

# THE FREQUENCY OF UTERINE PATHOLOGICAL CHANGES IN PATIENTS PRESENTING WITH ABNORMAL UTERINE BLEEDING BETWEEN 45 TO 65 YEARS OF AGE IN HYSTERECTOMY SPECIMENS

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## ABSTRACT

**Objective:** To determine the frequency of various uterine pathological changes in hysterectomy specimens with clinical history of abnormal uterine bleeding.

**Study Design:** Cross sectional study.

**Place and Duration of study:** This study was done in the Department of Histopathology, Foundation University Medical College and Fauji Foundation Hospital Islamabad from 2<sup>nd</sup> Sep, 2016 to 2<sup>nd</sup> Mar 2017.

**Material and Methods:** 600 cases of hysterectomy specimens were included in the study in patients presented with abnormal uterine bleeding. The age ranges from 45 to 65 years. After fixation of specimens, these were grossed according to standard protocol followed by processing and paraffin embedding. Slides were manually stained by a lab technician. The microscopic examination was carried by the trainee along with two consultants of histopathology.

**Results:** A total of 600 patients were included in the study. Mean age (years) of the patients was 50.91±5.76. Frequency of various pathologies in hysterectomy specimens was analyzed which included leiomyoma 189 (31.5%), adenomyosis 172 (28.7%), endometrial polyp 135 (22.5%), endometrial hyperplasia 48 (8.0), disordered proliferative endometrium 31 (5.2) followed by endometrioid carcinoma 25 (4.2).

**Conclusion:** The study concludes that there were various frequencies of uterine pathologies in hysterectomy specimens. Most frequent causes of prolonged menorrhagia were leiomyoma, adenomyosis and endometrial polyp in the study.

**Key Words:** Abnormal uterine bleeding, Adenomyosis, Endometrial carcinoma and endometrial polyps.

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## INTRODUCTION

Abnormal uterine bleeding is a state of debilitation affecting females of all ages [1]. It is a frequent gynecological complaint affecting 20% females in their reproductive years [2]. In Pakistani females its prevalence is 5 to 15% [3]. Generally, it is linked to various uterine causes such as endometrial polyp, leiomyoma, adenomyosis and endometrial carcinoma [4]. Thorough work up is required at menopausal transition with such complaint [5].

Recently the International Federation of Gynecology and Obstetrics panel dealing with bleeding disorders has proposed a standardized system called (PALM-COEIN) for various root causes of AUB [6]. It highlights nine groups abbreviated as PALM-COEIN: Polyp, adenomyosis, leiomyoma, malignancy as well as hyperplasia; coagulopathy, ovulatory dysfunction, endometrial, iatrogenic and not yet classified [2].

Leiomyoma is the notorious cause of AUB affecting 80% of women in reproductive age group [7]. It can coexist with adenomyosis [8]. Endometrial polyps are usually pedunculated overgrowths [9] causing AUB in both pre and post-menopausal women [10].

Disordered proliferative endometrium represents series of endometrial changes ranging between proliferative phase and carcinoma [11].

Atypical endometrial hyperplasia is a premalignant condition of endometrial carcinoma [12]. Other rare uterine entities that may also present with vaginal bleeding includes leiomyosarcoma, carcinosarcoma and endometrial stromal tumor [13]. AUB in post-menopausal women is alarming and may signify underlying endometrial carcinoma [14].

In a previous study done at the Leuven Bleeding Clinic from October 2004 till December 2010 (SAS Institute Inc., Cary, NC, USA), 1220 consecutive cases were reviewed that presented with abnormal uterine bleeding followed by hysterectomy. Out of these 1217 were selected for study purpose. 654 (54%) cases were normal, 313 (25%) were

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diagnosed as endometrial polyp, 134 (11%) as fibroid while 31 cases (2.5%) reported as carcinoma [15]<sup>15</sup>.

The reason of this study is to ascertain the frequency of various uterine changes causing AUB in our setup, in hysterectomy specimens. The diagnosis of adenomyosis is histological and can be established in the hysterectomy specimens only so its frequency is also purposely calculated.

## MATERIAL AND METHODS

A total of 600 hysterectomy specimens were included in the study with the presenting history of AUB from Sep 2016 to Mar 2017. Age ranges from 45 to 65 years. Patient's data was recorded on proforma. All the hysterectomy specimens were received in the histopathology department of Foundation University Medical College, Islamabad. These specimens were fixed in 10% neutral buffered formalin after surgery. Here these were kept for 24 hours to ensure adequate tissue fixation. After tissue fixation, grossing was done by the resident pathologist. Keeping in view the standard protocols, relevant sections were taken. These were processed for paraffin sectioning using the tissue processor (SAKURA TISSUE TEK® TEC 5 MODEL 220-240). The serial processing stages included dehydration, clearing, impregnation, embedding and blocking. In order to take thin sections, these paraffin embedded tissue blocks were subjected to microtomy. A rotary microtome (SAKURA ACCU-CUT MODEL SRM 200CW) was used. The slides were manually stained with Haematoxylin and Eosin by an experienced lab technician. Microscopic evaluation was done by the trainee along with two consultant histopathologists.

## RESULTS

Data was submitted and scrutinized in SPSS version 17.0. A total of 600 cases were included in the study as per inclusion criteria. Mean age (years) was 50.91±5.76 with ranges from 45 to 65 years as shown in Table-01.

**Table-1: Age-wise distribution of patients (n=600).**

	n	Min	Max	Mean	Std. Deviation
Age (years)	600	45	65	50.91	5.76

Frequency of various pathologies in hysterectomy specimens was analyzed which included leiomyoma 189 (31.5%), followed by adenomyosis 172 (28.7 %) and endometrial polyp

135 (22.5%) cases whereas frequency and percentage of endometrial hyperplasia, disordered proliferative endometrium and endometrial hyperplasia was 48 (8.0), 31 (5.2) and 25 (4.2). respectively, as shown in Table-2

**Table-2: Frequency and percentage of various uterine pathologies (n=600)**

Pathology	Frequency	Percentage
Leiomyoma	189	31.5
Adenomyosis	172	28.7
Endometrial polyp	135	22.5
Endometrial hyperplasia	48	8.0
Disordered proliferative endometrium	31	5.2
Endometrioid carcinoma	25	4.2
<b>Total</b>	<b>600</b>	<b>100</b>

Age stratification was compared with frequency of various pathologies in hysterectomy specimens with clinical history of AUB. There were 129 (37.0%) cases having age range of 45 – 55 years with leiomyoma, whereas in 92 (26.4%) patients of 45 – 55 years, adenomyosis was found. Chi-square test was used to compare age groups with frequency of various pathologies in hysterectomy specimens with clinical AUB which was statistically significant (p-value 0.002), as shown in Table-03

**Table-03:**

Pathology	Age group		P-value
	45 – 55 years	56 - 65 years	
Endometrial polyp	78 (22.3%)	57 (22.7%)	0.002
Leiomyoma	129 (37.0%)	60 (23.9%)	
Adenomyosis	92 (26.4%)	80 (31.9%)	
Disordered proliferative endometrium	16 (4.6%)	15 (6.0%)	
Endometrial hyperplasia	27 (7.7%)	21 (8.4%)	
Endometrioid carcinoma	7 (2.0%)	18 (7.2%)	
<b>Total</b>	<b>349 (100%)</b>	<b>251(100%)</b>	

## DISCUSSION

Menstrual problems cause significant morbidity that affects one out of five women during their life. Abnormal uterine bleeding (AUB) is of

particular importance that debilitates patient's life. A study was carried out in the developing countries including Pakistan. Its purpose was to determine the epidemiology of menstrual related problems and showed that AUB was prevalent 5-15% in Pakistan. Increase risk of AUB is associated with various pathologies of female reproductive tract including pregnancy related conditions and systemic disorders [16].

Numerous uterine changes that can be detected at histological level causing AUB include disorderly proliferative endometrium, uterine polyp, endometrial hyperplasia and endometrial carcinoma. It is worth mentioning here that AUB was the leading cause amongst the endometrial pathologies while hormonal imbalance patterns including disordered proliferative endometrium overshadowed the clinical picture [16].

Here it is worth mentioning that majority of endometrial carcinoma occurs post menopausally with presenting complaint of AUB. So AUB is an alarming symptom to detect endometrial carcinoma at earlier stage [12]. Thorough workup must be done to evaluate the exact endometrial cause [5]. Endometrial hyperplasia is considered as a precursor lesion to endometrial carcinoma [12]. Over 75000 hysterectomies are now carried out every year & 25-30% of them are for menstrual disturbance [16].

In our study, mean age (years) was  $50.91 \pm 5.76$  with ranges from 45 to 65 years. Similarly, a study conducted by Abid et al [10], observed that mean age in years was 40.3 years  $\pm 11.06$ .

A study conducted in Pathology Department at People's College of Medical Sciences and Research Centre, Bhopal (India) for a period of 1½ years. Causes of AUB were adenomyosis 31%, leiomyoma 25%, endometrial hyperplasia 23% and endometrial polyp 4% [17]. Likewise, in our study, adenomyosis was 28.7%, leiomyoma 31.5% whereas endometrial hyperplasia 8.0% and endometrial polyp 22.5%.

A cross-sectional study was carried out at Liaquat National Hospital (Pakistan) from January 2010 to July 2011. Out of 400 cases presented with AUB, 241 cases were included into the study. Frequency of AUB in peri and post-menopausal women was observed as 32% (77/241) and 18.7% (45/241) respectively. Frequency of hormonal imbalance due to disordered proliferative endometrium was 4% (65/159) and that of endometrial carcinoma was 03% (5/159) [16]. In our

study, the percentage of disordered proliferative endometrium and endometrioid carcinoma was 5.2% and 4.2% respectively.

## CONCLUSION

The study concludes that there are various frequencies of uterine changes/pathologies in hysterectomy specimens. The prolonged menorrhagia is usually due to Leiomyoma, Adenomyosis and Endometrial polyp in the series.

## AUTHORS CONTRIBUTION

**Saba Aneeqa:** Planned research work, sample collection, analysis & write-up.

**Faiza Kazi:** Literature review.

**Mumtaz Ahmed:** Literature review & critical analysis.

**Irum Sohail:** Literature review.

**Fatima Tul Zahra:** Analysis & result compilation.

**Masood A Khan:** Literature review.

## REFERENCES

1. Damle RP, Dravid NV, Suryawanshi KH, Gadre AS, Bagale PS, Ahire N. Clinicopathological spectrum of endometrial changes in peri-menopausal and post-menopausal abnormal uterine bleeding: a 2 years study. *J Clin Diagn Res.* 2013; 7:2774-76.
2. Kotdawala P, Kotdawala S, Nagar N. Evaluation of endometrium in peri-menopausal abnormal uterine bleeding. *J Midlife Health.* 2013; 4: 16-21.
3. Khadim MT, Zehra T, Ashraf HM. Morphological study of pipelle biopsy specimens in cases of abnormal uterine bleeding. *J Pak Med Assoc.* 2015; 65: 705-9.
4. Tehranian A, Bayani L, Heidary S, Rastad H, Rahimi A, Hosseini L. Diagnostic accuracy of sonohysterography compared to endometrial biopsy in pre-menopausal women with abnormal uterine bleeding. *Med J Islam Repub Iran.* 2015; 29: 201-10.
5. Sabbioni L, Zanetti I, Orlandini C, Petraglia F, Luisi S. Abnormal uterine bleeding unrelated to uterine structural abnormalities: management in the perimenopausal period. *Minerva Ginecol.* 2016; 69: 75-83.
6. Toz E, Sanci M, Ozcan A, Beyan E, Inan AH. Comparison of classic terminology with the FIGO PALM-COEIN system for classification of the underlying causes of abnormal uterine bleeding. *Int J Gynaecol Obstet.* 2016; 13: 325-8.
7. Aleksandrovych V, Bereza T, Sajewicz M, Walocha JA, Gil K. Uterine fibroid: common features of widespread tumor (Review article). *Folia Med Cracov.* 2015; 55:61-75.
8. Ates S, Ozcan P, Aydin S, Karaca N. Differences in clinical characteristics for the determination of adenomyosis coexisting with leiomyomas. *J Obstet Gynaecol Res.* 2016; 42: 307-12.
9. Costa-Paiva L, Godoy Jr CE, Antunes Jr A, Caseiro JD, Arthuso M, Pinto-Neto AM. Risk of malignancy in endometrial polyps in premenopausal and postmenopausal women according to clinicopathologic characteristics. *Menopause.* 2011; 18: 1278-82.
10. Cooper NA, Middleton L, Smith P, Denny E, Stobert L, Daniels J, et al. A patient- preference cohort study of office versus inpatient uterine polyp treatment for abnormal uterine bleeding. *Gynecol Surg.* 2016; 13: 313-22.
11. Inoue O, Hamatani T, Susumu N, Yamagami W, Ogawa S, Takemoto T, et al. Factors affecting pregnancy

- outcomes in young women treated with fertility-preserving therapy for well-differentiated endometrial cancer or atypical endometrial hyperplasia. *Reprod Biol Endocrinol.* 2016; 15:14-22.
12. Patel B, Elguero S, Thakore S, Dahoud W, Bedaiwy M, Mesiano S. Role of nuclear progesterone receptor isoforms in uterine pathophysiology. *Hum Reprod Update.* 2015; 21:155-73
  13. Denschlag D, Thiel FC, Ackermann S, Harter P, Juhasz-Boess I, Mallmann O et al. Sarcoma of the Uterus. Guideline of the DGGG (S2k-Level, AWMF Registry No. 015/074, August 2015). *Geburtshilfe Frauenheilkd.* 2015; 75:1028-42.
  14. Bohiltea RE, Sajin M, Furtunescu F, Bohiltea LC, Mihart A, Baros A, *et al.* Clinical and pathological correlations in endometrial pathology. *J Med Life.* 2015; 8: 552-62.
  15. Van den Bosch T, Ameye L, Van Schoubroeck D, Bourne T, Timmerman D. Intra-cavitary uterine pathology in women with abnormal uterine bleeding: a prospective study of 1220 women. *Facts Views Vis ObGyn.* 2015; 7: 17-24.
  16. Abid M, Hashmi AA, Malik B, Haroon S, Faridi N, Edhi MM, *et al.* Clinical pattern and spectrum of endometrial pathologies in patients with abnormal uterine bleeding in Pakistan: need to adopt a more conservative approach to treatment. *BMC Women's Health.* 2014; 14: 132.
  17. Sawke NG, Sawke GK, Jain H. Histopathology findings in patients presenting with menorrhagia: A study of 100 hysterectomy specimen. *J Midlife Health.* 2015; 6: 160-3.