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Research Article

Clinicopathological Spectrum of Endometrial Changes in abnormal Uterine Bleeding

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Abstract: Abnormal uterine bleeding (AUB) is a very common gynecological condition that affects all age groups. One third of patients attending gynecology OPD present with complaints of abnormal uterine bleeding. The importance of endometrial biopsy or curettage done to obtain material for histopathological evaluation, to aid in diagnosis and further management, cannot be overemphasized especially in perimenopausal females who are at a risk of developing malignancy. This study was conducted to determine the clinico-histopathological pattern of the abnormal uterine bleeding. This was a retrospective study conducted at a tertiary care hospital in South India in April 2014. The data was obtained from the medical records department from May 2012 to November 2013. A total of 324 endometrial biopsies patients with abnormal uterine bleeding were analyzed. The cause of AUB could be determined in 285 patients and the remaining 39 biopsy specimens were inadequate for evaluation. Among 285 cases, 232 (81.4%) were due to functional causes as no organic pathology was found, while the remaining 53 cases (18.5%) showed definite endometrial pathology. Peri-menopausal (40-50 years) was the most common age group and most of the cases were para <2. Most common menstrual disorder was menorrhagia followed by menometrorrhagia. Most common etiological factor for abnormal uterine bleeding was dysfunctional uterine bleeding followed by Fibromyoma and Adenomyosis. Most common endometrial pattern in peri menopausal age group was proliferative followed by secretory and in post menopausal women, atrophic endometrium followed by proliferative and endometrial carcinoma. The histopathological study of endometrium in abnormal uterine bleeding above the age of 40years plays an important role in diagnosing various etiopathological factors and helps in determining the mode of management.
Keywords: Abnormal uterine bleeding, Peri-menopausal, Post-menopausal, Hyperplasia

INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause [1]. Abnormal uterine bleeding is a very common gynecological condition that affects all age groups. One third of patients attending gynecology OPD present with complaints of abnormal uterine bleeding [2]. Under the category of AUB, further definitions may be subdivided based on volume of menstruation, regularity, frequency, duration, chronicity, and timing related to reproductive status [3].

The abnormal bleeding can be caused by a wide variety of disorders and may be the common presenting complaint in patients with malignant or pre-malignant endometrial lesion [4, 5]. Endometrial biopsy provides a tissue diagnosis for a variety of morphologic patterns resulting from conditions such as hyperplasia, carcinoma, infections, hormonal effects and also helps in management [6, 7]. The importance of endometrial biopsy or curettage done to obtain material for histopathological evaluation, to aid in diagnosis and further management, cannot be overemphasized especially in perimenopausal females who are at a risk of developing malignancy [8].

An important step in successful clinical management is to recognize or identify the causative factors responsible. When no systemic and pelvic cause is evident to clinician, histopathological examination remains the only alternative to reach the diagnosis, after ruling out the organic causes. This study was conducted to determine the clinico-histopathological pattern of the abnormal uterine bleeding.

MATERIAL AND METHODS

This was a retrospective study conducted at a tertiary care hospital in South India in April 2014. The

data was obtained from the medical records department from May 2012 to November 2013. Patients with a gestational cause, hemostatic disorders, isolated cervical or vaginal pathology, and leiomyoma were excluded. Relevant clinical data regarding age, pattern and duration of abnormal bleeding, menstrual history, and obstetric history, use of exogenous hormones, physical and gynecological examination findings, lab investigation results, and sonological and hysteroscopic findings were obtained from case records from Medical Records Department. All the specimens were fixed in 10% formalin, processed and embedded in paraffin, and 3-4 µthick sections were made. Sections were stained with hematoxylin and eosin stain. The data was recorded and analyzed using Microsoft Excel (2007 version). The results are explained in frequency and percentage.

RESULTS

A total of 324 endometrial biopsies patients with abnormal uterine bleeding (AUB) were analyzed. The cause of AUB could be determined in 285 patients and the remaining 39 biopsy specimens were inadequate for evaluation. Among 285 cases, 232 (81.4%) were due to functional causes as no organic pathology was found, while the remaining 53 cases (18.5%) showed definite endometrial pathology. The distribution of the cases according to age and parity is shown in table 1.

Table 1: Distribution of the cases according to age and parity

Parameter	Number	Percentage
Age		
18-40 years	95	33.3
40-50 years	162	56.8
>50 years	28	9.8
Parity		
Nulliparous	12	4.2
Parity <2	187	65.6
Parity >2	86	30.1

Peri-menopausal (40-50 years) was the most common age group and most of the cases were para <2.

The presenting menstrual disorders of the cases are shown in table 2.

Table 2: Menstrual disorders among the cases

Menstrual disorders	Number	Percentage
Menorrhagia	132	46.3
Menometrorrhagia	93	32.6
Metrorrhagia	22	7.7
Polymenorrhoea	12	4.2
Polymenorrhagia	6	2.1
Postmenopausal bleeding	9	3.1
Postcoital bleeding / premenstrual spotting	11	3.8

Most common menstrual disorder was menorrhagia followed by menometrorrhagia.

The various etiological factors causing abnormal uterine bleeding is shown in table 3.

Table 3: Etiological factors causing abnormal uterine bleeding

Etiology	Number	Percentage
DUB	136	47.7
Fibromyoma	46	16.1
Adenomyosis	23	8
Fibromyoma+adenomyosis	22	7.7
Ovarian tumors	6	2.1
Endometrial polyp	11	3.8
Endometriosis	4	1.4
PID	6	2.1
Cervical cancer	11	3.8
Endometrial carcinoma	10	3.5
Endometrial hyperplasias	7	2.4
IUCD	3	1

DUB: DUB: Dysfunctional uterine bleeding, PID: Pelvic inflammatory disease, IUCD: Intrauterine copper device. Most common etiological factor for abnormal uterine bleeding was DUB followed by Fibromyoma and Adenomyosis. The endometrial pattern in peri-menopausal and postmenopausal bleeding is shown in table 4.

Table 4: Endometrial pattern in peri-menopausal and postmenopausal bleeding

Endometrial change	Peri-menopausal (162) N (%)	Postmenopausal (28) N (%)
Proliferative endometrium	55 (33.9)	7 (25)
Secretory endometrium	36 (22.2)	2 (7.1)
Disordered proliferative	22 (13.5)	2 (7.1)
Atrophic endometrium	3 (1.8)	9 (32.1)
Decidual reaction	9 (5.5)	-
Irregular shedding	4 (2.4)	1 (3.5)
Simple hyperplasia without atypia	11 (6.7)	-
Complex hyperplasia with atypia	8 (4.9)	-
Endometrial Carcinoma	2 (1.2)	6 (21.4)
Endometrial polyp	3 (1.8)	1 (3.4)
Pregnancy related	9 (5.5)	-

Most common endometrial pattern in peri menopausal age group was proliferative followed by secretory and in post menopausal women, atrophic endometrium followed by proliferative and endometrial carcinoma.

DISCUSSION

AUB is a common condition accounting for 25% of gynecological operations and 20% of outpatient visits [9]. The diagnosis is different among various age groups and histopathological examination helps in diagnosis. Previously, the cause of abnormal uterine bleeding was thought to be chronic inflammation. Now, it has been clear that abnormal uterine bleeding is due to various causes ranging from functional to malignancy [10]. Abnormal uterine bleeding occurring as heavy, prolonged or acyclic flow at menopausal transition or as spotting or minimal bleeding at post-menopausal period may be alarming and needs thorough evaluation, since this may be the only clinical manifestation pointing towards endometrial cancer [11]

Peri-menopausal (40-50 years) was the most common age group and most of the cases were para <2. Similar observations were found in other studies [12-14]. A recent study reported higher incidence of AUB with increasing parity [15] and the incidence of AUB among peri menopausal women ranged from 60% to 90%. These variations may be due to different demographic characteristics. In the present study, out of 324 cases tissue insufficient for diagnosis was found in 39 cases. This observation is due to inadequate sampling and after menopause the endometrium becomes atrophic due to lack of estrogen stimulation which may yield inadequate sample during endometrial biopsy [16].

Most common menstrual disorder was menorrhagia followed by menometrorrhagia. This finding is similar to other studies [12-14]. But a study conductedby Dangal G [4] where peri and postmenopausal women were included, there were higher percentage (53.5%) cases of postmenopausal bleeding.

DUB was the most common cause of AUB, followed by fibromyoma and adenomyosis (table 3). This finding is similar ot other stduies [14-16]. DUB was common in 4th and 5th decade, the reason for increased incidence of abnormal 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 their increased resistance to gonadotrophic stimulation causes decline in estradiol level, which cannot keep the normal endometrium growing [17].

Most common endometrial pattern in peri menopausal age group was proliferative followed by secretory. Other studies have reported incidence of proliferative ranging from 21 to 39% [4, 14, 18, 19]. This ovulatory bleeding is explained by the inability of the corpus luteum to synthesize adequate amount of progesterone, although it remains active throughout the entire period of 12-14 days. The exact etiology of ovulatory bleeding can be further clarified by daily serum progesterone assay [14]. Simple hyperplasia and

complex hyperplasia was found in 6.7% and 4.9% of the cases respectively (table 4).

Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. Two cases of endometrial carcinoma were found in peri menopausal age group. The risk of development of endometrial cancer is 29% in patients with complex atypical hyperplasia and 2% in patients with hyperplasia but without atypia [21]. This is to emphasize the fact that all patients with endometrial hyperplasia diagnosed on ultrasound must have a thorough endometrial evaluation by Dilatation and Curettage.

In post menopausal women, atrophic endometrium was most common pattern followed by proliferative and endometrial carcinoma. Atrophic endometrium was seen predominantly in post-menopausal age group due to absence of estrogenic stimulation leading to thin atrophic endometrium susceptible to minor injury [20]. These findings are similar to other studies [14, 16, 19]. Interestingly no cases of hyperplasia were seen in post menopausal women, although the incidence of endometrial carcinoma was higher than peri menopausal women.

Limitations of the study

The data was collected from only two years and the findings of the study cannot be generalized.

CONCLUSION

The histopathological study of endometrium in abnormal uterine bleeding above the age of 40years plays an important role in diagnosing various etiopathological factors and helps in determining the mode of management. Most common endometrial pattern in peri menopausal age group was proliferative followed by secretory and in post menopausal women, atrophic endometrium followed by proliferative and endometrial carcinoma. There was an age specific association of AUB with increase incidence in perimenopausal age group. DUB was the most common cause of AUB and which is also mostly of anovulatory type.

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