

Abnormal uterine bleeding: Histopathological study

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Abstract

Background For both the patient and the gynecologist, abnormal uterine bleeding (AUB) is one of the most common and confusing conditions. Until the pathology basic menorrhagia is precisely analyzed, legitimate treatment is not really imaginable..

Aim of study: The study's goals were to compare various pathologies among patient age groups and determine the types and frequencies of abnormal uterine bleeding pathologies.

Material and Methods: A retrospective review study concentrate on in which H&E segments of endometrial currettings and hysterectomy examples of 70 patients were assessed. The cases were collected at random from Al-Hilla Teaching Surgical Hospital between July 2013 and March 2014. The morphological findings and the clinical history were used to make the diagnosis.

Results Out of 70 cases of AUB, 44 (62.86%) were caused by organic factors, while 26 (37.14%) were caused by non-organic factors (DUB) Liomyoma was the organic cause in 16 cases (36.36%), followed by pregnancy-related conditions in 14 cases (31.82%), and proliferative endometrium was the non-organic cause in 14 cases (53.84%), secretory endometrium 8 (30.67%), and so on.

Conclusions The proliferative endometrium (53.84%) and liomyoma (36.36%) were the most common causes of AUB in our study, with the majority of cases occurring in pre- and per-menopausal age groups.

الخلاصة

يعتبر النزف الرحمي غير الاعتيادي من اكثر المشاكل الصحية شيوعا بين النساء ولا يمكن معالجتها حتى يتم تشخيص السبب المرضي لهذا النوع من النزيف

هذه الدراسة تهدف الى تشخيص الاسباب النسيجية المرضيه وتحديد نسبها مقارنة باعمار النساء المصابات تم دراسة 70 حالة تم استحصالتها من مختبر النسيج المرضي لمستشفى الحلة الجراحي التعليمي للفترة من تموز لسنة 2013 وحتى اذار 2014 وجميع العينات صبغت بصيغة الهيماتوكسلين والايوسين وكانت النتيجة : عدد النساء المصابات بالنزف الرحمي غير الاعتيادي لاسباب عضوية هو 44 (62.86%) المصابات بالنزف الرحمي غير الاعتيادي لاسباب غير عضوية هو 26 (37.14%) من بين الاسباب العضوية للنزف الرحمي غير الاعتيادي ياتي الورم الليفي الحميد للرحم بالمرتبة الاولى 16 حالة (36.36%) يليه الحمل والمشاكل المتعلقة به 14 حالة (31.82%)

اما بالنسبة للاسباب غير العضويه ياتي التغير النسيجي التكاثري لبطانة الرحم بالمرتبة الاولى 14 حالة (53.84%) يليه التغير النسيجي الافرازي لبطانة الرحم 8 حالات (30.67%) الاستنتاج : اغلب الحالات المصابة بالنزف الرحمي غير الاعتيادي هي في الاعمار ما بين سن الطمث والمقاربة لسن الياس وتاتي بالتغير النسيجي التكاثري لبطانة الرحم الاورام الليفية الحميدة لبطانة الرحم في مقدمة اسباب النزف الرحمي غير الاعتيادي.

Introduction

For both the patient and the gynecologist, abnormal uterine bleeding (AUB) is one of the most common and confusing conditions; It accounts for as much as one third of all gynecologic outpatient visits. Each year, 2.5 million American women report experiencing a menstrual disorder[1]. Any bleeding that does not meet the standards of normal

menstrual bleeding has been referred to as abnormal uterine bleeding. Exclusion leads to the diagnosis of dysfunctional uterine bleeding (DUB) when an organic cause of AUB cannot be identified. A clearly defined organic abnormality is the cause of the abnormal uterine bleeding in approximately 25% of patients[2].

Cause of abnormal uterine bleeding include: Systemic causes like problems

in blood clotting and endocrine problems (Thyroid Dysfunction) [3] and gynecological causes like pregnancy, miscarriage, adenomyosis, use of some birth control method like intrauterine device (IUD) and contraceptive pills, infection of uterus and cervix, fibroid, polyps, some types of cancer (vaginal, cervical, and endometrial), endometrial hyperplasia, polycystic ovarian syndrome, and dysfunctional uterine bleeding(DUB) [4] . DUB is classified as anovulatory (caused by disruption of progesterone's cyclical secretion) and ovulatory (a local defect in endometrial hemostasis is thought to be the cause) [4].

Initially AUB should be evaluated by taking medical history (duration, amount of bleeding, pain fever, bleeding after intercourse family history of bleeding disorders...etc) with physical and pelvic examination, During the pelvic exam, the clinician will look for any obvious lesions (cuts, sores, or tumors) and will examine the size and shape of the uterus. He or she will examine the cervix to look for signs of cervical bleeding [1]

Lab tests In premenopausal women like a pregnancy test is performed. If there is any abnormal vaginal discharge, a cervical culture may be performed a Pap smear/human papillomavirus (HPV) test may be obtained to screen for cervical cancer. Blood tests may also be done to determine if there are problems with blood clotting or other body-wide conditions, such as thyroid disease, liver disease, or kidney problems. [1][2]

Tests to determine ovulatory status Because hormonal irregularities can contribute to abnormal uterine bleeding, testing may be recommended to determine if the woman ovulates (produce an egg) during each monthly cycle. [4]

Transvaginal ultrasound can provide a clear image of the uterus. The lining of the uterus is evaluated and measured and hysteroscopy+ allow the physician to see

the inside of the uterus. Tissue samples may be taken [5]

Dilation and curettage (D&C) is an important test that is used to assess the endometrial status, In a dilatation and curettage, the cervix or opening of the uterus is dilated and instruments are inserted and used to remove endometrial or uterine tissue. D&C usually requires anesthesia. It can sometimes be used as a treatment for prolonged or excessive bleeding that is due to hormonal changes and that is unresponsive to other treatments. [6]

Materials and Methods

In the Iraqi city of Hilla, a retrospective study was conducted. The pathology reports of all Al Hilla teaching general surgery hospital cases of abnormal vaginal bleeding obtained between July 2013 and March 2014 were used to select cases. The study looked at 70 different cases in total. For each case, delegate slides were inspected and the example of uterine histopathological changes distinguished and ordered by age gatherings.

The first class incorporates patients with abnormal uterine bleeding because of non-organic cause incorporate 1. Secretory endometrium 2. Proliferative endometrium

3. Disordered proliferative endometrium . Patients with abnormal uterine bleeding from organic causes fall into the second class: 1. Endometrial polyp 2. Endometritis 3. endometrial hyperplasia 4. Endometrial cancer 5. Conditions associated with pregnancy 6. leiomyoma

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

Results

Out of the 70 AUB cases that were included in this study, 44 (62.86%) had

organic causes, while 26 (37.14%) had dysfunctional (non-organic) causes. our review showed that the frequency of AUB because of organic and non organic causes in those under 40 years and in those 40-55 years (perimenapausal) is practically equivalent (46.15%,45.45%) and (53.85%,50%) respectively .All instances of AUB in postmenapausal ladies are brought about by organic causes. Tab (1), Fig(1).

Most common histopathological pattern in DUB (AUB due to non organic cause)Tab (2), Fig (2) was the proliferative endometrium 14(53.84%) followed by secretory endometrium 8(30.67%) Fig 4 and only 4cases(15.38%) with disordered proliferative endometrium, most cases14(53.84%) are clustered around the peri-menopause while no cases beyond menopause (tab 2)

Of the organic causes of AUB (Tab 3)(Fig 3) the liomyoma was the most frequent cause 16 (36.36%) followed by pregnancy related conditions 14(31.82%)

The most frequent organic cause in those under 40 years was pregnancy related conditions 14 (31.82%) followed by liomyoma 6 (37.5%) ,Those patients between 40-55 years the liomyoma 10 (62.5%) was the most frequent followed by endometrial hyperplasia 6(13.63%) while the endometrial polyp and chronic endometritis were less frequent in these age groups[6(13.63%), 2(9.09%)] respectively

Finally in those patients of menopausal age group > 55 years the only organic cause that was detected in our study was the endometrial carcinoma 2(9.09%)

Tab(1) Distribution of patients according to age groups				
Diagnostic group	<40 years	40-55 years	>55years	Total
AUB due to non organic cause	12(46.15%)	14(53.85%)	0	26(37.14%)
AUB due to organic cause	20(45.45%)	22(50%)	2(4.55%)	44(62.86%)
Total	32(45.71%)	36(51.43%)	2(2.86%)	70(100%)

P value 0.039 Tab(2) AUB due to non organic causes				
Non organic causes of AUB (DUB)	<40 years	40-55 years	>55years	Total
Proliferative endometrium	4(28.5%)	10(71.42%)	0	14(53.84%)
Secretory endometrium	4(50%)	4(50%)	0	8(30.67%)
Disordered maturation of endometrium	4(15.83%)	0	0	4(15.83%)
Total	12(46.15%)	15(53.85%)	0	26(100%)

ab(3) AUB due to organic causes p value 1.377				
Organic causes	<40years	40-55 years	>55years	Total
Liomyoma	6(37.5%)	10(62.5%)	0	16(36.36%)
Endometrial polyps	0	4(9.09%)	0	4(9.09%)
Chronic endometritis	0	2(9.09%)	0	2(4.55%)
Endometrial hyperplasia	0	6(13.36%)	0	6(13.36%)
Endometrial carcinoma	0	0	2(4.55%)	2(4.55%)
Pregnancy related disorders	14(31.82%)	0	0	14(31.82%)
Total	20(45.45%)	22(50%)	2(4.55%)	44(100%)

Fig 1 distribution of patients according to age groups

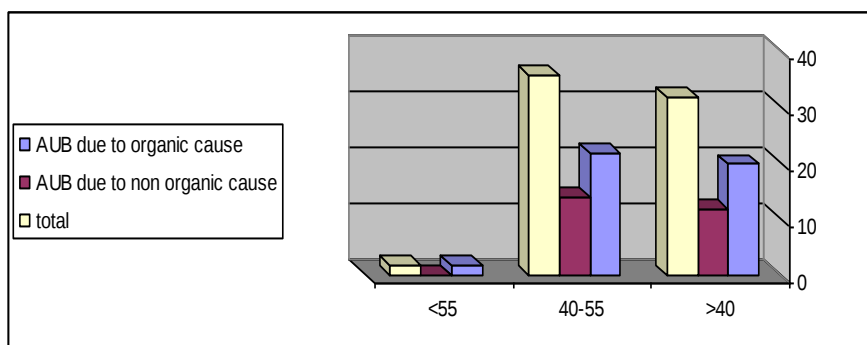


Fig 2 Abnormal uterine bleeding (AUB) due to non organic cause

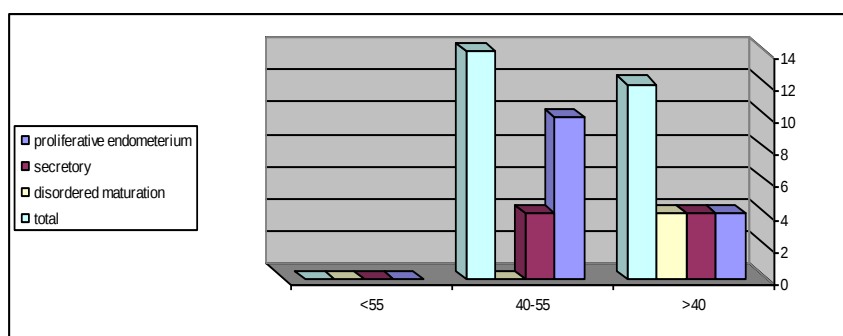
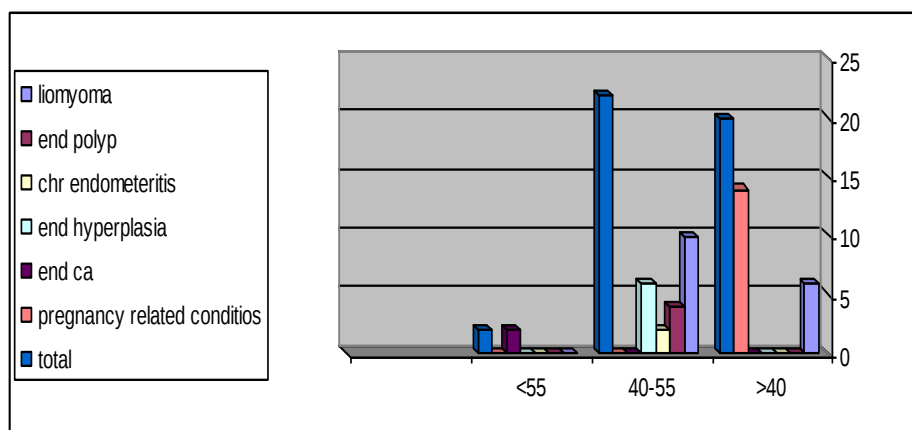


Fig 3 AUB due to organic causes



Discussion

Any bleeding from the uterus other than menstrual bleeding is considered abnormal uterine bleeding. Abnormal uterine bleeding can be brought on by a wide range of local and systemic disorders, ranging from an abnormal

physiologic status on one hand to uterine malignancy on the other.[7]

Since endometrial hyperplasia begins in the early stages and is the most common gynecologic cancer in Western countries, accurate diagnosis is essential for planning the most effective treatment for

endometrial hyperplasia and preventing endometrial cancer from developing.[8]

In our study AUB most commonly caused by organic causes which clustered mainly in per-menopausal age group (44-55 y) , this result was in agreement with Ghani et al [9] (study of AUB in Tikrit) while it disagreed with Abdulla et al (study in Bahrain)[10] and Dadhanian et al [11] (study in India). The frequency of non organic and organic causes of AUB in those patients pre and per menopausal (>40 y and 40-55 y) nearly equal (46.15% ,45.45%) & (53.85%, 50%) respectively while all cases of AUB in postmenopausal women were caused by organic causes so these results were in agreement with Ghani et al (study in Tikrit)[9] . Regarding the non organic cause of AUB the statistical difference was significant p value < 0.05 Tab 2, the proliferative endometrial pattern was the most frequent non organic cause (53.84%) most of them affect the per- menopausal age group (40-55y) which agreed with Ghani et al [9], Al Mola et al and [12] and Sarwar et al [13] while disagreed with Abdulla et al [10] in which the most frequent non organic cause was due to secretory endometrium these differences could be due to difference in size of the sample

The statistical difference between the organic causes of AUB Tab(3) was non-significant, with a p value greater than 0.05. Leiomyoma was the most common organic cause (36.36 percent), followed by pregnancy-related conditions and endometrial hyperplasia (31.82 percent, 13.63 percent), which was in contrast to Ghani et al. [9], Sarwar et al. [13], in which endometrial hyperplasia was the most common, this could be due to inclusion of biopsy of hysterectomy specimens in our study while in the other were not

With increasing reproductive age, the proportion of uterine bleeding caused by pregnancy gradually decreased. In contrast, as can be seen in the table(3),

the prevalence of neoplasms and inflammatory causes of abnormal uterine bleeding increased with age. These findings are consistent with those of Weeks and Duffy and can be explained by the pathogenetic factors of these diseases, which increase with age[14]. Endometrial polyps were more common in people between the ages of 40 and 55 (9.09%) than in people under the age of 40 (0%) and over the age of 55 (0%). These findings were in line with previous studies, which demonstrated an overall prevalence of endometrial polyps of 10 to 24%; There is no direct evidence that polypoid endometrium has a greater propensity to undergo malignant change than the normal endometrium adjacent to it. The incidence increases with age, reaches its peak in the fifth decade of life, and gradually decreases after menopause. [15,16]

Conclusion

In our study, leiomyoma and the proliferative endometrium were the most common causes of AUB, with cases clustering in pre- and post-menopausal age groups.

The occurrence of the threatening growths of endometrium increments with expanding age.

Recommendations

D&C ought to be performed for all ladies with AUB and the specimen ought to be sent for histopathological assessment. Due to the rising prevalence of endometrial carcinoma in this age group, postmenopausal bleeding is a concerning symptom.

References

- [1] Thoms SL, Ellertson C: Nausea or natural and health: should monthly menstruation be option for women? *Lancet*, 2000;355:922-4
- [2] Brenner PF. Differential diagnosis of AUB. *Am J Obstet Gynecol*. 1996;175:766-769. doi: 10.1016/S0002-9378(96)80082-2.

- [3] ACOG Practice Bulletin: Clinical Management of Anovulatory Bleeding. Int J GynaecolObstet 2001; 72(3): 263-71.
- [4] Fraser IS, Critchley HO, Munro MG, et al. A process designed to lead to international agreement on terminologies and definitions used to describe abnormalities of menstrual bleeding. Fertil Steril 2007; 87:466.
- [5] Mohan S, Page LM, Higham JM. Diagnosis of abnormal uterine bleeding. Best Pract Res Clin Obstet Gynaecol 2007; 21:891.
- [6] Van Dongen H, de Kroon CD, Jacobi CE, et al. Diagnostic hysteroscopy in abnormal uterine bleeding: a systematic review and meta-analysis. BJOG 2007; 114:664.
- [7] Khan S, Hameed S, Umber 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] Nadia Ghani, Aida Abdulrazak, Ehsan Abdullah, *et al* : Abnormal uterine bleeding : histopathological study. Diyala Journal Medicine.2013; 1(4): 55-60.
- [10] Layla S Abdullah, Nabeel S Bondagji, *et al*: Bahrain Med Bull.2011; 33(4): 1-7.
- [11] Bhoomika Dadhania, guarvia Dhruva, Amit Agravat, *et al*: Histopathological study of endometrium in dysfunctional uterine bleeding. Int J Res Med.2013; 2(1):20-24.
- [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] 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.
- [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.