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Study of correlation between clinical findings in cases of abnormal uterine bleeding with ultrasound and histopathology report

[1]Dr. Aditi Phulpagar, Additional Associate Professor, Department of Obstetrics & Gynecology, Seth G.S. Medical College and KEM Hospital, Mumbai.

[2]Dr. Ankita Mathur, Assistant Professor, Department of Obstetrics & Gynecology, Seth G.S. Medical College and KEM Hospital, Mumbai.

[3]Dr. Harshal Rawtani, House Officer, Department of Obstetrics & Gynecology, Seth G.S. Medical College and KEM Hospital, Mumbai.

[4]Dr. Sonal Karpe, Assistant Professor, Dept. of Pulmonary Medicine, Seth G.S Medical College, KEM hospital, Mumbai.

Corresponding Author: Dr. Aditi Phulpagar, Additional Associate Professor, Department of Obstetrics & Gynecology, Seth G.S. Medical College and KEM Hospital, Mumbai.

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Abstract

Background: Abnormal uterine bleeding (AUB) is a very common, challenging Gynaecological problem in all age group women, affects up to 30% of females in the society. Diagnosis was made by clinical examination, ultrasonography (USG) and confirmed by histopathology. The present study was undertaken to determine the correlation between clinical findings in cases of AUB with ultrasound and histopathology reports at a tertiary healthcare setup.

Method: A total 100 cases of AUB who underwent endometrial biopsy in the Department of Obstetrics and Gynaecology, at Tertiary Care, Hospital was included in the study. A thorough history was taken and clinical examination, ultrasonographic evaluation was done. Endometrial biopsy was preserved in 10% formalin saline and sent histopathological examination and reports were collected. The clinical findings correlated with ultrasound and histopathology findings.

Results: Among 100 cases, 51% were between 41 to 50 years of age. Postmenopausal bleeding was the predominant clinical presentation (38%) and most of the patients presented after symptoms of 1-5 months (54%). Clinically, 63% patients were diagnosed with fibroid and 26% adenomyosis. On USG, most of the patients (66%) had fibroid uterus. Endometrial biopsy showed proliferative (22%) and weak proliferative endometrium (20%). Fibroid was the most common finding (67%) on histopathology. There was positive ($r = 0.278$) and significant ($p<0.05$) relationship between clinical diagnosis and USG. It is also observed that there was less correlation ($r=0.575$), between clinical diagnosis and histopathology, ($p<0.05$).

Conclusion: In the present study, uterine fibroid was the leading cause of AUB, where clinical findings correlate well with ultrasound and histopathology report, otherwise in most cases combined approach along with endometrial biopsy is required.

Keywords: Abnormal uterine bleeding; Ultrasonography; Histopathology; Postmenopausal; Fibroid; Endometrium; Correlation

Introduction

Abnormal uterine bleeding is an important clinical phenomenon that affects 14-25 percent of the reproductive age group globally [1], making it one of the most common complaints presented to a Gynaecologist, particularly among the perimenopausal age group. According to India's official health portal [2], AUB affects 17.9% of the population. The majority of instances occur between menarche and menopause, when oestrogen builds up during anovulatory cycles, leading the endometrium to grow and shed later owing to anovulation.

According to Fraser et. al. AUB is now only to be described based on the 4 approved terms/ components: Regularity or periodicity as regular, irregular or absent; duration of flow as prolonged, normal or shortened; frequency as frequent or infrequent; and lastly volume of blood loss as heavy, normal or light. Menstrual disorders like menorrhagia and dysfunctional uterine bleeding (DUB) are obsolete and no longer to be used [3].

However, AUB is an umbrella term for a variety of symptoms, including oligo menorrhea, poly menorrhea, menorrhagia, menometrorrhagia, metrorrhagia, mid-cycle spotting, and atypical acute vaginal bleeding [4]. The International Federation of Gynecology and Obstetrics (FIGO) introduced the PALM-COEIN classification for AUB so as to have a universal system in place and avoid any confusion in reporting and analysis of data. The causes are divided into structural causes PALM vs nonstructural causes COEIN [5,6].

Radiological examination and endometrial sampling are the mainstays of the diagnostic workup for anybody experiencing AUB. An ultrasound (transvaginal > transabdominal [7] is used in the radiological workup to rule out organic ovarian and uterine causes of AUB and to determine the patient's endometrial status. Endometrial layer thickness on ultra sound has no relation to disease in premeno pausal women [7], but for high-risk reproductive age groups, such as peri and postmenopausal women, an endometrial biopsy remains the gold standard for early detection abnormal endometrial hyperplasia or even endometrial cancer [8].

Dilatation and curettage (D & C), which was once considered a gold standard, has its drawbacks like being a blind procedure and has a chance of missing up to 10% of the disease [8,9]. A thorough complete history and physical examination, as well as ultra-sonographic / radio logical findings and endo metrial sample with histo pathological reporting, is a cost-effective and reliable technique for management of AUB. Present study aims to correlate the clinical presentation of patients with AUB with their sonographic findings and histo pathological examination reports at a tertiary healthcare setup.

Materials and Methods

This prospective observational study was carried out comprising total 100 cases of AUB who underwent endometrial biopsy in the Department of Obstetrics and Gynaecology, at Tertiary Care Hospital. All admitted patients with symptoms of heavy menstrual bleeding, heavy prolonged menstrual bleeding, prolonged menstrual bleeding, inter menstrual bleeding and postmenopausal bleeding were included. The exclusion

criteria of patients were a) All AUB patients who didn't undergo endometrial biopsy, b) patients who were managed by hormonal therapy or conservatively without successive hysterectomy, c) patients who underwent endometrial biopsy for causes other than AUB.

After obtaining informed consent from selected patients, the relevant data such as age, parity, menstrual symptoms (past and present menstrual history), duration of symptoms and medical history was taken followed by general, systemic and Gynaecological examination and other associated findings in clinical examination were recorded. Uterine size was noted in bimanual examination. Investigations including CBC, coagulation profile, thyroid function test, LFT, RFT were done.

All these women underwent ultrasonographic evaluation for uterus with endometrial thickness and bilateral adnexa. Endometrial biopsy was preserved in 10% formalin saline and sent histopathological examination and reports were collected. The clinical findings and ultrasonographic findings were correlated. Histopathologic report of specimens was correlated with clinical findings.

Statistical analysis

Data was entered into Microsoft excel data sheet and was analysed using SPSS 22 version software. Categorical data was represented in the form of frequencies and proportions. Continuous data was described as means and medians. Pearson correlation was done to correlate clinical presentation, ultrasonographic and histopathological findings. p value of <0.05 was considered as statistically significant.

Results

Total 100 women having abnormal uterine bleeding were enrolled in study. Patient's age ranged from 37-63 years; mean age of patients was 47.89±6.94 years. Out of 100 mostly patients belonged to 41-50 years age group (51%), multiparous (81%), and in menopausal group (45%) as shown in table 1.

Table 1: Demographic characteristics of AUB patients

Demographic profile		No. of patients	Percentage
Age group (Years)	<40	18	18%
	41-50	51	51%
	51-60	28	28%
	>60	03	3%
Parity	Nulliparous	04	4%
	1	15	15%
	2	38	38%
	3	21	21%
	≥4	22	22%
Menstrual status	Premenopausal	17	17%
	Perimenopausal	38	38%
	Menopausal	45	45%

Most common clinical presentation was postmenopausal bleeding (PmB) (38%), followed by heavy prolonged menstrual bleeding (HPMB) in 20% and heavy menstrual bleeding (HMB) in 16%. Mostly patients presented after symptoms of 1-5 months (54%) followed by 6-10 months (43%), (Table 2).

Table 2: Clinical parameters of AUB patients

Variables		No. of patients	Percentage
Chief complaints	HMB	16	16%
	HPMB	20	20%
	IMB	12	12%
	PMB	14	14%
	PmB	38	38%
Duration of Complaint (Months)	1-5	54	54%
	6-10	43	43%
	>10	03	3%

HMB- Heavy Menstrual Bleeding; HPMB- Heavy Prolonged Menstrual Bleeding; PMB-Prolonged Menstrual Bleeding; IMB- Inter Menstrual Bleeding; PmB- Postmenopausal bleeding

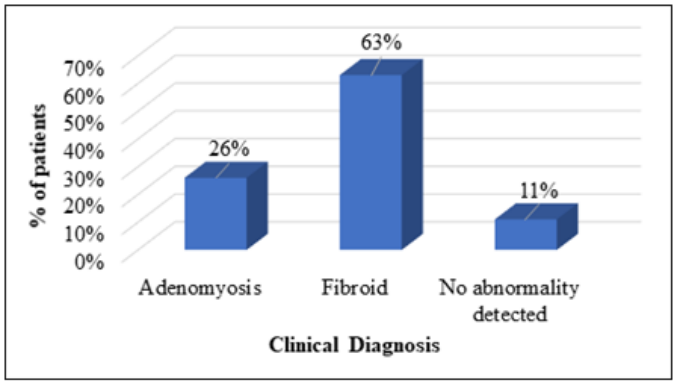
Out of 100 cases, maximum numbers of cases were with uterine size between 14-16 weeks (26%), followed by size of 10-12 weeks (21%). as shown in table 3. Uterine size might have increased due to associated structural abnormality in most cases.

Table 3: Profile of uterus size among the cases

Uterus size (Weeks)	No. of patients	Percentage
6-8	12	12%
8-10	10	10%
10-12	21	21%
12-14	19	19%
14-16	26	26%
>16	12	12%

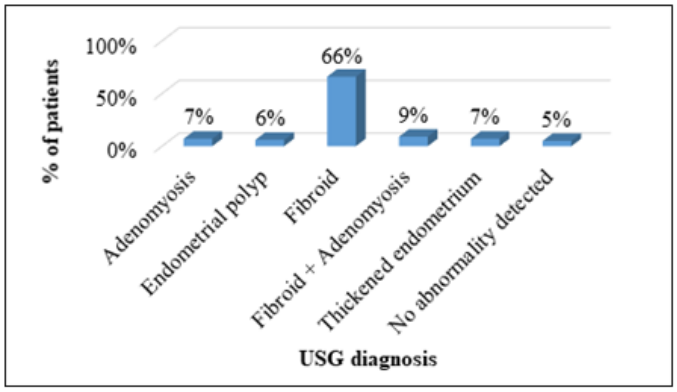
Clinically, 63% of patients were diagnosed to fibroid and 26% had adenomyosis as depicted in figure 1.

Figure 1: Clinical diagnosis



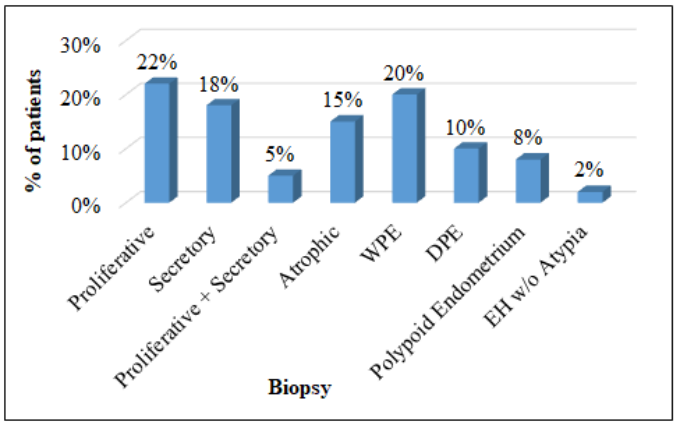
Ultrasonography findings are depicted in figure 2. On USG, most of the patients (66%) were diagnosed with fibroid, whereas 9% patients had fibroid with adenomyosis and 7% had adenomyosis alone.

Figure 2: USG diagnosis distribution among subjects



Endometrial biopsy showed that the majority of patients (22%) had proliferative endometrium followed by weak proliferative endometrium in 20%, secretory in 18% and atrophic in 15% of cases as shown in figure 3. Only 2% of cases had endometrial hyperplasia without atypia and no case was detected with atypia or carcinoma.

Figure 3: Endometrial biopsy distribution among subjects



WPE-weak proliferative endometrium; DPE-Disordered Proliferative endometrium and EH-endometrial hyperplasia. Fibroid was the most common finding (67%) on histopathology followed by adenomyosis (10%) as depicted in figure 4.

Figure 4: Histopathological diagnosis

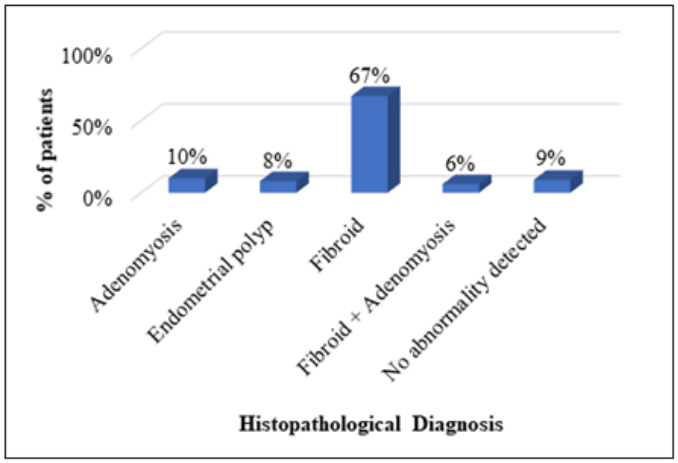


Table 4 shows that there was positive relationship between clinical diagnosis and pelvic ultrasonography i.e., (r =0.278) and also significant as the P value was <0.05. It is also observed that there was less positive relationship of clinical diagnosis with histopathological findings because value of Pearson correlation coefficient was 0.575 and P value was <0.05.

Table 4: Pearson correlation

Correlation	Pearson correlation coefficient (r)	P-Value
Between clinical diagnosis and pelvic ultrasonography	0.278	<0.05
Between clinical diagnosis and histo-pathological findings	0.575	<0.05

Discussion

Abnormal uterine bleeding is the main reason, women are referred to gynecologists and accounts for two-thirds of all hysterectomies. Evaluation of patients with abnormal uterine bleeding and identifying those with AUB is achieved with combination of the following: history, physical examination, pelvic examination, ultrasound and histopathological evaluation. AUB in women of menopausal transition age group is associated with endometrial carcinoma in 10% of patients [10], so evaluation of a woman's risk factors for endometrial hyperplasia or carcinoma is recommended. Though endometrial sampling can be done by endometrial biopsy, endometrial aspiration and hysteroscopy, hysteroscopic guided biopsy is considered gold standard. All these investigations are only the screening methods and provide a rough idea about the underlying cause. Further confirmation is provided by the histopathological examination of the tissue sample [11].

Total 100 AUB cases were included in the study, of them maximum 51% cases belong to 5th decade i.e., 41-50 years age group which is comparable to previous studies [12-14]. The increased incidence of AUB in this age group maybe because of initiation of menopause due to which the number of ovarian follicles decreases, and there was increased resistance to the stimulation of gonadotropin hormone that resulted in declining the level of estrogen. This event did not help the endometrium to grow further [15-16]. The mean age of patients was 47.89±6.94 years which is similar to the study done by Gupta et al [17] and Desai et al [18]. However, there was a little difference in the study conducted by Kaur et al [19], range was 46–65 years with mean 50.80±4.06 years. This was found because of the reason that they had included only patients of postmenopausal bleeding and sample size of 70 which is a small amount as compared to the prevalence of AUB in India. In the present study, 4% of patients were nulliparous, majority were in para 2. Mean parity was 2.42±1.26. Almost similar results were obtained in the studies by Mohammad et al [20] and Lee NC et al [21] found a mean parity of 3. In present study AUB was more commonly related to structural cause i.e.

fibroid and adenomyosis and menopausal women were most common age group. Most common clinical presentation was postmenopausal bleeding (38%), followed by heavy prolonged menstrual bleeding in 20% and heavy menstrual bleeding in 16%. Mostly patients had presented after symptoms of 1-5 months (54%) followed by 6-10 months (43%).

Clinically, 63% were diagnosed to fibroid and 26% had adenomyosis. Radhika K et al [12] showed fibroid uterus found in 46.67% cases followed by adenomyosis in 23.33% cases. Rizvi et al [22] showed fibroid uterus in 41.46% cases and adenomyosis in 46.36% cases. Begum et al [23] found that fibroid uterus was diagnosed clinically in 54.1% cases. Clinical examination sometimes cannot harvest the minor changes attributed to endometrial pathologies. Therefore, transvaginal ultrasound should be offered as the first line of imaging as it is relatively cheap, minimally invasive and acceptable method to detect structural causes for bleeding and endometrial thickness. On ultrasound, most common diagnosis in present study was fibroid uterus (66%) which is comparable with the Radhika K et al [12] and Zia MS et al [24] study. In Gupta et al, out of 100 cases, 63 cases who were diagnosed to have fibroid uterus on ultrasonography [17]

Endometrial biopsy showed that 22% of patients had proliferative phase and 20% had weak proliferative endometrium. In Radhika K et al [12] study proliferative phase and hyperplastic changes together seen 44.44% cases. Secretory endometrium was found in 18% cases in current study comparable to study by Jairajpuri et al [25]. Variation of secretory endometrium ranging from 14% to 63.5% [21, 23]. Atrophic endometrium was found in 15% cases which is comparable to other studies [26, 27].

Fibroid was the most common finding (67%) on histopathology followed by cases having adenomyosis (10%). This finding is in accordance to previous studies [17, 28] and all these studies shows most common histopathological finding as fibroid.

In current study, clinical, radiological and pathological evaluation correlated well to diagnose fibroids, however clinically as well as USG proved to be of little help in diagnosing adenomyosis, which is similar with other studies [17, 28]. The clinical diagnosis was confirmed by ultrasonography. Ultrasound detected fibroid in 66%, of them 63% cases were suspected to have fibroid on clinical examination. Final diagnosis was given by histopathology which showed fibroid uterus in 67% of cases. Only 26 cases of adenomyosis were found clinically but on ultrasound 7 cases showed adenomyosis and 10 cases confirmed to have adenomyosis on histopathology. This shows very poor correlation of adenomyosis. These findings are correlated with the study done by Bhosle A et al [28]. In study by Neena Y and Honey B, there was a very high correlation when the clinical diagnosis was fibroid same as present study [29].

Conclusion

In present study, fibroid is the most common lesion on clinical, USG and histopathological examination and it was the leading cause of AUB. The clinical findings correlate well with ultrasound and histopathology report, otherwise in most cases combined approach along with endometrial biopsy is required. However clinically as well as USG proved to be of little help in diagnosing adenomyosis, histopathological diagnosis varies in relation to menstrual complaints, age, associated symptoms and endometrial thickness. Hence, the complete details have to be provided to the pathologist along with the samples. Clinical findings along with

ultrasonography and endometrial biopsy is required for managing patients with abnormal uterine bleeding prior to hysterectomy.

References

1. Whitaker L, Critchley HO. Abnormal uterine bleeding. Best Pract Res Clin Obstet Gyanaecol. 2016; 34:54-65.

2. https://www.nhp.gov.in/disease/gynaecology-and-obstetrics/abnormal-uterine-bleeding

3. Fraser IS, Critchley HO, Munro MG. Abnormal uterine bleeding: getting our terminology straight. Curr Opin Obstet Gynecol. 2007;19(6):591-5

4. Wren BG. Dysfunctional uterine bleeding. Aust Fam Physician. 1998 May;27(5):371-7. PMID: 9613001.

5. Munro MG, Critchley HO, Fraser IS. Group FMDW. The FIGO classification of causes of AUB in the reproductive years. Fertile Steril 2011; 95:2204–8,8e1–3.

6. Deneris A. PALM-COEIN Nomenclature for Abnormal Uterine Bleeding. J Midwifery Women's Health. 2016;61(3):376-9.

7. Vilos GA, Lefebvre G, Graves GR. Guidelines for the management of abnormal uterine bleeding. J Obstet Gynecol Can. 2001;23(8):704–9

8. Telner DE, Jakubovicz D. Approach to diagnosis and management of abnormal uterine bleeding. Can Fam Physician. 2007;53(1):58-64.

9. Pillai, Shobha S. "Sonographic and histopathological correlation and evaluation of endometrium in perimenopausal women with abnormal uterine bleeding." Int J Reprod Contracept Obstet Gynecol 3.1 (2014): 113-7.

10. Deanna E Telner, Difat Jakubovicz. Approach to diagnosis and management of AUB. Can Family Physician 2007; 53:58-64.

11. Wankhade A, Vagha S, Shukla S, Bhake A, Laishram S, Agrawal D, et al. To correlate histopathological changes and transvaginal sonography findings in the endometrium of patients with abnormal uterine bleeding. J Datta Meghe Inst Med Sci Univ 2019; 14:11-5.

12. Radhika K, Gomathy E. Clinico-pathological correlation of AUB patients undergoing hysterectomy in a rural tertiary care centre. Ind J Obstet Gynecol Res 2019;6(4):495-498.

13. Khatik N, Tiwari A, Yadav K. Histopathological evaluation of endometrium and its clinical correlation in patients of abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol 2020; 9:4169-75.

14. Shukla M, Fonseca MN, Kharat D, Tekale P. A study to correlate histopathological findings in patients with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol. 2017; 6:654-7.

15. Abdullah LS, Bondagji NS. Histopathological pattern of endometrial sampling performed for abnormal uterine bleeding. Bahrain Med Bull 2011;33(4):1-6.

16. Sharma S, Makaju R, Shrestha S, Shrestha A. Histopathological Findings of Endometrial Samples and its Correlation Between the Premenopausal and Postmenopausal Women in Abnormal Uterine Bleeding. Kathmandu Univ Med J 2014;48(4):275-8.

17. Gupta A, Rathore AM, Manaktala U, Rudingwa P. Evaluation and histopathological correlation of AUB in perimenopausal women. Int J Biomed Adv Res 2013; 4:509-13.

18. Desai K, Patole K, Kathaley M. Endometrial evaluation by histopathology in AUB in perimenopausal and postmenopausal patients. MVP J Med Sci 2014; 1:75-9.

19. Kaur H, Goyal L, Kaur P. To validate the use of trans vaginal sonography – A noninvasive tool as a screening method for patients with postmenopausal bleeding. Internet J Gynecol Obstet 2012; 16:1-5.

20. Mohammed N, Prejisha B. A study of correlation of etiological and histopathological findings in females undergoing hysterectomy for AUB in accordance with PALMCOIEN classification Paripex. Indian J Rese. 2014;3(11):76–77.

21. Lee NC, Dicker RC, Rubin G, Oray HW. Confirmation of the pre-operative diagnosis for hysterectomy. Am J Obstet Gynecol. 1984;150(3):283–287.

22. Rizvi G, Pandey H, Pant H, Chufal SS, Pant P. Histological correlation of adenomyosis and leiomyoma in hysterectomy specimens as the cause of AUB in women in different age groups in the Kumaon region: a retrospective study. J Midlife Health. 2013;(4):27–30.

23. Begum S, Khan S. Audit of leiomyoma uterus at Khyber Teaching Hospital, Peshawar. J Ayub med Coll. 2004;16(2):46–49.

24. Zia MS, Hanif S, Shaheen M,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 Gyanaecol Pak. 2021; 11(3):176-180.

25. Jairajpuri ZS, Rana S, Jetley S. Atypical uterine bleeding- A histopathological audit of endometrium. A study of 638 cases. Al Ameen J Med Sci. 2013;(6):21–22.

26. Mirza T, Akram S, Mirza A, Aziz S, Mirza T, Must Ansar T. Histopathological pattern of abnormal uterine bleeding in endometrial biopsies. J Basic Appl Sci. 2012; 8:114–117.

27. Patil SG, Bhute SB, Inamdar SA, Acharya NS, Shrivastava DS. Role of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathological correlation. J Gynecol Endoscopy Surg. 2009; 1:98–104.

28. Bhosle A, Fonseca M. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. Bombay Hosp J. 2010; 52:69–72.

29. Neena Y, Honey B; Clinico-Pathological correlation of hysterectomy specimens for AUB in rural area. Journal of Evolution of Medical and Dental Sciences 2013;2(39):7506-7512.