleeding" was conducted over a period of one year from November 2015 to November 2016 in the Department of Obstetrics and Gynecology, S.C.B Medical College, Cuttack, an urban tertiary care hospital in Odisha. Among the patients attending the Gynecological outpatient department with abnormal uterine bleeding complete history was taken with regard to age, parity, socioeconomic status, history of bleeding from other sites, pattern of menstrual irregularity i.e. age at menarche, type, duration, amount of blood loss and associated pain, any other gynecological co-morbidity, previous hormone treatment if any and any previous endocrine problem. Medical illness and pelvic pathology were ruled out clinically. Pap smear was done. After admission laboratory investigations were obtained which includes hemoglobin estimation, platelet count, bleeding time, clotting time, blood grouping and Rh typing, comment on peripheral smear, fasting blood glucose, urine analysis and thyroid function test. Pelvic scan was done. Patients having any detectable organic pathology like tumor, pregnancy, inflammation, medical disorders like blood dyscrasias, thyroid abnormalities were excluded in the study. Adolescent age groups were also in the exclusion criteria as endometrial sampling is not the primary diagnostic tool for them. Our study group consisted of 160 cases having Dysfunctional

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Menstrual pattern	21-30 yrs	31-40 yrs	41-50 yrs	51-60 yrs	61-70 yrs	Total (%)
Menorrhagia	21	30	29	3	0	83 (51.87%)
Metrorrhagia	0	6	13	7	2	28 (17.5%)
Menometrorrhagia	3	0	9	0	0	12 (7.5%)
Polymenorrhoea	1	2	5	5	0	13 (8.13%)
Polymenorrhagia	2	4	3	0	0	9 (5.62%)
Metropathia-hemorrhagica	0	2	7	1	0	10 (6.25%)
Oligomenorrhoea	3	2	0	0	0	5 (3.13%)
Total	30	46	66	16	2	160

Table-1: Correlation of various menstrual irregularities in DUB with different age group

Endometrial status	No. of cases	%
Proliferative	67	41.88%
Secretory	35	21.88%
Atrophic	4	2.5%
Hyperplastic	44	27.5%
Simple	24	15%
Complex	12	7.5%
Without atypia	5	3.13%
With atypia	3	1.87%
Irregular shedding	5	3.13%
Products of conception	1	0.62%
Arias Stella reaction	1	0.62%
Endometrial polyp	1	0.62%
Endometrial carcinoma	2	1.25%
Total	160	100%

Table-2: Histopathological finding (n=160)

Uterine bleeding of different age group, parity, socioeconomic status and having various menstrual irregularities. Endometrial tissue obtained by Dilatation and Curettage was immediately kept in 10% formalin and subjected to histopathological study in the Department of Pathology S.C.B. Medical College, Cuttack. Time of endometrial biopsy was taken after 15 days from the last menstrual period (preferably Day 21-22) so that hormonal status could be determined in addition to pathology. Women who were bleeding were put on non-hormonal methods of treatment till the procedure was awaited. The detailed clinical presentations, histopathological study reports and correlation with other parameters like age parity and socioeconomic status have been reviewed and critically analyzed.

STATISTICAL ANALYSIS

Statistical analysis of data of one year was done using MS excel and SPSS 15 (Statistical Package of Social Sciences) application.

RESULTS

The age of the patients suffering from DUB were ranging from 21 to 63 years. Highest no of cases i.e. 66 out of 160 (41.25%) were in the age group 41 to 50 years, 46 cases (28.75%) presented in the age group of 31-40 years, 30 cases i.e. 18.75% in the age group of 21-30 years, 16 cases i.e. 10% were between 51-60 years and lowest being in the 61 -70 years of age group i.e. 2 cases (1.25%).

It was more common in parous than in nulliparous women. 131 no of cases out of 160 i.e. (81.87%) presenting with DUB were multipara, 24 cases (15%) were primipara and only 5 no of cases (3.13%) were nullipara.

83(51.87%) cases of DUB belonged to middle socioeconomic status, 61(38.13%) cases from low and 16 (10%) cases from higher socioeconomic status.

Most common menstrual disorder in women presenting with DUB was menorrhagia in 83 cases (51.87%) followed by metrorrhagia in 28 cases (17.5%), polymenorrhoea in 13 cases (8.13%), meno-metrorrhagia in 12 cases (7.5%), metropathia haemorragica in 10 cases (6.25%), polymenorrhagia in 9 cases (5.62%) and oligomenorrhoea in 5cases (3.13%).

Menorrhagia was prevalent almost in all age group. Metrorrhagia, meno-metrorrhagia, metropathia haemorrhagica and polymenorrhoea types of abnormal bleeding were mostly seen in the age group of 41-50 years. However, in the age group of 51-60 and 61 to 70 metrorrhagia type of bleeding was more common. (Table 1)

In the present study out of 131 multiparous women 74 had menorrhagia, 24 had metrorrhagia, 10 had meno-metrorrhagia, 9 had polymenorrhoea, 6 had polymenorrhagia, 7 had metropathia haemorrhagica and 1 woman had oligomenorrhoea. Out of 24 primipara 7 had menorrhagia, 4 had metrorrhagia, 2 had meno-metrorrhagia, 3 had polymenorrhoea, 3 had polymenorrhagia, 3 had metropathia haemorrhagica and 2 women had oligomenorrhoea. Out of 5 nullipara 2 had menorrhagia, 1 had polymenorrhoea and 2 complaint of oligomenorrhoea. Though various types of menstrual irregularities were documented in multipara and primipara both menrorrhagia and metrorrhagia contributes to 74.8% (98 out of 131) and 45.83% (11 out of 24) respectively whereas in nullipara, menrorrhagia and oligomenorrhoea were common.

The most common histopathological finding of endometrium was proliferative type (41.88%). Hyperplastic endometrium (27.5%) accounted for the next commoner group. In this group simple hyperplasia accounted for the maximum number. Secretory pattern was seen in 21.88% of cases. One case had a pregnancy related complication. Malignancy was detected in 2(1.25%) cases (Table 2)

Proliferative endometrium is the predominantly common finding in all age group. Hyperplastic endometrium was equal common in 41-50 years age group and was also a significant finding in the 51-60 years age group. The endometrial carcinomas were found in 1.25% of cases in later age groups of 51-60 years. (Table 3)

In this study proliferative endometrium was found in patients commonly presenting with menorrhagia and metrorrhagia. Whereas hyperplastic endometrium was commonly found in patients presenting with menorrhagia. Our two cases of endometrial carcinoma presented with menorrhagia and meno-metrorrhagia (Table 4)

Out of 131 multiparous women 56 had proliferative endometrium, 27 had secretory endometrium, 4 had atrophic type, 40 had endometrial hyperplasia and 2 had irregular shedding. Whereas

Endometrial histology	21-30	31-40	41-50	51-60	61-70	Total
Proliferative	16	21	26	4	0	67
Secretory	9	16	8	2	0	35
Atrophic	0	0	0	2	2	4
Hyperplastic type	4	5	29	6	0	44
Irregular shedding	0	3	2	0	0	5
Arias Stella reaction	0	1	0	0	0	1
Endometrial polyp	0	0	1	0	0	1
Product of conception Endometrial	1	0	0	0	0	1
carcinoma	0	0	0	2	0	2
Total	30	46	66	16	2	160

Table-3: Correlation of Histological diagnosis with different age group in years

Endometrial histology	Menorr hagia	Metrorr hagia	Meno-metrorrhagia	Polymen orrhoea	Polymenorr hagia	Metropathia hemorrhagica	Oligomen orrhoea	Total cases
Proliferative	31	17	2	5	2	8	2	67
Secretory	16	6	4	3	3	0	3	35
Atrophic	0	0	0	4	0	0	0	4
Hyperplastic	31	3	5	0	3	2	0	44
Irregular shedding	3	0	0	1	1	0	0	5
Arias Stella Reaction	1	0	0	0	0	0	0	1
Endometrial polyp	0	1	0	0	0	0	0	1
Product of conception	0	1	0	0	0	0	0	1
Endometrial carcinoma	1		1	0	0	0		2
Total	83	28	12	13	9	10	5	160

Table-4: Histopathological finding in relation to bleeding pattern

endometrial carcinoma was detected among 2 multipara. Out of 24 primipara 10 had proliferative endometrium, 6 had secretory type, 3 had endometrial hyperplasia, 3 had irregular shedding, 1 had endometrial polyp and 1 case detected to have product of conception. Among 5 nulliparous women 1 had proliferative endometrium, 2 had secretory type and 1 had endometrial hyperplasia. Whereas Arias Stella reaction was detected in 1 nulliparous woman. So in the present study proliferative, hyperplastic and secretory endometrium were more common in multipara than in primipara and nullipara.

DISCUSSION

Dysfunctional uterine bleeding is one of the significant problems seen among patients attending gynecological outpatient department. In the present study maximum number of DUB cases i.e. 41.25% were in the age group of 41 - 50 years. Present study findings were comparable to studies done by Thanyapa W et al.[3] Saraswati D et al, Ghosh et al and Davey et al reported the maximum incidence of 33.5%, 46% and 39% respectively in the 5th decade of life.[4-6] Nirmala AVK reported highest incidence i.e. 37.46% in the age group of 21-30 years.[7] Whereas Gautam A et al found the incidence to be highest in 15-20 years.[8] In our study the higher incidence in the perimenopausal age group is due to the ignorance, illiteracy, and poor socio-economic status of the women as a result of which they neglected the symptoms during their reproductive age. Because of the increase in severity of symptoms and increasing disability due to increasing age they attended hospital at this age.

Israel et al also reported that DUB is a disease of multipara.[9] Hamblen observed parity doubtlessly enhances the incidence of irregular bleeding.[10] Joshi et al and Rosario et al reported 61.6% and 97% of DUB cases were multiparous respectively.[11,12] We found 81.87% of DUB cases were multiparous. Authors have suggested that higher incidence in multipara can be explained on the basis of general clinical population which shows higher incidence of multipara.

In our study, the commonest presentation was menorrhagia (51.87%) which is similar to reporting done by Muzaffar et al (51.9%).[13] Mehrotra VG et al and Nair RK et al reported, 50% and 64%of DUB cases presented with menorrhagia respectively.[14,15] Jaideep M et al (38.67%), Rashmi V (40%) and Pilli GS et al (46%) observed menorrhagia as the commonest mode of presentation.[16-18] But Jeffcoate observed menorrhagia only in 10% of cases.[19] Polymenorrhagia was present in 8.13% of cases. We observed 6.25% had metropathic type of bleeding which is similar to reporting done by Sharada et al (8%).[20] Whereas Kanakadurgamba et al reported 24% of DUB cases presented with metropathic type of bleeding.[21]

In DUB any type of endometrium may be found, even normal endometrium i.e. endometrium consistent with the day of menstrual cycle., Hoon CN et al reported proliferative endometrium in 50.85% of women having DUB.[22] Whereas lower incidence of proliferative endometrium was observed by Sanaullah et al (31%).[23] Higher incidence of proliferative phase of endometrium was reported by Somboonporn W et al (75%).[24] In the present study 41.88% of cases proliferative pattern was detected which is similar to study result by Das A et al (41.5%).[25] Various authors including us observed proliferative endometrium clearly out numbering the other types suggesting that anovulation is the main cause of DUB. Narula RK et al reported between the age group of 21 - 30 years, 50% had proliferative endometrium.[26] In the present study out of 30 cases in the age group of 21 - 30 years, 16 cases (53.33%) had proliferative endometrium. In this type of endometrium menorrhagia was most commonly associated bleeding pattern.

Narula RK et al found a higher incidence of secretory

endometrium i.e. 35.92%, whereas lower incidence of 5.97% was reported by Bolde SA et al.[26,27] Our incidence is 21.88% which nearly correlates with the finding of Purandare and Jhallam (20.68%).[28] In our study maximum no of cases having secretory endometrium was found in the age group of 31 to 40 years.

Though Purandare and Jhallam reported low incidence of 7% of hyperplastic endometrium.[28] Several studies have reported that endometrial hyperplasia is more common observation, Devi et al (33.3%), Kistner et al (30.8%), Mitra et al (34.6%).[29-31] We found endometrial hyperplasia in 21.88% of cases which is similar to reporting done by Khan R et al (20.5%).[32] So according to different author the incidence of endometrial hyperplasia ranged from 7% to 34.6%. The variation could be attributed to socioeconomic status and occurrence of risk factors like obesity, diabetes, sedentary life style and early diagnosis. Among the hyperplastic type maximum i.e. 65.9% were simple hyperplasia without atypia which is comparable to reporting done by Vakiani et al (71%) and majority were in the age group of 41-50 years.[33] Identification of endometrial hyperplasia is important as it is thought to be a precursor of endometrial carcinoma.

In our study the incidence of atrophic endometrium was 2.5% whereas Katuwal N et al found 6.8% of cases had atrophic endometrium.[34] All of our cases having atrophic endometrium were more than 50 years of age, whereas Katuwal N et al observed 44.4% of the patients having atrophic endometrium were postmenopausal.[34] Higher incidence of atrophic endometrium of 34.5% reported by Dangal G due to inclusion of perimenopausal and postmenopausal DUB excluding reproductive age group.[35]

We reported irregular shedding of endometrium due to corpus luteal persistence in 3.13% of cases whereas Ha Bs et al found irregular shedding in 1.2%.[36] Whereas Chary et al reported 6% cases had irregular shedding.[37] Incidence of endometrial carcinoma in our study is 1.25% whereas Wagh and Swamy reported 1.5%.[38]

The proliferative endometrium in more than 40 years of age group was found to be 31% in this study. Sutherland et al reported 44.3% incidence of endometrial hyperplasia in patients more than 40 years which is comparable to our study (41.66%).[39] In our study, proliferative endometrium was detected in 36.14% cases, secretory endometrium in 19.28% cases and hyperplastic endometrium in 37.35% cases with menorrhagic cycle. We found meno-metrorrhagia in 11.36%, menorrhagia in70.45%, polymenorrhagia and other types of abnormal bleeding in 18.19% of our 44 cases of hyperplastic endometrium. Novak et al found metropathia type of bleeding in 9%, menorrhagia in 51.5%, polymenorrhoea and irregular bleeding in 45% of their 66 cases of hyperplastic endometrium.[40] According to Takreem et al most frequent clinical diagnosis of endometrial hyperplasia was menorrhagia. (53.3%).[41] Bhattacherjee observed irregular bleeding in 56.2%, menorrhagia in 31.2% and metropathia type of bleeding in 12.5% of cases in his series of 32 cases having proliferative endometrium.[42] The observation of different authors including our observation revealed that there was no definite relationship between the type of bleeding pattern and endometrial histology.

CONCLUSION

DUB is a common gynecological condition. Diagnosis of DUB is achieved with the combination of the following: history, physical examination, laboratory evaluation, USG and confirmed by endometrial sampling. Dysfunctional uterine bleeding (DUB) is defined as excessively heavy, prolonged, or frequent bleeding of uterine origin that is not due to pregnancy or any recognizable pelvic or systemic cause. Apart from complete history, thorough clinical examination detailed investigations including bleeding time, clotting time, platelet count, prothrombin time, comment on peripheral smear, TSH, FT3 and FT4 to be done to diagnose any medical illness, ultrasonography of pelvis is an added beneficial tool to exclude organic pathology. DUB was most common in perimenopausal age group (41-50 years), majority of them were multipara and most of the cases belonged to middle class family. Though menorrhagia was the most common bleeding pattern almost in all the age group, metrorrhagia, polymenorrhoea and metropahia haemorragica are also not uncommon. In reviewing the histopathologcal study of endometrium, proliferative endometrium is found to be the commonest endometrium pattern (41.88%) followed by hyperplasia (27.5%), secretory (21.88%) etc. Simple hyperplasia was more common than complex and atypical hyperplasia. Proliferative endometrium is the predominantly common in all age groups whereas hyperplastic endometrium mostly seen in the age group of 41-50 years. The proliferative endometrium was found in patients presenting with menorrhagia, metrorrhagia and haemorragia metropathica. Whereas hyperplastic endometrium was commonly found in patients presenting with menorrhagia.The proliferative, secretory, hyperplastic endometrium was more common in multipara than in primipara and nullipara. Atrophic endometrium was present in the age group of 51-70 years and all of them had poymenorrhoea.The endometrial carcinomas were found in 1.25% of cases in 51-60 years age group. One case of endometrial carcinoma presented with menorrhagia and other one with meno-metrorrhagia. Histopathological evaluation of endometrium helps exclude the local causes and establishes the diagnosis of DUB, its types, clinical correlation to histopathological findings and finally helps to determine the mode of management.

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