

HISTOPATHOLOGICAL FINDINGS IN HYSTERECTOMIES DONE FOR ABNORMAL UTERINE BLEEDING**Rupali Awale^f, Roma Isaacs², Kavita Mandrelle³ and Shavinder Singh⁴**¹Senior Resident, Department of Pathology, Ram Manohar Lohia Institute of Medical Sciences, Lucknow. India.²Professor, Department of Pathology, Christian Medical College, Ludhiana. India.³Professor and Head, Department of Obstetrics & Gynaecology, Christian Medical College, Ludhiana. India.⁴Professor and Head, Department of Social and Preventive Medicine, Christian Medical College, Ludhiana. India.***Corresponding Author: Dr. Rupali Awale**

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Article Received on 30/11/2017

Article Revised on 20/12/2017

Article Accepted on 10/01/2018

ABSTRACT

Background: Abnormal uterine bleeding is the bleeding from uterus, abnormal either in amount, duration, frequency, regularity or in its relation to menstruation in the absence of any palpable or detectable pelvic pathology. Hysterectomy is done in situations where medical management can no longer be used. The underlying pathology causing bleeding is categorised as per the FIGO PALM-COEIN guidelines. **Material and Methods:** The study was conducted at a tertiary care Hospital over a period of two and half years. During this period one hundred and six hysterectomies with clinical indication of abnormal uterine bleeding (AUB) were included in the study. The specimens were received in 10% formalin saline, macroscopic findings noted. Representative sections were taken. Tissue processed, paraffin blocks made, staining done, histopathology findings noted and data analyzed. **Results:** About 11.5% (106/915) of total hysterectomies were done with clinical indication of abnormal uterine bleeding. Patients' age ranged from 28 to 58 years; mean 43.7 ± 6.4 years. On histopathological examination 64(60.4%) cases had identifiable cause of bleeding while it was not found in 42(39.6%) cases. Of the cases with identifiable causes abdominal approach was preferred in all 64(100%) cases; adnexae were removed in 52(81.2%) patients. Identifiable causes were adenomyosis in 31(48.4%), leiomyoma in 22(34.3%). About 19(29.6%) cases had dual pathology of leiomyoma and adenomyosis. If the leiomyoma was small or single then bleeding was attributed to adenomyosis. Polyp was seen in 5(7.8%). Other causes included were chronic endometritis in (6; 9.3%) and ovarian malignancy in 1 (1.5%) case. **Conclusions:** Patients with abnormal uterine bleeding should be thoroughly investigated for coagulation, ovulation and endometrial lesions as no histopathological lesion is detectable in these cases while with detectable lesion adenomyosis and leiomyoma were the most common non neoplastic and neoplastic lesions respectively.

KEYWORDS: Abnormal uterine bleeding, Adenomyosis, Histopathology, Hysterectomy, Leiomyoma.**INTRODUCTION**

Dysfunctional uterine bleeding is the bleeding from uterus, abnormal either in amount or duration or in its frequency or regularity or in its relation to menstruation in the absence of any palpable or detectable pelvic pathology, and is frequent in the perimenopausal age group.^[1] It is a diagnosis of exclusion in which no specific organic cause can be attributed to as the underlying aetiology.^[2,3] However, the term dysfunctional uterine bleed has been replaced by Abnormal uterine bleed as the underlying cause is not restricted to the uterus per se from where the bleeding occurs but could be due to ovulation disorder, endometrial disorder or coagulation disorder. As per the histopathological findings the lesions are categorised as having Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia(PALM) and if no histopathological lesion is detectable then the underlying cause is

categorised as COEIN -whenever the abnormal uterine bleeding is due to primary defect in coagulation, ovulation disorders, endometrial disorders, iatrogenic causes and not classified respectively.^[4]

Detailed information regarding the age of the woman, menstrual phase, intake of any external hormones like in the form of contraceptive pills can help in detection of underlying pathology.^[5] However, with detailed patient information and available recent advances in field of radio diagnosis and clinical pathology it is only in 50-60% cases that the underlying cause can be identified.^[6] Hysterectomy is one of the preferred surgeries done for abnormal uterine bleeding that is uncontrolled by medical management or when there is noncompliance to medical management.^[7,8]

MATERIAL AND METHODS

The study was conducted at a tertiary care Hospital over a period of two and half years. During this period, 915 hysterectomy specimens were received in the department of Pathology. Of these one hundred and six cases with clinical indication of dysfunctional/ abnormal uterine bleeding were included in the study. Patient consent was taken followed by detailed clinical history. The hysterectomy specimen was received in the department of Pathology in 10% formalin saline. The specimen was grossly examined and dimensions noted. The hysterectomy specimen if large, was subjected to taking incisions across the specimen to allow for better penetration of fixative so as to prevent autolysis. After overnight fixation the specimen was again subjected to gross examination and findings noted. One section each was taken from the ectocervix and endocervix, one section from the endometrium and myometrial junction, one section from myometrium. In case of any grossly visible pathology like leiomyoma, adenomyosis their location, size, number were noted and representative sections taken accordingly. One section was taken from each ovary and three sections were taken from each fallopian tube. The sections were processed in Leica automatic histopathology tissue processor. Paraffin

blocks were made, sections cut of 2-3um thickness. All the sections were subjected to staining by Hematoxylin and Eosin, additional special stains like Per-iodic acid Schiff, Trichrome were used wherever necessary. The study was approved by institute ethics committee.

RESULTS

Hundred and six patients (11.5%) underwent hysterectomy with clinical indication of abnormal uterine bleeding. The age of patients ranged from 28 to 58 years old, mean age 43.7 ± 6.4 years.

In 64(60.4%) cases there were histopathologically detectable causes and they were categorised as per PALM-COEIN guidelines. While in 42(39.6%) cases there was no histopathological lesion causing bleeding. This can be attributed to primary defect in coagulation, ovulation disorders, iatrogenic causes or not classified.

Of the cases with identifiable histopathological lesion abdominal approach was preferred as seen in all 64(100%) cases while adnexae were removed in 52(81.2%) patients. The distribution according to age and type of hysterectomy in this group of patients is given in **Table 1**.

Table 1: Route of surgery and age distribution of patients.

Age (years)	20-29	30-39	40-49	50-59	Total
AUB with detectable histopathological lesion					
Abdominal	1	13	41	9	64(100%)
TAH without adnexae	-	5	6	1	12
TAH + unilateral adnexae	1	6	13	2	22
TAH + BSO	-	2	22	6	30
AUB with no detectable histopathological lesion					
Abdominal	1	18	19	4	42(100%)
TAH without adnexae	1	8	2	1	12
TAH + unilateral adnexae	-	8	4	-	12
TAH + BSO	-	2	13	3	18

The commonest lesion causing bleeding was adenomyosis as seen in (31; 48.4%) cases followed by leiomyoma in (22; 34.3%) cases. The uterine leiomyoma were ranging in diameter from 5 cm to 7 cm, (12; 11.3%) had multiple leiomyomata. About 19(29.6%) cases had dual pathology of leiomyoma and adenomyosis. If the leiomyoma was small or single then bleeding was attributed to adenomyosis. Other causes included were chronic endometritis (6; 9.3%) cases, endometrial polyp measuring about 3.6 cm in maximum dimension in (4; 6.2%) cases and endocervical polyp measuring 4.2 cm in maximum length was seen in 1(1.5%) case. The histopathological lesions causing bleeding as per their location in the hysterectomy specimen are as listed in **Table 2** while the classification of the lesions as per PALM-COEIN is as shown in **Table 3**.

Table 2: Histopathological lesions causing bleeding.

Lesions	No (n=64)	Percentage
CERVIX	1	1.6
Endocervical polyp	1	1.6
ENDOMETRIUM	10	15.6
Chronic endometritis	6	9.4
Endometrial polyp	4	6.2
MYOMETRIUM	53	82.8
Adenomyosis	31	48.4
Leiomyoma	22	34.4

TABLE 3: Classification of lesion causing bleeding as per PALM-COEIN FIGO classification, 2011.

Lesions	No (n=64)	Percentage
Polyp	5	7.8
Adenomyosis	31	48.4
Leiomyoma	22	34.4
Malignancy *	1	1.5
AUB-E	6	9.4

*One case had malignancy in the ovary as well as adenomyosis.

Ovaries and fallopian tubes were received in about 41 cases. All the adnexae were present on bilateral side. One case(1.5%) had incidental finding of serous cystadenocarcinoma in ovaries of both sides with tumour extension to the fallopian tubes, serosal surface and wall while only serosal surface of uterus. Rest of adnexae (98.5%) were histologically unremarkable.

On histopathological examination no cause of bleeding could be assigned in 42(39.6%) cases and these cases could be possibly categorised as in COEIN group. However, details regarding defects of coagulation, ovulation disorders were not obtained during the data collection and thus a limitation of the study.

DISCUSSION

Majority of patients were in the 5th decade as also seen by other authors, the underlying reason is that this period is the perimenopausal period wherein the length of the menstrual cycle shortens, few becoming anovulatory due to the beginning of estrogen deprivation and decrease in ovarian follicle number.^[8-14]

Of all the other clinical indications leading to hysterectomy, dysfunctional uterine bleed constituted about 9 -36.1 % cases of all the total hysterectomies and the percentage in the present study happens to be of the same range.^[10,12,14] The uterus size was enlarged due to presence of underlying pathology like leiomyoma, adenomyosis and even dual pathology in some cases. Vaginal route of hysterectomy is usually preferred because of advantage of less duration of hospital stay, faster recovery and healing. But, in situations where the uterus is enlarged it is better to remove the enlarged uterus en masse through the abdominal route as was seen in the present study and also by other authors.^[12,14]

Clinicopathological correlation was much higher in the present study than the reported range of 14-29.6% and this could be attributed to better availability of radiological tools for assessment and the expertise of the health care professionals carrying out the assessment.^[15-18] Few studies have attributed anovulatory cycles as the underlying pathology however in the present study details regarding this was not obtained.^[9,19] The histopathological spectrum of lesions as also studied by other authors is as shown in **Table 4**.

Table 4: Histopathological spectrum of lesions.

Histopathological findings (%)	Proliferative phase	Endometrial polyp	Endometrial hyperplasia	Leiomyoma	Adenomyosis	Adenomyosis & leiomyoma	Malignancy	No lesion
Patel et al,1986 ^[1]	63		28.4		1.4			
Shergill et al, 2002 ^[15]		11.1		22.2	33.3			29.6
Abdullah, 2006 ^[19]	21	10	14	7	31	10		
Jaleel et al,2009 ^[11]		13.5		10.8	54.1	10.8		
Bhosle et al, 2010 ^[16]					5.3			12.5
Khan et al, 2010 ^[17]						19		14
Doraiswami et al, 2011 ^[9]	20.5	11.2	6.1				4.4	
Rizvi et al, 2013 ^[20]				39.1	51	9.7		
Bolde et al, 2014 ^[21]	22.8		19.4					
Kaur et al, 2015 ^[8]			53	18	40	20		
Sumathi et al, 2016 ^[13]	63.4			17	37.8	18.2		
Balaji et al,2017 ^[10]		2.4	3.03	52.1	15.7	6.6	3.01	
Dangal et al, 2017 ^[5]	47.3	1.1	6.2					
Talukdar et al,2017 ^[14]	46.6			10	16.6			
Present study	-	3.7	-	20.7	29.2	17.9		39.6

Adenomyosis was the most common non neoplastic pathology leading to bleeding seen in a wide range of 1.4-54%.^[1,8,10,11,13-16,19,20] A few authors believe it to be an under diagnosed pathology because it is present in limited areas and if limited sections are taken especially in situations where it is not clinically suspected, it can be missed.^[16]

Leiomyoma was also a common finding seen in range of 7-52%. Bleeding in cases of leiomyoma occurs because the leiomyoma causes an increase in the size of the uterine cavity which in turn caused more surface area of the endometrial lining which is more prone to hyperplasia in a setting of hyperoestrogenemia and

ultimately to bleeding.^[16] There was a wide spectrum of size and location of leiomyoma.^[10]

Coexistence of leiomyoma and adenomyosis was seen in the reported range of 6.6-18.2%. The existence of the dual pathology is because of the hormonal imbalance especially during the perimenopausal age group and this complicates the situation further.^[11,13,17,19] Study by few authors have complications of pregnancy seen in as high as 22.7% cases and these included abortions, ectopic gestation, partial mole and complete mole. However, present study did not have any pregnancy related cases.^[9]

Premalignant lesions like hyperplasia of the endometrium as observed by other authors was not seen in the present study however neoplasm of the ovary was seen.^[9,21] The finding of malignancy was seen in few cases in studies by few authors while it was seen at even a lesser percentage in present study.^[9,10]

The patients were not followed up for the coagulation studies or the hormonal assays thus a limitation of the study.

CONCLUSION

The underlying aetiology of abnormal uterine bleeding may be in the endometrium, ovaries or because of improper coagulation cascade. Histopathological examination of the hysterectomy specimens can aptly point out to the lesion if present. The patients should be thoroughly investigated for coagulation, ovulation and endometrial lesions as no histopathological lesion is detectable in these cases while with detectable lesion adenomyosis and leiomyoma were the most common non neoplastic and neoplastic lesions respectively.

ACKNOWLEDGEMENT

At this moment we would like to remember Late Dr. Mary Abraham, without her guidance this study would not have been possible. The faculty and staff of the department were very helpful.

DECLARATIONS

Funding: None.

Conflict of interest: The Authors declare that there is no conflict of interest.

Ethical approval: Taken from institute.

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