International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622

www.gynaecologyjournal.com
2022; 6(1): 99-102
Received: 19-11-2021
Accepted: 21-12-2021

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Study of clinical and pathological correlation of AUB patients undergoing hysterectomy

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DOI: https://doi.org/10.33545/gynae.2022.v6.i1b.1120

Abstract
Background: Abnormal uterine bleeding (AUB) is most common in the perimenopausal and postmenopausal age groups. FIGO's acronym (PALM-COEIN) describes the causes of AUB. Polyps, adenomyosis, leiomyoma, malignancy, hyperplasia, coagulopathy, Ovulatory dysfunction, endometrial, iatrogenic, and not yet classified are among them.
Aim: To determine the prevalence and distribution of various uterine pathologies in hysterectomy specimens as a function of age, parity, and clinical characteristics.
Methods: 500 women with AUB who are having a hysterectomy between December 2017 and November 2019 will be chosen for the study. All AUB patients undergoing hysterectomy were included in the study.
Results: In the present study, majority of patients were in the age group range of 41-50 years (37%) followed by 30% in the age group range of 31-40 years. Majority of patients were in the 2nd parity which constituted 58% and minimum number of cases (2%) in unmarried cases. HMB was seen (47.6%) followed by dysmenorrhoea (14%) and irregular bleeding (13.4%) cases. The most common diagnoses were fibroid uterus in 40% of cases, Adenomyosis in 17% of cases, both fibroid and Adenomyosis in 8.2% of cases, polyp in 5% of cases, normal uterus in 14.6 percent of cases, endometrial hyperplasia in 1.6 percent of cases, endometrial carcinoma in 1.2 percent of cases. The most common surgical approach is abdominal (66.2%), followed by vaginal (18.6%), and laparoscopically (15.2 percent). In 102 cases, complications were discovered (19.25 percent). Pyrexia in 28 instances (5.6%), abdominal distension in 17 cases (3.4%), wound dehiscence in 15 cases (3%), RTI in 11 cases (2.6%), and UTI in 13 cases are the most common complications (2.6 percent). Malaria, thrombophlebitis, urinary retention, and subsequent haemorrhage have all been reported in a small number of patients.
Conclusion: The majority of the patients were in the perimenopausal age bracket and were multiparous. HMB was a common AUB symptom. Leiomyoma was a common diagnosis. USG and histology confirmed the diagnosis. Proliferative endometrial patterns were common. Simple endometrial hyperplasia in perimenopausal women and complicated hyperplasia in postmenopausal women were the most common findings. In AUB patients, hysterectomy is still the only option.

Keywords: abnormal uterine bleeding, dysmenorrhea, heavy menstrual bleeding, hysterectomy

Introduction
The essence of womanhood, the uterus, is controlled by cyclical hormonal changes caused by alterations in the hypothalamus-pituitary-ovary axis [1]. All women of reproductive age have menstruation, which is cyclic uterine bleeding. Normal menstruation is defined as bleeding from the secretory endometrium that occurs during an ovulatory cycle that lasts no longer than seven days. Abnormal uterine bleeding is defined as any bleeding that does not meet these criteria [2, 3]. Bleeding is considered abnormal when the pattern is irregular or the length exceeds seven days. Abnormal uterine bleeding refers to any bleeding that does not meet these criteria. When the pattern of bleeding is irregular or the duration exceeds seven days, it is considered abnormal. Polyp, adenomyosis, leiomyoma, malignancy and hyperplasia, coagulopathy, Ovulatory dysfunction, endometrial, iatrogenic, and not yet classified are the causes of AUB, according to FIGO (2011)'s acronym (PALM-COEIN) [4, 5]. Menorrhagia, menorrhagia, dysmenorrhea, polymenorrhoea, intermenstrual bleeding, irregular bleeding, and postmenstrual bleeding are the most prevalent symptoms. Heavy Menstrual Bleeding takes the role of menorrhagia (HMB). Clinically, inquiry, and ultrasonography are used to treat AUB, although there may be a difference between clinical and sonological and histopathological diagnosis. The histology research and the final diagnosis were always in sync.

Medical management, minor surgeries such as D and C, ablative treatments, and finally hysterectomy are all options. Hysterectomy can be performed vaginally, abdominally, or laparoscopically, depending on the patient's condition, the size of the uterus, including mobility, the institution's resources, and the surgeon's experience.

Materials and Methods

500 women with AUB who are having a hysterectomy between December 2017 and November 2019 will be chosen for the study. All AUB patients undergoing hysterectomy were included in the study. All AUB patients not undergoing hysterectomy and all the hysterectomy causes other than AUB were excluded from the study. Heavy menstrual bleeding, dysmenorrhea, metrorrhagia, irregular bleeding, postmenopausal bleeding, and other symptoms were investigated in all AUB patients. Instances involving pregnancy were omitted from the study, and the remaining cases were investigated further. A complete medical history was collected, including the patient's age, parity, education, socioeconomic level, clinical symptoms, duration of symptoms, and blood loss. Information was also gathered on any gynaecological complaints, medical conditions, and previous hormonal or surgical treatment. A full history was taken, followed by a thorough physical examination that included a thorough general and systemic examination, and a tentative diagnosis was made. After that, all blood tests such as a complete blood count, renal function test, thyroid function test, bleeding time, and clotting time are performed. A Pap smear was also performed. A pelvic ultrasonographic examination was performed. Endometrial biopsies were kept in 10% formalin saline and forwarded for histological analysis and reporting. The cases where a hysterectomy was performed were saved and sent for histological evaluation. The reports were gathered, and a definitive diagnosis was arrived upon. Clinical and ultrasound diagnoses were compared to the final diagnosis. The study's data was examined with the help of proper statistical tools and techniques. To explore the pattern of distribution, exploratory data analysis using graphs and pie charts was performed.

Results

Table 1: Distribution based on age.

Age (Years)	No. of cases	Percentage
Less than 30	20	4%
31-40	150	30%
41-50	185	37%
51-60	95	19%
61-70	30	6%
Greater than 70	20	4%

Table 1 shows that the majority of patients were in the age group range of 41-50 years (37%).

Table 2: Distribution based on parity.

Parity	No. of cases	Percentage
Unmarried	10	2%
Nulliparous	26	5.2%
1	34	6.8%
2	290	58%
3	85	17%
4	35	7%
5	20	4%

Table 2 shows that majority of patients were in the 2nd parity which constituted 58%.

Table 3: Distribution based on symptoms.

Clinical Symptoms	No. of cases	Percentage
HMB	238	47.6%
Dysmenorrhea	70	14%
HMB & Dysmenorrhea	31	6.2%
HMB & Irregular bleeding	33	6.6%
Irregular bleeding	67	13.4%
Metrorrhagia	37	7.4%
Postmenopausal bleeding	24	4.8%

Table 3 shows that heavy menstrual bleeding was the most common symptom for hysterectomy which constituted 47.6%.

Table 4: Clinical Diagnosis.

Diagnosis	No. of cases	Percentage
Fibroid	205	41%
Adenomyosis	127	25.4%
Both	34	6.8%
Dysfunctional uterine bleeding	66	13.2%
Polyp	32	6.4%
Endo CA	24	4.8%
Cervical CA	12	2.4%

Table 4 shows that fibroid was the highest clinical diagnosis which constituted 41%.

Table 5: USG Diagnosis.

USG Diagnosis	No. of cases	Percentage
Fibroid	200	40%
Adenomyosis	85	17%
Both	41	8.2%
Polyp	25	5%
Normal	73	14.6%
Endo hyperplasia	8	1.6%
Cervical CA	6	1.2%
Ovarian Cyst	15	3%
Bulky uterus	17	3.4%
Atrophic organs	6	1.2%
Myohyperplasia	4	0.8%
Endo and Myohyperplasia	12	2.4%
Endometriosis	2	0.4%
Endo CA	6	1.2%

Table 5 shows that fibroid was the highest USG diagnosis which constituted 40%.

Table 6: Routes of operative procedures

Route	No. of cases	Percentage
Abdominal	331	66.2%
Vaginal	93	18.6%
Laparoscopy	76	15.2%

Table 6 shows that abdominal was the most common route of operating which constituted 66.2%.

Table 7: Complications of hysterectomy

Complications	No. of cases	Percentage
Wound Sepsis	15	3%
Abdominal Distension	17	3.4%
Pyrexia	28	5.6%
Respiratory infection	11	2.2%
UTI	13	2.6%
Urinary retention	6	1.2%
Malaria	7	1.4%
Thrombophlebitis	3	0.6%
Haemorrhage	2	0.4%

Table 7 shows that pyrexia was the most common complication (5.6%), followed by abdominal distention (3.4%), wound sepsis (3%), UTI (2.6%), respiratory infection (2.2%), malaria, urinary retention, thrombophlebitis & haemorrhage.

Discussion

In the present study, majority of patients were in the age group range of 41-50 years (37%) followed by 30% in the age group range of 31-40 years. Similar results were observed in Rizvi *et al.* [6], 44.5 percent of cases are in the fifth decade (41-50 years). In Bharati Misra *et al.* [7] study; 41.25 percent of the cases are between the ages of 41 and 50, while 30 percent are between the ages of 31 and 40. In Karmakar *et al.* [8]. study, 87.2% cases were in the age group of 41-60 years group and rest were above 60. 35.9% of AUB cases were observed in 41-50 years in Jairajpur *et al.* [9]. study. 48.1% of AUB cases were observed in 41-50 years in Muzaffer *et al.* [10] study. 32.1% and 33.5% of AUB cases were observed in 41-50 years in Abdullah *et al.* [11] and Saraswati *et al.* [12]. studies respectively. In the present study, majority of patients were in the 2nd parity which constituted 58% and minimum number of cases (2%) in unmarried cases. In Bharati Misra *et al.* [7]. study second para accounted for 62.5 percent of the instances, with the unmarried cases accounting for the smallest number of cases. 1.75 percentage. In the Mohammad *et al.* [13]. study, it was discovered (65.9%) cases with a parity of 2, which is similar to the current study. Lee NC *et al.* [14] discovered a mean parity of 3 in their research, which revealed almost identical results. In present study, HMB was seen (47.6%) followed by dysmenorrhoea (14%) and irregular bleeding (13.4%) cases. In Bharati Misra *et al.* [7]. study, similar results were observed as HMB was seen (51.5%) followed by dysmenorrhoea (15%) and irregular bleeding (13.75%) cases. In comparison to our study, Rizvi *et al.* [6] discovered that 43.7 percent of subjects presented with HMB and irregular bleeding. HMB was discovered in 49.1% of patients by Nayar *et al.* [15]. study. In Tyagi *et al.* [16], 41.3 percent of cases were having HMB, in 5.75 percent of patients, metrorrhagia is discovered. In 6% of cases, postmenopausal haemorrhage occurs. In present study, fibroid uterus was found in 41% cases followed by adenomyosis in 25.4% cases and both fibroid uterus and adenomyosis was found in 6.8% cases. In Bharati Misra *et al.* study, Fibroid uterus found in 48.25% cases followed by adenomyosis in 25.75% cases and both adenomyosis and fibroid uterus found in 6.25% cases. In Rizvi *et al.*[6] study, it was found fibroid uterine in 41.46% of cases, adenomyosis in 46.36 percent of cases, and both fibroid uterus and adenomyosis in 19. percent of cases. In 54.1 percent of patients, fibroid uterus was detected clinically, polyps were discovered in 4.25 percent of cases, according to Begum *et al.*[17] study. According to Doraswami *et al.* [18], polyps were accounted for 11.2 percent of cases. Polyps were identified in 12 percent and 13 percent of cases, respectively, according to Mirza *et al.* [19] and Cornitescu *et al.* [20]. In Jairajpuri *et al.*[9] study, incidence was 1.7%, in Purendare *et al.* [21] it was found that polyp was observed in 4.8% cases, In Saraswati *et al.* [12]. study, endometrial carcinoma were found in 2.75% cases, 4.4% were found for endometrial carcinoma and lower values were documented in Jairajpuri *et al.*[9] study with 0.5% and Mohammed *et al.* [13]. Study 0.72% of endometrial carcinoma was noted. Purendare *et al.* [21] found that 0.9% were having endometrial carcinoma. Ovulatory dysfunction were found to be present in 11% cases as compared to 22.5% cases found by Mohammed *et al.* [13]. In this study, the most common diagnoses were fibroid uterus in 40% of cases, Adenomyosis in 17% of cases, both fibroid and Adenomyosis in 8.2% of cases, polyp in 5% of cases, normal uterus in 14.6 percent of cases, endometrial hyperplasia in 1.6 percent of cases, endometrial carcinoma in 1.2 percent of cases, 3.25 percent of cases ovarian cyst.

In present study, the most common surgical approach is abdominal (66.2%), followed by vaginal (18.6%), and laparoscopically (15.2 percent) The most common surgical approach is abdominal (76.75%), followed by vaginal (15%), and laparoscopically (8 percent) in Bharati Misra *et al.* [7] study. In Mac Kanzie *et al.* [22] study, it was observed that abdominal method was preferred in 79% cases and vaginal route in 17% cases. In present study, in 102 cases, complications were discovered (19.25 percent). Pyrexia in 28 instances (5.6%), abdominal distension in 17 cases (3.4%), wound dehiscence in 15 cases (3%), RTI in 11 cases (2.6%), and UTI in 13 cases are the most common complications (2.6 percent). Malaria, thrombophlebitis, urinary retention, and subsequent haemorrhage have all been reported in a small number of patients.

Conclusion

FIGO developed the PALM – COEIN classification for AUB. This study concluded that the majority of the patients were between the ages of 41 and 50 and were multiparous. HMB was the most common AUB symptom, followed by dysmenorrhoea. Leiomyoma was the most common clinical diagnosis, followed by adenomyosis. Ovulatory dysfunction was a common non-structural cause of AUB. USG and histopathological procedures were used to confirm the diagnosis. Proliferative endometrial patterns were common. Simple endometrial hyperplasia was the most common observation in perimenopausal age groups, followed by complex hyperplasia in postmenopausal age groups. Despite the availability of medicinal treatments and conservative operations, hysterectomy is still the most common and effective treatment option for AUB patients.

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