Histopathological Pattern of Abnormal Uterine Bleeding in Endometrial Biopsies

Talat Mirza[1], Saadia Akram*[,2], Aamir Mirza[1], Sadiya Aziz[3], Tariq Mirza[4] and Tazeen Mustansar[1]

[1]*DIMC, Dow University of Health Sciences, Pakistan*

[2]*SMC, Dow University of Health Sciences, Pakistan*

[3]*Karachi Medical and Dental College, Pakistan*

[4]*Baqai Medical University, Pakistan*

Abstract: The study was conducted to determine the histopathological interpretation of endometrial curetting in relation to the very important and common problem of abnormal uterine bleeding. 1000 endometrial samples received at Ehsanullah Laboratories from January 2003 to December 2010 for the complaints of abnormal uterine bleeding were included in the study; these samples were received from Abbasi Shaheed Hospital and Civil Hospital Karachi along with pertinent clinical information.

Out of 1000 endometrial samples presenting with abnormal uterine bleeding, major bulk 570 (57%) of cases revealed no organic pathology and a smaller group of cases 430 (43%) showed definitive endometrial pathology. Maximum numbers of cases were in perimenopausal age group (45-60 year). In majority of patients with no organic pathology, normal physiological phases of proliferation, secretory, menstrual and atrophic in old age were most commonly recorded.

The most commonly seen organic lesions in this series were endometrial hyperplasia accounting for 130 cases (30%), chronic endometritis in 57 cases (13%) and endometrial polyps in 53 cases (12%). Histopathological evaluation of endometrial samples is helpful in determining the cause of abnormal uterine bleeding, especially indicated in over 35year age group to rule out malignancy and preneoplasia.

Keywords: Abnormal uterine bleeding, endometrial curetting, histopathology.

INTRODUCTION

Abnormal uterine bleeding is one of the commonest complaints leading to endometrial sampling by endometrial biopsy or curettage. Examination of endometrial biopsy is a challenge to practicing pathologists, largely due to the wide range of morphologic patterns resulting from both normal and abnormal changes, exogenous hormones, infections and intrauterine tumor [1]. Abnormal uterine bleeding may be defined as bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause. It is a common problem having a long list of causes in different age groups [2]. It interferes significantly with the quality of life in an otherwise healthy woman [3]. In order to evaluate endometrial samples information regarding age and menstrual history with clinical examination are a prerequisite [4]. The importance of Endometrial curettage done to obtain material for histopathological evaluation, to aid in diagnosis and further management, cannot be overemphasized especially in perimenopausal females at a risk of developing malignancy [5].

*Address corresponding to this author at the SMC, Dow University of Health Sciences, Pakistan;
E-mail: saadia.aamir@yahoo.com

AUB can present in many patterns, though no consistent relationship to causes has yet been established [6].

AUB may be due to structural or functional causes [7]. Common structural causes include fibroids, polyps, endometrial hyperplasia, endometrial carcinoma and complications of pregnancy [2]. The large group of functional disorders called as Dysfunctional uterine bleeding (DUB) can only be diagnosed after exclusion of structural, iatrogenic, medications, psychological and systemic disorders by various diagnostic techniques [8, 9].

The clinical differential diagnosis is different for various age groups and histopathological examination of material obtained on endometrial curettage helps in diagnosis of these diseases presenting with AUB [1].

It is customary to consider the various causes of AUB in four age groups [3].

(i) Adolescence

(ii) Reproductive

(iii) Perimenopausal

(iv) Postmenopausal

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AUB is a very common menstrual symptom in women of reproductive years [10].

DUB occurs most commonly at beginning and end of reproductive years [11]. Anovulatory DUB is due to disturbance of hypothalamic-pituitary- ovarian axis that causes irregular, prolonged and at times heavy menstrual flow [8].

Postmenopausal bleeding is a common symptom and may be due to benign or malignant pathologies and systemic disorders [12, 13].

MATERIALS AND METHODS

1000 consecutive cases of endometrial samples received during the period of January 2003- December 2010 for complaints of AUB at Ehsanullah Laboratory for histopathological diagnosis with pertinent clinical information and sufficient material were included in this cross sectional study. Samples were received mostly from Gynae wards of Abbasi Shaheed Hospital, followed by Civil Hospital and smaller number from other places in Karachi.

The formalin fixed samples were routinely processed and 4-5µ thick sections were cut from paraffin blocks. The sections were stained by routine haemotoxylin and eosin stains and additional special stains if required. The ages of patients ranged from 18-60 years. The patients were divided into three groups viz, Group I (adolescents/reproductive): 18-40 years, Group II (perimenopausal): 41- 45 years and Group III (postmenopausal): 46- 60 years.

RESULTS

In the present study out of 1000 endometrial samples presenting with abnormal uterine bleeding, major bulk 570 (57%) of cases revealed no organic pathology and a smaller group of cases 430 (43%) showed definitive endometrial pathology (Table **1**). Maximum numbers of cases were observed in 45-60 year age group, followed by 41-45 year age group and minimal in 18-40 year age group (Table **2**).

Table 1:

Main Outcome	
Dysfunctional Uterine bleeding	570 (57%)
Organic lesions	430 (43%)
Total	**1000 (100%)**

Table 2:

Common causes of AUB by ages	
Age ranges	**Causes**
18-40 years	Endometrial hyperplasia Chronic endometritis Endometrial polyps
41-45 years	Endometrial hyperplasia Endometrial polyps
46-60 years	Endometrial hyperplasia Endometrial atrophy

In majority of patients with no organic pathology, normal physiological phases of proliferation, secretory, menstrual and atrophic endometrium in old age were most commonly recorded (Table **3**). 200 (35.08%) cases of proliferative phase and 170 (29.82%) cases of secretory phase were noted. Rest of the 200 functional causes, 130 (22.80%) were diagnosed as disordered proliferation. Only 40 (7.01%) were labeled as inadequate leuteal phase and 30 (6.0%) as irregular shedding.

Table 3:

Functional Issues	
SecretoryPhase	170 (30%)
Poliferative phase	200 (35%)
Disordered Proliferation	130 (23%)
Leutal phase insufficiency	40 (7%)
Irreglar shedding	30 (5%)
Total	**570 (100%)**

Table 4:

Organic Lesions	
Endometrial hyperplasia	130 (30%)
Chronic endometritis	57 (13%)
Endometrial polyps	53 (12%)
Pregnancy related	50 (12%)
Endocervical polyps	35 (8%)
Atrophic endometrium	30 (7%)
Leiomyomas	30 (7%)
Endometrial metaplasia	25 (6%)
Squamous cell carcinoma	12 (3%)
Endometrial carcinoma/sarcoma	8 (2%)
Total	**430 (100%)**

Out of the list of organic lesions the most commonly seen lesions in this series was endometrial hyperplasia accounting for 130 (30%) cases (Table **4**). Chronic endometritis was present in 57 (13%) cases and endometrial polyps were the cause of bleeding in 53 (12%) cases.

Frequency of malignancy was low and was detected in 20 (5%) cases out of which 8 (2%) showed uterine malignancies and 12 (3%) showed Squamous cell carcinoma of cervical origin.

DISCUSSION

In our study most common organic cause of bleeding was due to endometrial hyperplasia (30%) which is consistent with other studies carried out in Karachi by Anwer M *et al.* (62.8%) in 2004 [14] and still older study by Mogal N (11.1%) in 1997 [15]. This finding supports the hyperestrogenic significance as an important stimulus to proliferation. In contrast Shagufta S *et al.* showed endometrial hyperplasia only in 4.9% cases [16]. The reason probably being that they considered only the reproductive age group whereas our study includes adolescence, reproductive age with largely perimenopausal and menopausal age groups.Therfore the effects of estrogen excess appear to be more marked in later ages. Asim SS *et al.* showed the frequency of endometrial hyperplasia (10%) to be less than endometrial carcinoma and benign lesions in postmenopausal females [17]. Frequency of endometrial hyperplasia (27%) in postmenopausal females was much higher than of endometrial carcinoma (6%) in a study by Sarfaraz T *et al.* in 2007 [18]. So considering all age groups most common lesion presenting with abnormal uterine bleeding is Endometrial hyperplasia. Malignancy was seen in 20(5%) cases of abnormal uterine bleeding in our series supporting the possibility of neoplastic process being more frequent histological change .This is much higher than observed in Rawalpindi study by Muzzaffar M *et al*(0.4%) in 2005 but much lower than 15.8% in a study by Anwar M *et al*. Ejaz S *et al.* study revealed most common malignant cause of abnormal uterine bleeding to be Carcinoma cervix (22%) and then Carcinoma Endometrium (12%) [19]. This is similar to our study which shows Squamous cell carcinoma most probably arising from cervix (3%) to be slightly more common than carcinoma endometrium (2%). Supporting the observation of Carcinoma of cervix still being the commonest malignancy of genital tract in contrast to western countries where frequency has gone down due to vigilant screening programs.

Our study revealed organic causes especially malignancy increased with increasing age this is quite similar to Asim SS *et al.* and Dangal G studies, most probably consistent with unopposed estrogenic effects in later years.

DUB is more common in early and late reproductive years and most of the cases submitted for abnormal uterine bleeding had no organic lesion and belonged to the functional grouping largely related to hormonal imbalance in reproductive age group. This problem constitutes a big bulk of curettage biopsies done for the alarming clinical indication in earlier ages.

CONCLUSION

Significant number of endometrial samples revealed pathology rendering endometrial curetting and biopsy an important procedure. It is specially indicated in women over 35 years of age with AUB, to rule out preneoplasia and malignancy.

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