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Histopathological Evaluation of Hysterectomy Specimens and their Association with Heavy Menstrual/ Abnormal Uterine Bleeding

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ABSTRACT

Background: Abnormal Uterine Bleeding patients is one of the most interesting topic for evaluation worldwide; a number of issue will faced while evaluating these patients like terminology and definition among the health professionals, signs and symptoms, and that's why, endometrium is very interesting tissue for research and considered by a continue process of cell division, variation and death in response to sex-hormone secreted by ovaries.
Objectives: To evaluate the histopathological specimens of hysterectomy (blocks and slides) and their association with heavy menstrual/ abnormal uterine bleeding.
Material and Methods: This is a retrospective study conducted in RMI Peshawar; a tertiary care hospital in Peshawar KPK. In this study 312 hysterectomy specimens (blocks and slides) of patients with AUB/HMB during the period of 1st Nov. 2020 to 31st Dec 2022 were included. Data including age, parity, symptoms and clinical indication for hysterectomy was collected for the study. The specimens were processed routinely and stained with hematoxylin and eosin stain and examined microscopically.
Results: Our study consists of 312 of TAH specimens received in Department of histopathology of RMI with HMB/AUB finding. The Age range of patients was 31years to 75years old. The maximum age group was from 41-50 years old (43%) and minimum number of 61years and above group (10.34%), although the later said specimen's malignancy (33%). The histopathological finding were i.e., 41% adenomyoma followed by fibroid 35% endometrial polyp 9% Malignant 6% and 5% each endometrial hyperplasia and otherss. 24% and 29% were fibroid and adenomyoma in the premenopausal women whie In post menopausal the most common are malignant neoplasm and and endometrial polyp 6% and 5% respectively.
Conclusion: Adenomyosis was found to be the most common histopathological finding in hysterectomy specimens of women with Abnormal Uterine Bleeding followed by uterine leiomyoma, while endocervical polyp, endometrial carcinoma and other unknown reason are most commonly finding in postmenopausal women. There is strong association of between adenomyosis and leiomyoma with HMB. Hyperplasia without atypia were equally presentation in both pre and post-menopausal aged groups.
Keywords: Heavy Menstrual Bleeding, Histopathology Rehman Medical Institute

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INTRODUCTION

Abnormal Uterine Bleeding (AUB) patients is one of the frequently encountered condition and Total hysterectomy specimen, is one of the most common specimen received in histopathological department; a number of issue will faced while evaluating these patients like terminology and definition among the health professionals, signs and symptoms.[1,2] and that's why, endometrium is very interesting tissue for research and considered by a continue process of cell division, variation and death in response to sex-hormone secreted by ovaries.[3] Heavy menstrual bleeding HMB/AUB is the commonest problem of females, and responsible for outdoor and indoor patient's visits to hospitals and this may occur in premenstrual, premenopausal and postmenopausal women.[3,4] HMB/AUB is defined as a bleeding from the uterus that is irregular duration, volume, and frequency, and that effect life style of the women.[5] The main reasons for HMB/AUB are (PALM-COEIN) Polyp, Adenomyosis, Leiomyoma, (Fibroid) Malignancy and hyperplasia; Coagulopathy, Ovulatory dysfunction, Endometrial disorders, Iatrogenic, and Not otherwise classified.[6]

The HMB/AUB can be defined the process that affects with normal endocrine, paracrine and/or hemostatic functions of endometrial tissue as well as probably any impact with myometrium contraction.[7,8] The main differential diagnosis of HMB/AUB are pregnancy, endo-cervical polyp, Adenomyosis, Fibroid, endometrial hyperplasia/Malignancy, Coagulopathy, Ovarian dysfunction, Iatrogenic causes and Endometriosis.[9] The prevalence of HMB/AUB is varies from 27% to 55% and it make a huge problem at world economy as well as life style of the women. It negatively effects on the socio-psychological state, work, public relationship, waste of energy, stress and couple life.[10-12] In addition, heavy blood loss during HMB/AUB can cause physical health problems like anemia (iron deficiency), generalized weakness and exhaustion.[13] Although HMB/AUB had effected more than one fourth of females, still iatrogenic bleeding is persist and a lot of total hysterectomy still performing for this reason by surgeon and gynecologist and remained the largely

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used treatment for symptomatic relieved.[14] According to Dicker, hysterectomy should be performed when the risk of preserving the uterus is greater than the risk of its removal or when there are disabling symptoms for which there is no successful medical treatment.[15]

The purpose of our study was to find the prevalence of adenomyosis and leiomyoma as the cause of AUB/HMB in histopathological specimens of hysterectomy specimens and to correlate with histopathological findings in these cases. The reason for selecting these entities for our study was they are the common causes for AUB.[16]

The rationale of my study is that the clinical presentation of leiomyoma depends on their size and location, the most common are HMB/AUB, pain and sensation of pressure. In both of them, HMB/AUB is the common presentation but unfortunately they cannot be differentiated solely on clinical ground and a histopathological examination is required.

MATERIALS AND METHODS

This is a retrospective study conducted in RMI Peshawar; A tertiary care hospital in Peshawar Khyber Pakhtunkhwa. In this study 312 specimens of hysterectomy over a period of two years from 1st November 2020 to 31st Dec. 2022 were recruited. The specimens belonged to the nearby cities and even Afghanistan covering a radius of more than 300km and covering approximately a population of 300,000 to 400,000. All details were retrieved from the lab registers blocks and slides along with provided history of the patients. Departmental permission as well hospital administration permission were taken from concern authority copy attached with (RMI/REC/Article-approval 80/14 Oct.2020).

All blocks and slides were included that were received in histopathology department. Endometrial biopsy i.e. D&C, E&C, myomectomy and polypectomy were excluded. All blocks and Microscopic slides were retrieved, and the blocks were recut and stained with H&E, out of 312 specimens 290 were TAH with BSO and 22 were without adnexa. 4-5 micron thin sections were stained with H&E. Histopathological report were performed by two independent consultant histopathologists. All histopathology reports were recorded according to standard WHO criteria. Statistical Package for Social Sciences (SPSS) application, version 25, was used for data analysis. Considering the type of data, frequencies and proportions were used for calculating categorical variables, while mean, median and standard deviation were used to describe continuous variables. Spearman's rank correlation coefficient test were applied and their interpretation is the sign of the Spearman correlation indicates the direction of association between histo-pathological findings of hysterectomy specimen and heavy menstrual bleeding/abnormal uterine bleeding.

RESULTS

Our study consist of 312 of TAH specimens received in Department of histopathology of RMI with HMB/AUB finding. The Age of patients were from 31years old to 75years old. Mean age was 40.1±9.10 years. Spearman's rank correlation table-2 shows zero value no association between the ranks.

The maximum age group was from 41-50 years old (43%) and minimum number of 61years and above group (10.34%), although the later said specimen's malignancy (33%) rate were very high. According to menopause we divided in four groups. Group A 31-40years 19%, Group B 41-50years 43%, Group C 51-60years that was 28%, Group D above than 61-70years and group E 71 and above that was 10%. Table-1 shows females with AUB/HMB in age group “B” were more common that was 43% followed by group “C” 28%, group “A” and group “D” that was 19% and 10% respectively. Table-3 showing 41% adenomyoma followed by fibroid 35% endometrial polyp 9% Malignant 6% and 5% each endometrial hyperplasia and otherss. 24% and 29% were fibroid and adenomyoma in the premenopausal women whie In post menopausal the most common are malignant neoplasm and and endometrial polyp 6% and 5% respectively.

Table 01. Age distribution

Group	Age Group in Years	Number of Specimens (%)
A	31-40	60 (19)
B	41-50	136 (43)
C	51-60	92 (28)
D	61-70	16 (5)
E	70 and above	8 (2.5)
Total	Total	312 (100)

Table 02. Spearman's Rank Correlation

Age Group	Total HMB/AUB	Rank	Fibroid Rank	d	d square
A	60	3	24	0	0
B	136	1	56	0	0
C	92	2	25	0	0
D	16	4	3	0	0
E	8	5	1	0	0

1 value means strong association between the ranks. P= 1-(6*0)/5(25-1), P= 1

Table 03. Relationship of HMB/AUB with Histopathological finding

Age Group	Total HMB/AUB	Fibroid	Adenomyoma	Endocervical polyp	Hyperplasia without atypia	Malignant (EC)	Others/ Unknown
A	60	24 (40%)	24 (40%)	4 (6.6%)	4 (6.6%)	0	4 (6.6%)
B	136	56 (41%)	68 (50%)	8 (5.8%)	4 (2.9%)	0	0
C	92	24 (26%)	36 (39%)	8 (8.6%)	4 (4.2%)	10(8.6%)	12(13%)
D	24	3 (12%)	0	4 (33%)	2 (2.1%)	2 (2.1%)	0
E	8	1 (4%)	0	4 (4.2%)	2 (2.1%)	8 (7%)	0
Total	**312**	**108 (35%)**	**128 (41%)**	**28 (9%)**	**16 (5%)**	**20 (6%)**	**16 (5%)**

DISCUSSION

Abnormal Uterine Bleeding/Heavy Menstrual Bleeding is still one of the most common presentation in the 21st century, and still globally a big burden socially as well as economically, physical and psychological problem for females in their reproductive age. In our study the highest incidence were noted in age group 41-50 years' old females that was 43%. The same results were obtain by many researchers[17-19], where other studies show maximum number at the age at 3rd decade and 4th decades.[20] It mean that HMB can be happen in any age that is a huge problem in 21st century. As shown in Fig 01 females with AUB/HMB who has hysterectomy for any reason in the age group "B" "C" A" and group "D". In age group B the hysterectomy procedure was more common that was 43% followed group C, A and D that was 28%, 19% and 10% respectively. The main reason for this procedure was HMB/AUB. Interestingly in age the group D, that was 61 years old or above minimum hysterectomy procedure compare to other groups. The reason may be already evaluate these women for disease or avoiding surgeries in this period due to physical or health problem in elder women.

In this study, proliferative endometrial phase was significantly high 55% followed by Atrophic endometrium and secretory endometrial phase 28% and 17% respectively, (Table 02), which totally different from other studies in different region of the world.[16-18] The high percentage of atrophic endometrium in our study, may be due to high number of women in peri-menopausal and post-menopausal period. The other reasons may be different social economical as well as demographical problems of the different regions.

In the above mention study pre and post-menopausal women were 196 (62%) and 116 (48%) respectively. In premenopausal women 70 of them were fibroid, 92 were adenomyoma 08 were simple hyperplasia without atypia and 01 was malignant sarcoma. While in postmenopausal women 28 were fibroid, 36 were adenomyoma, 16 were endometrial carcinoma, 08 were polyp and 08 were endometrial hyperplasia with atypia. Interestingly benign lesions were high in younger age while malignant i.e. endometrial carcinoma Figo Type-III in were common in postmenopausal elder women. These results are also supported by other studies showing high frequency of fibroids in younger i.e. reproductive life of the women, while in elder or postmenopausal women malignant tumors were more common.[21-24]

In Table 03, other, i-e; unknown reasons of HMB/AUB, in our study was 5%, which was quite higher numbers in 21st century. According to age group 4 cases were in age "A" and 12 cases were in age group "C" while group "B" and "D" were zero. And this is the gap of my study to for further evaluation need long cohort.

In present study the malignancy rate was 6.4%, and the majority cases were in postmenopausal period i.e. in elder age groups. The incidence of endometrial carcinoma is quite variable in different region of the world.[25] In this study the incidence is quite high 6.4%. The reason may be demographic and warfare situation in Afghanistan.[26,27] As most specimens were from Afghanistan and a high malignancy rate in this country may explained the reason.

CONCLUSION

Adenomyosis was found to be the most common histopathological finding in hysterectomy specimens of women with HMB/AUB with a peak incidence in the perimenopausal age group (31-50 years) followed by uterine leiomyoma, while endocervical polyp, endometrial carcinoma and other unknown reason are most commonly finding in postmenopausal women. There is strong association between adenomyosis and leiomyoma with HMB. Hyperplasia without atypia were equally presentation in both pre and post-menopausal aged groups.

Ethical Consideration

This study was approved by the ethical board of RMI Peshawar. A tertiary care hospital in Peshawar, Khyber Pakhtunkhwa, Pakistan.

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Conflict of Interest

Authors declared no conflict of interest

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DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data is not publicly available due to privacy or ethical restrictions.

AUTHORS' CONTRIBUTION

The following authors fullfill authorship criteria as per ICMJE guidelines;

Hadi S, Yasin S:	Substantial contribution to conception and design, drafting the manuscript, final approval, agreed to be accountable for all the work.
Ain Q, Iqbal HA:	Substantial contribution to conception and design, data acquisition, drafting the manuscript, final approval, agreed to be accountable for all the work.
Khattak MT:	Analysis and interpretation of data, drafting the manuscript, final approval, agreed to be accountable for all the work.
Khattak LU:	Analysis and interpretation of data, critical revision,final approval, agreed to be accountable for all the work.

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