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Histopathological Correlation of Adenomyosis, Leiomyoma and Dual Pathology in Hysterectomy Specimens as the Cause of Abnormal Uterine Bleeding In Women in Different Age Groups.

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ABSTRACT

Background: The objective was to study adenomyosis and leiomyoma as the cause of abnormal uterine bleeding in hysterectomy specimens. **Methods:** This was a study carried out on 100 hysterectomy specimens, of subjects who presented to the department of Obstetrics and Gynaecology at Government Medical College, Patiala with the complaint of abnormal uterine bleeding. Data including age, parity, symptoms and clinical indication for hysterectomy was collected for the study and the histopathological findings were recorded. The specimens were well grossed and stained with hematoxylin and eosin and examined microscopically. **Results:** Women in the perimenopausal age (41-50 years) accounted for the highest number of cases (35, 44.30%) presenting with symptoms of AUB. In this age group leiomyoma was found to be the commonest cause of AUB (19, 54.28%). The most common symptom was heavy menstrual bleeding. Clinical, radiological and pathological evaluation correlated well with the diagnosis of leiomyoma but was of little help in diagnosing adenomyosis. **Conclusion:** Hence, adenomyosis still remains a clinical challenge and should be kept in mind by the clinician as well as the pathologist in women presenting with AUB.

Keywords: Abnormal uterine bleeding (AUB), Adenomyosis, Hysterectomy, Leiomyoma.

INTRODUCTION

Abnormal uterine bleeding is a common but complicated clinical presentation. In women of childbearing age, abnormal uterine bleeding includes any change in menstrual-period frequency or duration, or amount of flow, as well as bleeding between cycles. In postmenopausal women, abnormal uterine bleeding includes vaginal bleeding 12 months or more after the cessation of menses, or unpredictable bleeding in postmenopausal women who have been receiving hormone therapy for 12 months or more.[1] AUB is also the common cause for iron deficiency anemia in our country, especially in the reproductive age group. Structural causes of AUB include uterine fibroid, adenomyosis, endometrial or endocervical polyp, endometrial hyperplasia and malignancy.[2] The prevalence of adenomyosis varies and is estimated from 5% to 70% and this wide variation may be due to the inconsistencies in the histopathologic criteria for diagnosis.[3] Leiomyomas have a high prevalence upto 70% in Caucasians and 80% in women of African ancestry.[4]

The purpose of our study was to find the prevalence of adenomyosis and leiomyoma as the cause of AUB by histopathological examination of hysterectomy specimens received in the department of Pathology, Government Medical College, Patiala. Adenomyosis presents with dysmenorrhea and AUB. The clinical presentation of leiomyoma includes AUB, pain and sensation of pressure depending on their size and location. As AUB is the common presentation in both the entities and the fact that these cannot be differentiated solely on clinical ground, necessitates the need of histopathological examination for confirmation.

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MATERIALS AND METHODS

A descriptive study was carried out on 100 hysterectomy specimens received in the department of Pathology due to different causes. Out of these, 79 cases presenting with AUB were included in the

study. Inclusion criteria were women with complaint of AUB for which hysterectomy was performed. Vaginal and abdominal hysterectomies done for complaints other than AUB and malignancies were excluded from the study. A record of these patients was retrieved and patient's age, presenting symptoms, sonography findings and clinical indication for hysterectomy was recorded.

On gross examination, abnormality in the form of asymmetrical enlargement of the uterus, fibroid, polyp, any pinpoint brownish focal lesions or cystic areas of hemorrhage and endometrial thickening was noted. The location, size and number of the fibroid were also noted.

A minimum of two sections were taken from the cervix one from anterior and one from posterior half, and atleast two sections taken close to fundus and including endometrium along with good portion of myometrium. Sections from any pinpoint focal brownish lesions within the myometrium in case of adenomyosis and one section per myoma, and upto three sections from any grossly abnormal area (e.g. soft, fleshy, necrotic,cystic) in case of leiomyoma are to be included.[5] Representative sections were stained with hematoxylin and eosin (H and E) stain and examined microscopically. The microscopic criteria for the diagnosis of adenomyosis were the presence of endometrial glands and stroma in the myometrium more than one low power field away from the endomyometrial junction.

RESULTS

A total of 79 cases of AUB were included in the study and the age of the patients ranged from 20 to 80 years.

Table 1: Showing age distribution of patients presenting with AUB.

Age group	Number of cases	Percentage (%)
21-30	02	2.6
31-40	24	30.3
41-50	35	44.3
51-60	16	20.2
61-70	01	1.3
71-80	01	1.3
Total	79	100

Table 2: Showing distribution of 79 cases of AUB according to histopathological lesion.

Age group	Adenomyosis	Leiomyoma	Dual pathology
21-30	00	02	00
31-40	04	18	02
41-50	05	19	11
51-60	05	04	07
61-70	00	01	00
71-80	01	00	00
Total	15	44	20

The largest group (n=35) with features of AUB was of perimenopausal age (41-50 years) contributing 44.3% of total cases in the study. In the extremes of age, the prevalence of adenomyosis and leiomyoma decreased to 2.6% in the age group of 21-30 years and 1.3% in the age group above 60 years.

In this age group, leiomyoma was the commonest pathology 54.28% (n =19) followed by dual pathology of leiomyoma and adenomyosis 31.42% (n =11), whereas 14.28% (n=5) showed features of adenomyosis.

Table 3: Showing number of patients for each pathological lesion.

Histopathological lesion	Number of cases	Percentage (%)
Adenomyosis	15	18.98
Leiomyoma	44	55.69
Dual pathology	20	25.32
Total	79	100

In the present study, leiomyoma was the most commonly encountered histopathological lesion accounting for 55.69% of total cases with maximum number of cases seen in 41 to 50 years of age group.

Table 4: Showing correlation of histopathological diagnosis with the clinical and radiological diagnosis

Disease	Clinical	USG	Histopathological
Adenomyosis	03	10	15
Leiomyoma	59	59	64

Of total 79 patients, all patients had undergone transabdominal ultrasonography before surgery. The sonographic diagnosis correlated well with the histopathological findings. 10 patients were given the provisional diagnosis of adenomyosis/ bulky uterus and 59 of fibroid on sonography and rest of them had other pathology. Out of 79 patients, 03 were clinically diagnosed as adenomyosis while 59 were suspected to have leiomyoma as the cause of AUB. On histopathological examination 15 patients were confirmed to have adenomyosis, 44 had leiomyoma and 20 cases were confirmed to have both adenomyosis and leiomyoma. Therefore, the clinico-histopathological correlation was better for leiomyoma than for adenomyosis.

Table 5: Showing correlation of histopathological lesions with the type of bleeding in AUB

Type of AUB	Adenomyosis	Leiomyoma	Dual pathology
HMB	05	32	09
IMB	04	07	04
Other	06	04	08

AUB: Abnormal uterine bleeding; HMB: Heavy menstrual bleeding; IMB: Irregular menstrual bleeding

HMB (heavy menstrual bleeding) was the symptom in 48.39% patients as compared to IMB (irregular menstrual bleeding) which was seen in 18.98% cases. In both the categories of AUB, majority of the patients showed leiomyoma as the underlying histopathological lesion.

Figure 1: Showing multiple well-defined intramural fibroids with a whorled cut surface (arrows).

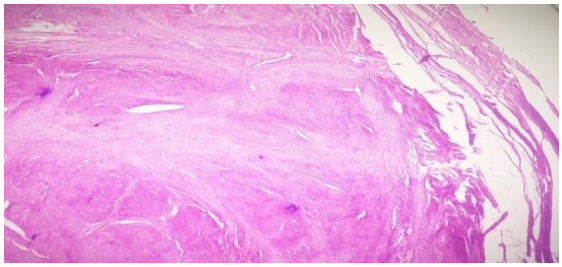

Figure 2: Showing fibrous capsule and whorled pattern of smooth muscle bundles in a case of leiomyoma (x200; H and E).

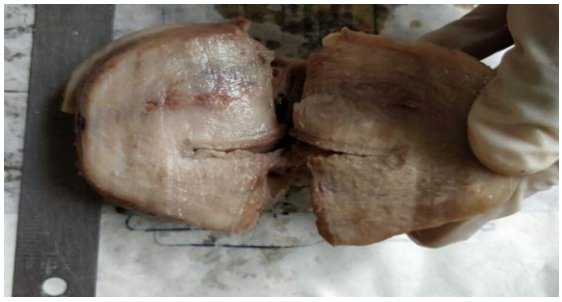

Figure 3: Showing pin point focal brownish lesions within the myometrium in a case of adenomyosis (arrow).

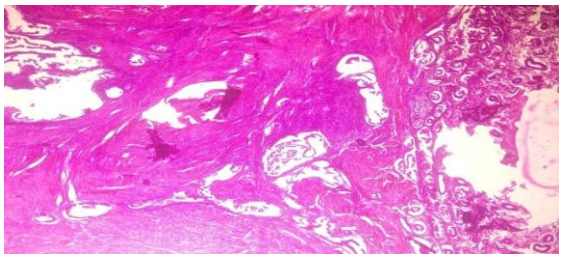

Figure 4: Low power view showing endometrial glands and stroma deep in myometrium in a case of adenomyosis (arrows) (x40; H and E).

DISCUSSION

The etiologies of AUB are multifactorial. The Menstrual Disorders Working Group of the International Federation of Gynecology and Obstetrics proposed a classification system. According to this system, the etiologies of AUB are classified as related to uterine structural abnormalities and unrelated to uterine structural abnormalities and is categorized following the acronym PALM– COEIN: Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia, Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic, and Not otherwise classified.[7] Uterine leiomyomas are benign myometrial neoplasms that develop during a woman's reproductive years that tend to regress after menopause.[8] Leiomyomas represent the primary indication for hysterectomy in USA.[12] Adenomyosis is a myometrial lesion characterized by the presence of ectopic endometrium with or without hyperplasia of the surrounding myometrium. Furthermore, both adenomyosis and leiomyomas commonly coexist; concomitant adenomyosis in hysterectomy specimens of women with leiomyomas ranges from 15 to 57%.[6] However, since both conditions frequently coexist in the same uterus, attributing symptoms to either condition can be problematic. Moreover, adenomyosis is typically diagnosed only at the histopathological evaluation of the hysterectomy specimen, so contribution of adenomyosis to the symptoms is only understood retrospectively.[6]

In our study, (n = 35) of the patients with AUB belonged to the 41-50 years age group. In a retrospective study conducted by G Rizvi et al,[2] majority of the cases (n=82) presented in the age group of 41 to 50 years. Similar findings were seen in the present study and it was also in accordance with other studies as conducted by S. Mehla et al,[10] and A. Langthasal et al.[11] In our study, leiomyoma was most common histopathological lesion which was not in agreement with the previous studies.[2,10,11] This variation might be due to the early presentation of the patients with leiomyomas in the form of abdominal discomfort or pressure symptoms and heavy menstrual bleeding along with early detection by ultrasonography. Ideally, both transabdominal and transvaginal scans should be performed. Ultrasonography can detect fibroids as small as 5 mm on transvaginal ultrasounds.[13] The overall prevalence of adenomyosis was determined to be 18.98%, which was, however, lower than those of the previous studies whereas leiomyoma was found in 44 cases (55.69%). Diagnosis of adenomyosis on clinical findings is usually difficult. This might be one of the several reasons for the variation observed in our study as adenomyosis is more of a histopathological diagnosis. Transabdominal ultrasonography doesn't allow reliable diagnosis of adenomyosis, even transvaginal ultrasonography has limitation in tissue characterization.[9] MRI is more helpful to diagnose adenomyosis but is expensive, whereas it is very useful diagnostic tool in cases with fibroid uterus. None of the patients in our study had undergone MRI, so it may also be a contributing factor to the lower number of cases of adenomyosis as compared to other studies.

CONCLUSION

In our study, leiomyoma was found to be the most common histopathological finding followed by dual pathology as the cause of AUB in women in different age groups. Clinical, radiological and histopathological findings correlated well with the diagnosis of leiomyoma but were of little help in diagnosing adenomyosis. Adenomyosis still remains a clinical challenge. Hence, the possibility of adenomyosis should be kept in mind by both the clinician, as well as the pathologist in women with AUB. AUB in perimenopausal age is alarming and needs thorough evaluation because of its relationship with hyperplasias and malignancies of the endometrium.

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