

Abnormal Uterine Bleeding: a Histopathological Study

* Nadia Adnan Ghani (MBChB, FIBMSpath)

** Aiad Abdullah Abdulrazak (MBChB, FIBMSpath)

*** Ehsan Mahmood Abdullah (MBChB, FIBMSpath)

Abstract

Background: Abnormal uterine bleeding (AUB) is considered as one of the most common and perplexing problems both to the patient and the gynecologist. Until the pathology underlying menorrhagia is accurately diagnosed, proper therapy is hardly possible.

Objective: The objectives of the study were to determine the types and frequencies of pathologies in endometrial curettings of abnormal uterine bleeding & compare different endometrial pathologies in patient to age groups.

Material and Methods: a retrospective study in which H&E sections of endometrial curettings of 152 patients were evaluated. Diagnosis was made by correlating the morphological findings with the clinical history.

Results: Out of 152 cases of AUB, 61.8% were due to organic causes, while 33.5% were dysfunctional in nature and seven (4.6%) specimens were insufficient for diagnosis. Of the organic causes of AUB, Table (3), low grade endometrial hyperplasia was the most frequent cause (41.5%) then pregnancy-related bleeding (31.9%). The most common histologic pattern in DUB was proliferative phase endometrium 45.1%, followed by secretory pattern 21.6%.

Conclusion: Our study on endometrial curettings in abnormal uterine bleeding revealed clustering of cases around Perimenopause.

Keywords: Abnormal Uterine Bleeding, menorrhagia.

* Department of Pathology / College of Medicine / Tikrit University/ Tikrit/ Iraq.

** Department of / College of Medicine / University// Iraq.

*** Department of / College of Medicine / University// Iraq.

Introduction

Abnormal uterine bleeding (AUB) is considered as one of the most common and perplexing problems both to the patient and the gynecologist; it is responsible for as many as one-third of all outpatient gynecologic visits. Two and a half million American women complain of a menstrual disorder each year.[1]

Although abnormal uterine bleeding can be caused by well-defined organic pathologic conditions, such as chronic endometritis, endometrial polyp, submucosal leiomyomas,

or endometrial neoplasms, the largest single group encompasses functional disturbances, referred to as dysfunctional uterine bleeding (DUB). DUB is defined as any excessive bleeding (excessively heavy, prolonged or frequent of uterine origin which is not due to demonstrable organic disease, complications of pregnancy or systemic disease.

An endometrial biopsy should be performed on all women over 35 years with menorrhagia to rule out endometrial cancer or pre-malignant lesion (e.g atypical hyperplasia) . Endometrial biopsy also

should be considered in women between the age 18 and 35 years with AUB who have risk factors for endometrial cancer or if AUB does not resolve with medical management.[2]

AUB may be the symptom of endometrial carcinoma in 8 – 50% of cases.[3] Adenocarcinoma of the endometrium is often preceded by proliferative precursor lesions “endometrial hyperplasia”. Thus, early accurate diagnosis and proper treatment of endometrial hyperplastic lesions are essential to prevent progress to endometrial cancer and preclude unwarranted hysterectomy without definitive diagnosis.[4]

Previous studies have shown that 10–20% of endometrial hyperplasias progress to carcinoma when left untreated. It will therefore be of great importance to stratify patients into high-risk and low-risk groups before therapy is initiated so that medical treatment or conservative surgery can be offered and unnecessary radical surgery can be avoided.[5,6].

Until the pathology underlying menorrhagia is accurately diagnosed, correct methods of treatment are impossible, Dilatation and curettage is a useful and cost effective method of detecting intrauterine pathologies and very few lesions escape detection, therefore this histological study was carried out to identify the causes of AUB at different age groups in our population at Tikrit Province which may be helped in planning the therapeutic strategies by the gynecologists.

Material and Methods

This is a retrospective study done in the Tikrit city, Iraq. Cases were selected by reviewing the pathology reports of all cases of abnormal vaginal bleeding procured between July 2010 and December 2011, at private medical laboratories in Tikrit, Iraq. A total of 152 cases were included in the study. For each case, representative slides were

reviewed and the pattern of uterine histopathological changes identified and classified according to age groups.

The first category includes patients with abnormal uterine bleeding due to non-organic causes includes

1. Secretory endometrium,
2. Proliferative endometrium,
3. Atrophic endometrium,
4. Disordered proliferative endometrium,
5. Decidual reaction
6. Hormonal imbalance

The second category includes patients with abnormal uterine bleeding due to organic causes

1. Endometrial polyp
2. Endometritis
3. Low grade endometrial hyperplasia
4. Endometrial carcinoma
5. Pregnancy-related conditions
6. Cervical lesions

The third category includes patients whose specimens were Insufficient for diagnosis

The patients were further divided into the three age groups: young or early reproductive age (< 40 years), women of latter reproductive age or perimenopausal age (40-55 years), and lastly postmenopausal women (55 years and older)

Results

Out of a total number of 152 cases of AUB enrolled in this study, 94 (61.8%) were due to organic causes, while 51 (33.5%) were dysfunctional in nature and seven (4.6%) specimens were insufficient for diagnosis, Table (1).

AUB was more commonly related to non-organic causes among those below the age of 40 years (47.0% and 38.3% respectively) while in perimenopausal patients (40-55 years), the frequency of organic and non-organic causes of AUB were almost equal (53.2% and 52.9% respectively). All cases of

AUB in postmenopausal women (>55 years) were caused by organic lesions.

The most common histologic pattern in DUB was proliferative phase endometrium (45.1%), followed by secretory pattern, 11 (21.6%). Most patients – 27 (52.9%) – are clustered around pre-menopause and none (0%) beyond menopause, Table (2).

Of the organic causes of AUB, Table (3), low grade endometrial hyperplasia was the most frequent cause (41.5%) then pregnancy-

related bleeding (31.9%). All cases of hyperplasia were of simple typical hyperplasia type. Pregnancy-related conditions were the major organic cause of AUB in those patients below the age of 40 years (40.6%), followed by low grade endometrial hyperplasia (7.8%), while in pre- and post-menopausal women, the predominant organic cause of AUB was low grade endometrial hyperplasia (36.7% and 55.5% respectively).

Table (1): Distribution of patients according to age group.

Diagnostic group	Age (Years)			Total
	< 40	40-55	> 55	
AUB due to organic causes	36 (38.3%)	50 (53.2%)	8 (8.5%)	94 (61.8%)
AUB due to non-organic causes*	24 (47.0%)	27 (52.9%)	0	51 (33.5%)
Insufficient for diagnosis	4 (57.1%)	2 (28.6%)	1 (14.3%)	7 (4.6%)
Total	64	79	9	152

* Dysfunctional uterine bleeding (DUB)

Table (2): Abnormal uterine bleeding due to non-organic causes*

Histopathological diagnosis	Age (years)			Total
	< 40	40-55	> 55	
Secretory endometrium	3 (4.7%)	8 (10.8%)	0 (0%)	11 (21.6%)
Proliferative endometrium	12 (18.7%)	11 (14%)	0 (0%)	23 (45.1%)
Atrophic endometrium	0 (0%)	1 (1.3%)	0 (0%)	1 (1.96%)
Disordered proliferative endometrium	1 (1.6%)	0 (0%)	0 (0%)	1 (1.96%)
Decidual reaction	4 (6.2%)	3 (3.8%)	0 (0%)	7 (13.7%)
Hormonal imbalance	4 (6.2%)	4 (5.1%)	0 (0%)	8 (15.7%)
Total	24	27	0	51

* Dysfunctional uterine bleeding (DUB)

Table (3): Abnormal uterine bleeding due to organic causes

Histopathological diagnosis	Age (years)			Total
	< 40	40-55	> 55	
Endometrial polyp	3 (4.7%)	10 (13%)	0 (0%)	13 (13.8%)
Endometritis	1 (1.6%)	4 (5.1%)	0 (0%)	5 (5.3%)
Low grade endometrial hyperplasia	5 (7.8%)	29 (36.7%)	5 (55.5%)	39 (41.5%)
Endometrial carcinoma	0 (0%)	0 (0%)	2 (22.2%)	2 (2.1%)
Pregnancy-related conditions	26 (40.6%)	4 (5.1%)	0 (0%)	30 (31.9%)
Cervical lesions	1 (1.6%)	3 (3.8%)	1 (11.1%)	5 (5.3%)
Total	36	50	8	94

Discussion

Abnormal uterine bleeding is defined as any bleeding from uterus other than menstrual bleeding, abnormal uterine bleeding could be caused by a wide spectrum of local and systemic disorders represented by an aberrant physiologic status at one hand to uterine malignancy at the other.[7]

Endometrial cancer, the most frequent gynecologic malignancy in the Western world, develops through preliminary stages of endometrial hyperplasia, thus, correct diagnosis is crucial to plan an optimal treatment and to prevent endometrial cancer development.[8]

In this study, AUB was more commonly related to non-organic causes among those below the age of 40 years (47.0% and 38.3% respectively) while in perimenopausal patients (40-55 years), the frequency of organic and non-organic causes of AUB were almost equal (53.2% and 52.9% respectively). All cases of AUB in postmenopausal women (>55 years) were caused by organic lesions.

Of the organic causes of AUB, low grade endometrial hyperplasia was the most

frequent cause (41.5%) then pregnancy-related bleeding (31.9%). In our cases of hyperplasia only simple typical hyperplasia was noted. This in agreement with Sarwar et al.[9]

Endometrial hyperplasia is a precursor of endometrial cancer. The incidence of endometrial hyperplasia without and with atypia peaks in the early 50s and early 60s respectively [10,11]

The most common histologic pattern in DUB was proliferative phase endometrium (45.1%). Most patients are clustered around pre-menopause, in agreement with Al Mola et al [12] and Sarwar et al [9] also agree with Dubinsky who related these observations to the peak effect of hormonal imbalance in the premenopausal period.[13]

Among those patients below 40 years old, pregnancy-related bleeding was the most frequent because (40.6%) followed by proliferative pattern (18.7%). The percentage of pregnancy-related causes of uterine bleeding decreased gradually with increasing age within the reproductive life. Conversely, neoplasms and inflammatory causes of abnormal uterine bleeding increased with age



as shown in table (2). These results are in agreement with the findings of Weeks and Duffy and explained by the pathogenetic factors of these diseases which increase with increasing age.[14]

Endometrial polyps was higher in the age group 40-55 years (13%), than in those below the age of 40 years (4.7%) and those above the age of 55 years (0%) These observations agreed with previous reports that showed an overall prevalence of endometrial polyps of 10-24%; the incidence rises with increasing age, peaks in the fifth decade of life and gradually declines after menopause, there is no direct evidence for a greater propensity of polypoid endometrium to undergo malignant change compared to the adjacent normal endometrium. [15,16]

Inadequate samples are reported when no specimen is obtained or the quality or tissue yield of a sample is insufficient for adequate assessment. The present study showed an inadequacy rate of 4.6%, which is lower than figures previously reported.[17,18]

References

- [1] Thoms SL, Ellertson C: Nuisance or natural and health: should monthly menstruation be option for women? *Lancet*, 2000;355:922-4
- [2] ACOG Practice Bulletin: Clinical Management of Anovulatory Bleeding. *Int J Gynaecol Obstet* 2001; 72(3): 263-71.
- [3] Dangal G. A study of endometrium of patients with abnormal uterine bleeding at Chitwan valley. *KUMJ* 2003;1:110-2.
- [4] Mutter GL: Diagnosis of premalignant endometrial disease. *J Clin Pathol*, 2002; 55:326-331.
- [5] Goldenstein SR: Modern evaluation of endometrium. *Obstet Gynecol*. 2010; 116:168-76.
- [6] Oehler MK, Rees MC: Menorrhagia: an update. *Acta Obstet Gynecol Scand* 2003; 82:404-22.
- [7] Khan S, Hameed S, Umer A: Histopathological pattern of endometrium on diagnostic D & C in patients with abnormal uterine bleeding. *Annals*, 2011;17(20): 166-170.
- [8] Anne Ørbo A, Marit Arnes M, Hancke C, *et al*: Treatment results of endometrial hyperplasia after prospective D-score classification A follow-up study comparing effect of LNG-IUD and oral progestins versus observation only. *Gynecologic Oncology*.2008, 111: 68–73.
- [9] Sarwar A , ul Haque A: Types and Frequencies of Pathologies in Endometrial Curettings of Abnormal Uterine Bleeding. *International J Pathol*, 2005; 3(2): 65-70
- [10] Ellenson LH, Ronnett BM, Kurman RJ. Precursor Lesions of Endometrial Carcinoma. In: Kurman RJ, Ellenson LH, Ronnett BM, eds. *Blaustein's Pathology of the Female Genital Tract*. 6th Ed. New York: Springer Verlag, 2011: 385-92.
- [11] Reed SD, Newton KM, Clinton WL, *et al*. Incidence of Endometrial Hyperplasia. *Am J Obstet Gynecol* 2009; 200(6): 678.e1-6.
- [12] Al Mola IM, Abdullah SA: Study of endometrial hyperplasia in patients with abnormal uterine bleeding in Tikrit city. *TMJ* 2004;iv(2):8-15.
- [13] Dubinsky T, Abu-Gazzeh Y, Stroehlein K: role of transvaginal sonography and endometrial biopsy in the evaluation of dysfunctional uterine bleeding in premenopausal women. *J Clin Ultrasound*, 1998,26(3):180-181.
- [14] Weeks AD, Duffy SRG: Abnormal uterine bleeding: diagnosis and medical management, In: Studd J (Editor):progress in obstetrics and gynaecology (vol.12). Churchill Livingstone, 1996,309-326.
- [15] Savelli L, De Iaco P, Santini D, *et al*. Histopathologic Features and Risk Factors for Benignity, Hyperplasia and Cancer in



Endometrial Polyps. *Am J Obstet Gynaecol* 2003; 188(4): 927-31.

[16] McCluggage WG. Benign Diseases of the Endometrium. In: Kurman RJ, Ellenson LH, Ronnett eds. *Blaustein's Pathology of the Female Genital Tract*. 6th Ed. New York: Springer Verlag, 2011: 305-58.

[17] Abdullah LS, Bondagji NS: Histopathological Pattern of Endometrial Sampling Performed for Abnormal Uterine Bleeding. *Bahrain Med Bull* 2011; 33(4): 1-6.

[18] Baral R, Pudasaini S: Histopathological pattern of endometrial samples in abnormal uterine bleeding. *J Pathol Nepal*, 2011, 1, 13-16.

