

Original Article

Correlation of Clinical Presentation with Sonographic Findings and Histopathological Examination of Hysterectomy Specimens in Perimenopausal Patients with Abnormal Uterine Bleeding

Mohsana Saeed Zia¹, Shafaq Hanif², Murawat Shaheen³, Nosheena Shabir⁴

¹Assistant Professor, ²Professor, ³Classified gynaecologist, ⁴Assistant Professor & HoD,

¹⁻³Department of Gynaecology & Obstetrics Azad Jammu & Kashmir Medical College/

Abbas institute of Medical Sciences, ⁴Sheikh Khalifa Bin Zayed Al Nahyan Hospital / AK CMH Muzaffrabad AJK

Correspondence: Dr. Mohsana Saeed Zia

Department of Gynaecology & Obstetrics, AJ&K Medical College

mohsanasaheed@gmail.com

Abstract

Objective: To determine the correlation of clinical presentation in perimenopausal abnormal uterine bleeding with pelvic ultrasonographic findings and histo-pathological examination of hysterectomy specimens on the basis of PALM part of FIGO classification of abnormal uterine bleeding.

Methodology: This cross sectional descriptive type of study was conducted in Obstetrics & Gynaecology department AIMS from August 2014 till May 2018, among perimenopausal women who underwent hysterectomy for abnormal uterine bleeding. The data included clinical presentations, pelvic ultra-sonographic findings and reports of hysterectomy specimens in addition to demographic variables like age, parity.

Results: Among 100 numbers of cases, 68% (68) patients were between 40 and 45 years of age. Heavy menstrual bleeding was the predominant clinical presentation. The 45% (45) cases were diagnosed as fibroid uterus by pelvic ultrasonography followed by thickened endometrium of 25% (25). Histopathological reports of specimens showed 45% (45) fibromyoma followed by fibroid with endometrial hyperplasia 15% (15). There is +ve relationship between USG and clinical diagnosis i.e., ($r = .276$) and also significant as the P value is < 0.05 . It is also observed that there is less correlation between clinical diagnosis and histopathology.

Conclusion: Among hysterectomized cases, uterine fibroid was the leading cause of abnormal uterine bleeding and radiological, pathological evaluation well correlated with clinical diagnosis to diagnose fibroid.

Key words: Abnormal uterine bleeding, histopathology, perimenopausal women, ultrasonography.

Cite this article as: Zia MS, Hanif S, Shaheen M, Shabir N. Correlation of Clinical Presentation with Sonographic Findings and Histopathological Examination of Hysterectomy Specimens in Perimenopausal Patients with Abnormal Uterine Bleeding. J Soc Obstet Gynaecol Pak. 2021; 11(3):176-180.

Introduction

Menstruation plays a pivotal role in every women's healthy reproductive life. It is a physiological dynamical cyclical process starts from menarche to menopause in women's whole reproductive life.¹ Endometrium, an active segment of menstrual cycle in female reproductive health system dynamically respond to various physiological and pathological stimulus. The endometrial glands and stroma go through many phasic changes like proliferation, secretion, differentiation and breakdown of endometrial tissues under continuous influence of indigenous hormones.¹ "Normal menstruation is defined as the

bleeding under influence of with drawl of progesterone from secretory endometrium which is post ovulatory characterized by stromal and glandular breakdown and shedding with duration not exceeding five days in regular 28 days cycle. So, any deviating vaginal bleeding not following the normal menstrual cycle bleeding is pathological and is called abnormal uterine bleeding.²

Abnormal uterine bleeding (AUB), an important healthcare problem, is subjected to the uterine disease processes ranging from acute as well as chronic inflammatory changes, benign neoplastic and malignant conditions.

AUB is defined as vaginal bleeding that is erratic in

Authorship Contribution: ^{1,2}Substantial contributions to the conception or design of the work, acquisition, analysis, or interpretation of data for the work, design, data collection and analysis of the work. ^{3,4} Active participation in active methodology

Funding Source: none

Conflict of Interest: none

Received: Feb 12, 2021

Accepted: Sept 11, 2021

amount, regularity, frequency or duration and occurs in absence of pregnancy, including cyclical and a cyclical heavy menstrual bleeding, inter-menstrual bleeding, acyclical and infrequent menstrual bleeding.^{2,3} Among reproductive age, AUB mostly occurs in peri-menopausal age. WHO defines peri-menopause as the period 2-8 years preceding menopause and one year after the final menses.

For categorization of possible etiologies behind AUB, FIGO has designed PALM-COEIN classification system, which is universally accepted system of nomenclature and classification, is being used worldwide to diagnose and treat AUB as well as for research purpose.² The PALM and COEIN are two groups which are discrete in their entities, because former has structural components which can be diagnosed through imaging and histopathological investigations, but later has nonstructural entities not clearly defined by imaging or histopathology. Many patients with AUB were suspected to have more than one etiologies, but there was no definite system to classify them, that's why, this system was designed.² AUB, a crippling situation, has substantial deleterious effects on socioeconomic and every aspect of female's life, so thorough evaluation of the patient is required in order to exclude serious pathology like malignancies of genital tract along with individualization for proper diagnosis and treatment.⁸

Socio-economic factors play an important role in managing any patient particularly in Pakistan as it is a developing country with a compromised health system, so, it is a big challenge for a clinician to make a definite diagnosis before proceeding to complete solution keeping a low threshold for targeted investigations after structured history and relevant examination. Financial burden due to over use of investigations, over or under treatment of patients with AUB are the problems.⁹ Various radiological imaging modalities are helpful in making certain diagnosis before embarking on treatment. One of the easily available, cheap, non-invasive and relatively sensitive imaging technique is the use of ultrasonography either trans-abdominal or trans-vaginal (in difficult cases) giving an estimate of endometrial thickness, its regularity, endometrial polyp, detail of fibroid and some features of Adenomyosis⁵. The evaluation of the endometrium can be done with hysteroscopy and in a compromised setup with sonohysterography in cases of endometrial polyp or submucosal fibroid.¹⁴

The manifestations of various disease patterns can be detected by histological variations of Endometrium, taking into account the age of the woman, the phase of her menstrual cycles.⁸

Despite several available treatment options for AUB, surgical intervention and particularly hysterectomy is still the commonest gynaecological surgery performed in the world to date due to a more satisfaction rate of patient.⁸

The rationale of the study was that by knowing the spectrum of perimenopausal abnormal uterine bleeding in patients planned for hysterectomies and correlating them with radiological imaging and histopathological findings we can reduce the burden on the health system by keeping the investigations list short and provide better treatment options after confirming diagnosis.

The primary objectives of this study was to correlate the clinical evaluation with ultrasonography and histopathology of uterine specimen after hysterectomy by using PALM category of FIGO classification for abnormal uterine bleeding.

Methodology

This study was carried out in the department of obstetrics and gynaecology of Abbas Institute of medical sciences, a tertiary care, teaching hospital affiliated with Azad Jammu & Kashmir medical college and postgraduate trainee institute in Muzaffarabad, Azad Jammu and Kashmir, after approval from the research ethical committee of the respective institute.

In this cross-sectional study, 100 cases (meeting inclusion criteria) were recruited after approval of synopsis during a period of 3 years and 9 months from August 2014 till May 2018. Informed. Patients of perimenopausal age group (35 to 55) with abnormal uterine bleeding were included for the study after clinical examination, radiological imaging (pelvic ultrasonography), endometrial biopsy, thyroid hormone profile and planned for hysterectomy. Afterward their histopathologies were followed for the desired study. Hysterectomies done for obstetrical hemorrhage and patients with coagulopathy and endocrinal pathology were excluded.

The 100 cases meeting inclusion criteria were selected from OPD of obstetrics and gynaecology through non-probability convenient technique after formal consent. We analyzed these women by recording their age, parity, menstrual detailed history and bimanual

examination to make clinical diagnosis. Pelvic ultrasonographic assessment was done on all of these cases and noted the findings regarding endometrial thickness, texture myometrial texture and growth. After histopathology report of hysterectomies, findings of endometrium and myometrium were gathered.

After collecting all the information, all the data was analyzed on SPSS version 22. Categorical variables were summarized in percentages. Continuous data was described as means and medians. Pearson correlation was done to correlate clinical presentation, pelvic uterine ultrasonography and histopathology of endometrium and myometrium in uterine specimens.

Results

The total number of patients found to have genital tract Overall the mean age was 44 years with standard deviation of 3.77 years. Out of the total cases, 58% (58) of patients fall in age group of 40 to 45 years. Study showed maximum number of patients having parity between 3 to 5. The common presenting complaints were heavy menstrual bleeding and irregular heavy menstrual bleeding.

Clinical diagnosis was based on clinical symptoms and clinical examination. According to the results showing in table I, maximum number of clinical-diagnosis is unclassified AUB i.e, 39% (39), then comes fibroid uterus 32%(32) and then adenomyosis 13%.¹³

After clinical evaluation, the results of trans-pelvic ultrasonography showed maximum number of patients with findings of fibroid 45% (45) then came endometrium thickness >10mm 25% (25) as showing in table II.

Table I: Frequency of clinical diagnosis

Clinical Diagnosis	N	%
Unclassified AUB	39	39
Fibroid	32	32
Adenomyosis	13	13
Pelvic inflammatory disease	14	14
Endometrial polyp	2	2

Table II: Ultrasonographical diagnosis

Pelvic Ultrasonographic diagnosis on the basis of findings	N	%
ET>10	25	25
ET<10	4	4
Polyp	1	1
ET irregular	8	8
Fibroid	45	45
Bulk uterus	14	14
Adenomyosis	3	3

Table III is showing results of final diagnosis made on histopathology of hysterectomy specimen showed results with maximum number of diagnosis with fibroid uterus 45% (45), then fibroid with endometrial hyperplasia 15% (15) followed by only endometrial hyperplasia 12%(12) and adenomyosis.

Pearson correlation was applied to the data of clinical diagnosis, ultrasonography and histopathology.

The table IV shows that there is +ve relationship between clinical diagnosis and pelvic ultrasonography i.e., ($r = .276$) and also significant as the P value is < 0.05 . It is also observed that there is negative relationship between clinical diagnosis and endometrial histopathology as $r = -.292$ and the P value is < 0.05 , whereas, there is +ve relationship of clinical diagnosis with histopathology of myometrium because value of pearson correlation coefficient is .572 and P value is < 0.05 .

Table III: Histo-pathological diagnosis

Histopathological diagnosis	N	%
Fibroid	45	45
Endometrial hyperplasia with fibroid	15	15
Endometrial hyperplasia	12	12
Adenomyosis with endometrial hyperplasia	8	8
Adenomyosis	7	7
Unclassified AUB	4	4
Endometrial polyp	4	4
Adenomyosis with chronic PID	3	3
Atypical endometrial hyperplasia	3	3
Chronic PID	1	1
CA endometrium	1	1
Adenomyosis with endometriosis	1	1

Table IV: Pearson correlation

	Pearson correlation coefficient (r)	P-Value
Between clinical diagnosis and pelvic ultrasonography	.276	<0.001
Between clinical diagnosis and histo-pathological findings of endometrium	-.292	>0.001
Between clinical diagnosis and histopathology of myometrium	.572	<0.001

Discussion

The perimenopausal AUB significantly impacting quality of female life and imposing financial burden on family and must be ensured about implementation of intervention should be focused on quality of life

improvement rather than only pivoting on blood loss as emphasized in NICE guidelines 2018.⁸

The mean age of abnormal uterine bleeding underwent hysterectomy was 44 years in this study. Maximum patients were seen with parity >3. Similar results were found in study of Alakanande et al 2015 at department of Obstetric & Gynaecology of Gauhati medical college and hospital.⁷ Sawke et al 2015 reported in another study most of their participants underwent hysterectomy with heavy menstrual bleeding were from age group of 41-51 years also endorsed by another study by shaheen et al.⁶

The etiologies of abnormal uterine bleeding cannot be easily classified. The Menstrual Disorder working group of the International Federation of Gynecology and Obstetrics proposed a classification system and standardized terminology for the etiologies of the symptoms of AUB in non-gravid uterus, which has been approved by the International Federation of Gynaecology and Obstetrics executive board and supported by the American college of Obstetricians and Gynaecologists. With this system, the attributed etiologies of abnormal uterine bleeding are conveniently categorized as uterine structural abnormalities and nominated following the acronym PALM-COEIN: Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia, coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic and Not otherwise classified.^{2,3} This system guides researches as defining correlation of different aspects of its parameters with investigation tools and treatment modalities as cited by Devanish Mishra (2017) in his study and also shown in other studies.^{4, 15}

The PALM part of FIGO classification of abnormal uterine bleeding was used in this study. This study concluded that the most common clinical diagnosis based on clinical evaluation is found to be unclassified AUB 39% (39), followed by fibroid 32% (32) and suspicion of adenomyosis was found in 13 % (13).

On pelvic ultrasonography, fibroid is the most common diagnosis in 45% (45) followed by endometrium thickness >10mm was found in 25% (25) of cases and bulky uterus attributed to 14% (14) of cases but suspicion of adenomyosis was found in only 3 % (3) of cases.

Our study concluded the most common diagnosis on histopathology is fibroid almost found in 45% (45) of cases, 15% of histopathology reports showed leiomyoma with proliferative type of endometrium

hyperplasia increasing percentage of both fibroid and endometrial pathology. 12% (12) of patients were diagnosed with isolated endometrial hyperplasia incidence is high because some of the patients could not afford hormonal profile before hysterectomy. Adenomyosis was attributed to 7% (7) of cases on histopathology report and dual pathology of adenomyosis with endometrial hyperplasia was found in 8% (8) of cases. Whereas endometrial polyp were found in 4% (4) of cases. Sajjad et al. concluded in his study that 39% cases of leiomyomas, followed by adenomyosis in 19% cases. 5% cases showed dual pathology consisting of both leiomyomas and adenomyosis.¹² This study consisted with our study. Sawke et al showed dual pathology consisting of both adenomyosis with endometrial hyperplasia (11%) and 6% cases of leiomyoma with adenomyosis in his study Histopathology findings in patients presenting with menorrhagia: A study of 100 hysterectomy specimen.⁶

This study concluded that there is positive correlation between clinical diagnosis and pelvic ultrasonography for evaluation PALM part of FIGO classification of abnormal uterine bleeding as correlation coefficient $r = .276$ and P value is < 0.001 . But there is also positive correlation between clinical diagnosis and histopathology of myometrium as lesions can be evaluated on clinical examination as shown its correlation coefficient $r = .572$ ($P = < 0.001$) but there is negative correlation of clinical diagnosis with histopathology of endometrium as here is $r = -.292$. This might be due to very minor changes on physical examination after endometrial pathology and can only be found with detailed microscopic examination. In PALM arm of FIGO classification for abnormal uterine bleeding maximum percentage belong to leiomyoma, adenomyosis, endometrial hyperplasia and dual pathologies of aforementioned factors and there correlation with clinical diagnosis is significant in cases of fibroids and adenomyosis but reduced with endometrial pathologies. As shown in study by Mishra et al where he found L most common in AUB and AL –AUB at second number and also same found in other studies^{4,16,17, 18}.

Conclusion

➤ The most common indication for hysterectomy for AUB in our study was found to be fibroid followed by endometrial hyperplasia, Adenomyosis and dual pathology.

- The mostly hysterectomies were done in age group of 40 to 45 years and parity more than 3.
- Tangible lesions can be detected on clinical evaluation and imaging, but incorporeal lesions are even missed on imaging.
- There is need of 3D evaluation of uterine corpus with sonohysteroscopy.
- This difference is due to many factors:
 - Clinical examination sometimes cannot harvest the minor changes attributed to endometrial pathologies.
 - Clinical examination and ultrasonography both has not specific findings in case of adenomyosis.

References

1. Ledges WL. The Menstrual cycle. In: Edmonds DK, Lees C, Bourne T.(eds.) *Dewhurst's Textbook of Obstetrics&Gynaecology*. UK: John Wiley & Sons Ltd; 2018: 623-631.
2. Munro MG, Critchley HO, Broder MS, Fraser IS; FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in non gravid women of reproductive age. FIGO working group on Menstrual disorders. *Intl J Gynaecol Obstet*, 2011; 113: 3-13.
3. Diagnosis of abnormal uterine bleeding in reproductive-aged women. Practice Bulletin No. 128. American college of Obstetrician and Gynaecologist. *Obstet Gynaecol.*, 2012; 120: 197-206.
4. Mishra D, Sultan S; FIGO'S PALM-COEIN classification of Abnormal uterine bleeding: A Clinico-histopathological correlation in Indian Setting. *The Journal of Obstetric and Gynecology of India* 2017;67, 119-125.
5. Neena Y, Honey B; Clinico-Pathological correlation of hysterectomy specimens for abnormal uterine bleeding in rural area. *Journal of Evolution of Medical and Dental Sciences* 2013; Vol 2, Issue39, September 30, Page: 7506-7512.
6. Sawke NG, Sawke GK, J Hanisha; Histopathology findings in patients presenting with menorrhagia: A study of 100 hysterectomy specimen. *J MidlifeHealth*, 2015 Oct-Dec;6(4):160-163.
7. Alakananda D, Das K K, CN M; A Study on correlation of clinical and ultrasound Diagnosis with Histopathology in cases of Hysterectomy done for benign indications. *J IJSR.*, November 2017; 6(11):755-758.
8. National Institute for Health and Care Excellence (NICE), *Heavy menstrual bleeding: assessment and management: NICE Guideline [NG88]*. 2018. Available from: <https://www.nice.org.uk/guidance/ng88>.
9. Deeba F, Shaista, Khan B. Histological pattern of endometrial samples in postmenopausal women with abnormal uterine bleeding. *J Ayub Med Coll Abbottabad* 2016; 28: 721-4
10. Mutakha GS, Mwaliko E, Kirwa P (2020) Clinical bleeding patterns and management techniques of abnormal uterine bleeding at a teaching and referral hospital in Western Kenya. *PLoS ONE*, dec 2020;15(12): e0243166. Available from: <https://doi.org/10.1371/journal.pone.0243166>
11. Kareisat B, Al Rwabdeh S, Duqoum W, Al Qudah M; Frequency of hysterectomy in histopathological specimen at two jordanian military hospital. *JMS*.2011;18:76-9
12. Sajjad M, Iltaf S, Qayyum S; Pathological findings in hysterectomy specimens of patients presenting with menorrhagia in different age group. *Ann Pak Inst Med Sci*. 2011; 7: 160-2. [Google scholar].
13. Whitaker L, Critchley HO. Abnormal uterine bleeding. *Best Pract Clin Obstet Gynaecol* 2016; 34: 54-65
14. Khan F, Jamaat S, Jaroudi DA. Saline infusion sonohysteroscopy versus hysteroscopy for uterine cavity evaluation. *Annals Of Saudi Medicine*. 2011; 31(4): <https://doi.org/10.4103/0256-4947.83213>
15. Ansari A, Arooj U. Study of causes behind abnormal uterine bleeding according to PALM-COEIN classification at a tertiary care hospital. *JPMA*. 2020; 70(1).
16. Parveen S, Ansari A, Naheed F, Sultana A. Pattern of lesion in hysterectomy specimens and clinical correlation. *PJMHS* 2014; 8: 465-8
17. Sajitha K, Padma SK, Shetty KJ, Kishanprasad HL, Permi HS, Hedgi P. Study of histopathological pattern of endometrium in abnormal uterine bleeding. *Chrismed Journal of Health and Research*. 2014; 1(2): 76-81
18. Bashir H, Bhat N, Khuroo MS, Reshi R, Nazeir MJ, Qureshi MJ. Clinicopathological study of endometrium in patients with abnormal uterine bleeding. *IJCRR*. Nov 2015;7(22):67-73.