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Role of Diagnostic D&C and Histopathology of Endometrium in Perimenopausal Abnormal Uterine Bleeding

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Abstract:

Background: *Abnormal uterine bleeding is common and important problem in perimenopausal women which has diverse etiology. Among different diagnostic procedures, Dilatation and Curettage (D&C) with histopathology of endometrium has an important role in the detection of underlying cause in perspective of its availability, low cost, and high diagnostic yield. The objective of diagnostic curettage in perimenopausal women with abnormal uterine bleeding is to detect endometrial abnormality.*

Methods: *It was a hospital based cross-sectional study among fifty patients of 45 to 60 years old with history of perimenopausal bleeding, attending the inpatient and outpatient department of Sir Salimullah Medical College and Mitford Hospital, Dhaka. The cases were selected according to inclusion and exclusion criteria. Routine investigations and pelvic ultrasonograpy were done. Endometrial biopsy were taken by Diagnostic D & C. Chi-square test was used as test of statistical significance. Statistical Package of Social Science Software (SPSS, version 16.0) was used for statistical analysis of data.*

Results: *Common histopathological pattern identified were endometrial hyperplasia (32%), and polyp (24%). Proliferative endometrium was found in 16% cases, secretory endometrium in 12%, endometrial carcinoma in 6%, endometritis in 4 % and atrophic endometrium in 6% patients.*

Conclusion: *Endometrial biopsy is an essential step for all cases of perimenopausal and postmenopausal abnormal uterine bleeding to rule out malignancy.*

Key words: *Perimenopause, Perimenopausal Abnormal Uterine Bleeding, Dilatation and Curettage (D&C)*

Introduction:

Perimenopause means “around menopause”. It is the time period prior to the natural cessation of menstruation. This period usually starts in women in their mid to late forties and may last between one to seven years[1, 2]. An arbitrary time limit of one year’s amenorrhoea is generally set in defining postmenopausal bleeding[3].

Among different perimenopausal problems, abnormal uterine bleeding is an important one. For a period varying from months to years before menopause, the individual patient may experience abnormal, irregular patterns of bleeding[4]. The abnormal bleeding can be caused by a wide variety of disorders. It may represent a normal physiological state due to age related hormonal imbalance and observation alone is enough. Alternatively, the bleeding can be a sign of serious underlying condition, necessitating aggressive diagnostic procedure and treatment[5]. Even without amenorrhoea or irregularity, menstruation continuing after 55 years should be investigated[3].

Abnormal and excessive endometrial bleeding without structural pathology occurs in reproductive women of all ages, but is more common in adolescent and perimenopausal women[6]. In the perimenopausal

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years, menstrual cycles often become irregular due to the decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, resulting in a low level of estrogen, which cannot maintain the normal endometrial growing[7]. Postmenopausally, Dysfunctional Uterine Bleeding (DUB) is frequently associated with an atrophic endometrium, where an unprepared (atrophic) endometrium results from an inadequate secretion of estrogens[7].

The causes of bleeding among elderly women are hormonal, bleeding diathesis and more importantly, local pathology including malignancy, benign tumours and infections. While dysfunctional uterine bleeding is responsible for most cases of abnormal uterine bleeding in the adolescent and at less than 40 age group, the incidence of structural pathology increases in perimenopausal age group [6].

The rationale of diagnostic curettage in perimenopausal women with abnormal uterine bleeding is to detect endometrial abnormality, especially endometrial carcinoma. Early detection of endometrial carcinoma has prognostic value. Procedures like hysteroscopy and transvaginal sonography are not available widely in our country. On the other hand, facilities of endometrial curettage and histopathology are available up to district hospitals. The procedure has minimal complications in expert hand and have high diagnostic yields[7]. Dilatation and Curettage is mainstay of endometrial sampling for decades[8]. This procedure may lead to early diagnosis and management of vast majority of women with abnormal perimenopausal bleeding. This study was designed to determine the histopathological pattern of endometrium obtained by endometrial curettage in perimenopausal women.

Materials and method:

This was a hospital based cross-sectional study. Total fifty patients between 45 to 60 years of age with history of perimenopausal abnormal uterine bleeding attending the inpatient and outpatient department of Sir Salimullah Medical College and Mitford Hospital, Dhaka were selected consecutively following some exclusion criteria like diagnosed cases of ovarian cancer, cervical cancer, PID and history of taking hormone replacement therapy. The study period was July 2011 to December 2011.

Data was collected by direct interview using a semi-structured questionnaire. A detailed history with special consideration of previous and current menstrual history, obstetric and contraception history, medical / surgical history was followed by general physical, systemic, and gynaecological examination. On gynaecological examination, cervix (position and condition of cervix, presence of ectropion / polyp, mobility), uterus (size, position, consistency, and mobility), and adnexal masses if any were assessed. Baseline investigations like complete blood count, blood sugar 2 hrs after 75 gm of glucose and urine routine and microscopic examination, chest X-ray P/A view were performed. A transvaginal ultrasound with special attention to uterine size, endometrial thickness, presence of endometrial polyp, any endometrial growth, fibroids, and adnexa (presence of ovarian cyst / mass, and its characteristics) was done. Diagnostic D&C and examination under anesthesia were performed. Endocervical and endometrial biopsy was collected in separate container and sent for histopathological examinations in Pathology Department of SSMC and Mitford Hospital.

The study was approved by the institutional ethical review committee of SSMC and Mitford Hospital. Participants were thoroughly briefed about the study objectives, outcome and complications of the intervention. They had the right to withdraw themselves at any stage of the study. Procedure was done with maintaining standard aseptic precautions after taking informed written consent. Chi-square test was used as test of statistical significance. Statistical package of social sciences (SPSS) version 16.0 was used for statistical analysis of data.

Result:

A total 50 patients were included in this study, their mean age was 49.58±4.81 years, ranged 45 to 60 years. Thirty eight patients were married and husband alive, 12 were widow. Most (48%) had parity of 3 to 4 (Table-I). More than half 26 (52%) of the patients had abnormal uterine bleeding for 6 months to 1 year. Scanty amount of bleeding was found in 1 (2%), average 36 (72%) and excessive bleeding 13 (26%) of the study population. Fifty percent of the study subjects had more than two episodes of bleeding per month. Thirty six (72%) patients were regularly menstruating (Table-II). Diabetes was found in 9 (18%) and hypertension in 13 (26%) of the study subjects. Only 1 (2%) patient had family history of genital malignancy (Table-III). Majority 27 (54%) of the study subjects were

overweight. Mean BMI was 24.92±3.02 kg/m^2 with range from 18.95 to 29.3 kg/m^2. Most (82%) of the women were mildly anaemic, 8 (16%) moderately anaemic and 1 (2%) severely anaemic. Nine (18%) had bulky uterus on bimanual examination. Two patients had palpable pelvic mass. Twenty one (42%) had healthy cervix on per-speculum examination. Endocervical polyp was found in 8 (16%), myomatous polyp in 3 (6%), cervical erosion in 6 (12%) and hypertrophied cervix in 12 (24%) of study population (Table-IV). Ultrasonography revealed normal study in 23 (46%) women. Bulky uterus was found in 21 (42%), uterine growth in 2 (4%) and small uterus was found in 4 (8%) subjects (Table-V). Polyp was found in 10 (27.8%) premenopausal and 2 (14.3%) postmenopausal women. On the histopathological examination of the curetting's of premenopausal women, 12 (33.3%) had endometrial hyperplasia whereas 4 (28.6%) postmenopausal lady had endometrial hyperplasia. Eight (22.2%) had proliferative endometrium and 6 (16.7%) had secretory endometrium among premenopausal age group. Three (21.4%) postmenopausal lady had endometrial carcinoma, 2(14.3%) had endometritis and 3(21.4%) had atrophic endometrium (Table-6). Histopathological examination findings of endometrium among Premenopausal and Postmenopausal women were not statistically different. Fig-I shows the distribution of study population according to histopathological examination findings of the endometrium obtained by curettage. Commonest finding was endometrial hyperplasia.

Table-I

Age distribution, marital status and obstetrics history of the study population (n=50)

Age (in year)	No	Percentage
≤50	37	74.0%
51-55	5	10.0%
>55	8	16.0%
Mean ± SD (49.5 ± 4.81), Range 45-60		
Marital status	**No**	**Percentage**
Married	38	76.0%
Widow	12	24.0%
Obstetrics history	**No**	**Percentage**
Parity		
Nullipara	03	6.0%
Para 1-2	06	12.0%
Para 3-4	24	48.0%
Para ≥5	17	34.0%

Table-II

Menstrual pattern of the study population (n=50)

Clinical feature	No	Percentage
Duration of bleeding		
<6 months	20	40.0%
6 months – 1 year	26	52.0%
>1 year	4	8.0%
Amount of bleeding	**No**	**Percentage**
Scanty	1	2.0%
Average	36	72.0%
Excessive	13	26.0%
Number of episodes per month	**No**	**Percentage**
One	10	10.0%
Two	15	30.0%
>Two	25	50.0%
Menstrual status	**No**	**Percentage**
Regular menstruating	36	72.0%
Menopausal	14	128.0%

Table-III

Systemic diseases among the study population (n=50)

Systemic disease	No	Percentage
Diabetic		
Yes	9	18.0%
No	41	83.7%
Hypertension	**No**	**Percentage**
Present	13	26.0%
Absent	37	74.0%
Family history of genital malignancy	**No**	**Percentage**
Present	01	02.0%
Absent	49	98.0%

Table-IV

General and local examination findings of study population (n=50)

General examination	No	Percentage
BMI (kg/m^2)		
Normal (18.5-24.9)	23	46.0%
Overweight (25.0-29.9)	27	54.0%
Obese (≥30.0)	0	0.0%
Mean ± SD	24.92±3.02	
Range (min-max)	(18.95-29.3)	
Anaemia	**No**	**Percentage**
Mild	41	82.0%
Moderate	8	16.0%
Severe	1	2.0%
Bimanual examination (uterus)	**No**	**Percentage**
Normal size	25	50.0%
Enlarged (Bulky)	09	18.0%
Atrophied position	03	06.0%
Anteverted	08	16.0%
Retroverted	05	10.0%
Palpable pelvic mass	**No**	**Percentage**
Present	02	04.0%
Absent	48	96.0%
Per-speculum examination	**No**	**Percentage**
Endocervical polyp	08	16.0%
Myomatous polyp	03	06.0%
Cervical erosion	06	12.0%
Hypertrophied cervix	12	24.0%
Healthy cervix	21	42.0%

Table-V

Ultrasonography findings of uterus (n=50)

Ultrasonography	No	Percentage
Normal study	23	46.0%
Bulky uterus	21	42.0%
Uterine growth	02	4.0%
Small uterus	04	8.0%

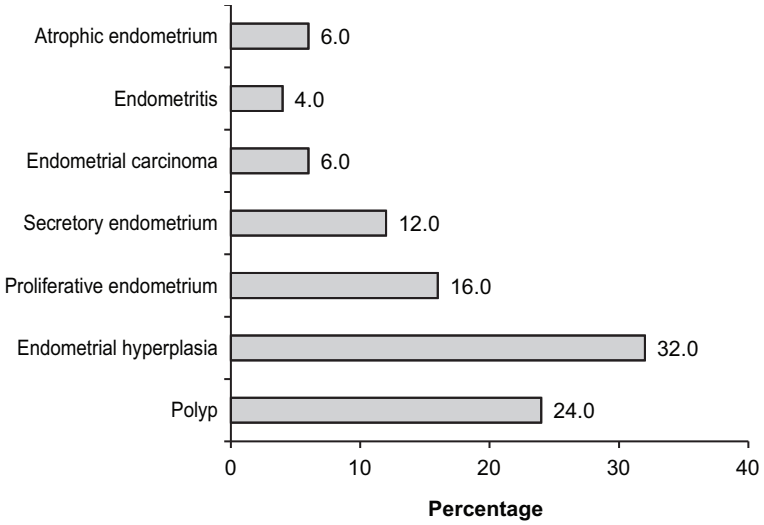

Fig 1: *Bar diagram showing the histopathological examination findings of endometrium.*

Table-VI

Histopathological examination findings of endometrium according to menopausal status (n=50).

Parameter	Premenopausal (n=36)		Postmenopausal (n=14)		*P* value
	n	%	n	%	
Polyp	10	27.8	02	14.3	0.270^{ns}
Endometrial hyperplasia	12	33.3	04	28.6	0.512^{ns}
Proliferative endometrium	08	22.2	00	0.0	-
Secretory endometrium	06	16.7	00	0.0	-
Endometrial carcinoma	0	0.0	03	21.4	-
Endometritis	0	0.0	02	14.3	-
Atrophic endometrium	0	0.0	03	21.4	-

ns = not significant

P value reached from chi square test.

Discussion:

This hospital based cross-sectional study was carried out with an aim to determine the causes of perimenopausal abnormal uterine bleeding among the patients attending to a tertiary-care hospital, and the role of diagnostic D&C and histopathology in the diagnosis of cause of perimenopausal abnormal uterine bleeding.

The mean age of study population was 49.58±4.81 years, ranged between 45 to 60 years. Khan et al reported in their study that mean age was 40.0±5.2 years, the minimum age was 32 years and maximum 75 years[9]. Age ranged from 45 to 53 years in another study by Takreem and co-workers[10]. In our study, more than half (52%) of the patients had p/v bleeding for 6 months to 1 year. Bleeding was scanty in 1(2%),

average in 36(72%) and excessive bleeding in 13(26%) of the study cases. Half (50%) of the study subjects had more than two episodes of bleeding per month. Khan S et al. in his study found 57.8% cases of menorrhagia, 32.8% irregular per vaginal bleeding, 2.4% continuous per vaginal bleeding, 2% per vaginal discharge, and 5% post-menopausal bleeding[9]. In another study, 53.33% had menorrhagia, 40% had polymenorrhoea and majority (66.6%) had abnormal bleeding for 4 to 8 months, 26.6% for 8 to 12 months and only 6.6% had bleeding for more than one year[10]. A study by Moghal N showed, among 458 cases, 48% presented with metrorrhagia, 41% with menorrhagia, 3% with intermenstrual bleeding and 1.74% with polymenorrhagia[11]. Clinical parameters of these studies correlate with the current study. We observed that 72% patients were regularly menstruating and 28% presented with post menopausal bleeding. In two separate studies postmenopausal bleeding was found among 6% and 5% population[10, 11] , whereas Dangal G found more than half (53.5%) of the patients had postmenopausal bleeding, where age ranged from 45 to 81 years[12] . The proportion of patients with postmenopausal bleeding depends on the age of the study population.

It was observed that 48% of the patients were multiparous, among them grand multipara (34%), low parity (12%), and nulliparous (6%). These features correlate with the study by Khan and colleagues, where 35.6% of the study population was multiparous, 40.6% grand multiparous, 5.4% nulliparous, and 18.4% had low parity[9]. The results of these two studies were similar.

Diabetes was found in 9 (18%) and hypertension in 13 (26%) of the study cases. Only 1 (2%) patient had family history of female genital malignancy. Takreem A et al. in their study found that 20% patients had hypertension and 13.3% had diabetes, and also noted that adenomatous hyperplasia was common among these group of patients[10]. We observed that 54% of the study population were overweight. Mild anaemia was found among 82%, moderate anaemia in 16% and severe anaemia was found in 2% of the subjects.

On per speculum examination, we found that most of the women had healthy cervix (42%) followed by hypertrophied cervix (24%). Eight (16%) had endocervical polyp, 6 (12%) cervical erosion, and 3 (6%) had myomatous polyp. Similar results were observed by Wajeeha A et al.[13] who found 65% with normal findings, 7.5% cervical polyp, 15% enlarge uterine size, 2.5% restricted mobility, and 10% vaginal discharge. In current study, sonological examination revealed normal findings in 23 (46%) women. Bulky uterus was found in 21 (42%), uterine growth in 2 (4%) and small uterus in 4 (8%) subjects. These observations showed similarities with the study by Wajeeha and co-workers, where a normal sonological finding was found among 62.5% cases presenting with abnormal uterine bleeding[13].

In this study, the histopathological examination findings of endometrial tissue revealed, majority (32%) had endometrial hyperplasia followed by polyp (24%). Eight patients (16%) had proliferative endometrium. Secretory endometrium was found in 12%, endometrial carcinoma in 6%, endometritis in 4% and atrophic endometrium in 6% cases. Literature review showed quite variable incidence of endometrial hyperplasia. Anuradha Panda[14] found in 28.3% and Sheth[15] found 26%. Whereas Amera et al.[10] reported it 15%, Dexus[16] 21% and Jyotsana[17] 22.6%. Relatively lower incidence was found in separate studies by Khan S et al. [9] 12.6%, and Dangal G[12] 9%. Polyp was found in 24% of cases in this study. An incidence of 10%, 12% and 20% cases were reported by Anuradha Panda[14], Veena Acharya[18] and Jyotsana[17] respectively. In this study, proliferative phase of endometrium was found in 16% of cases. Similar report (15%) was found by Dangal G[12], whereas Khan S et al.[9] observed proliferative phase in 46.4% cases. Secretory phase of endometrium was found in 12% of cases in the current study. Similar results were found by Dangal G[12] (9%). Endometrial carcinoma was found in 6% cases. Gonesh Dangal[12] reported 17.6% endometrial carcinoma in his study, whereas Khan S et al. [9] reported only 0.4% cases and Naheed Moghal[11] 0.86% cases in their studies. But substantially higher incidence (50%) was reported by Feng[19]. The lower incidence of endometrial cancer in Bangladeshi women may be due to the practice of early childbearing and multiparity. Endometritis was found in 4% cases. This is similar to other studies by Patil SG et al.[20] (3%) and Fakhar S et al.[21] (3.28%). Atrophic endometrium was observed in 6% of cases

in our study. Veena Acharya[18] reported 12% and Fakhar S et al. 8% cases[21] in their studies. Substantial higher rate of atrophic endometrium (34.5%) was observed by Gonesh Dangal[12]. It may be due to relatively higher age group was included in his study.

Although the incidence of endometrial hyperplasia is grossly variable, yet incidence of endometrial carcinoma is smaller in all cited studies. So important finding in this study seems to be endometrial hyperplasia with its attendant risk of progression to carcinoma. Further studies are required to address and explore the course of progression of endometrial hyperplasia to carcinoma.

Conclusion:

The current study reveals that, endometrial hyperplasia is the most common (32%) cause of perimenopausal abnormal uterine bleeding followed by polyp. The other causes are proliferative endometrium, secretory endometrium, endometrial carcinoma, atrophic endometrium and endometritis in descending order. Cause of perimenopausal AUB are mostly benign.

Conflict of interest: There was no potential conflict of interest to disclose.

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