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HISTOPATHOLOGICAL CORRELATION OF ADENOMYOSIS, LEIOMYOMA AND DUAL PATHOLOGY AS THE CAUSE OF AUB IN HYSTERECTOMY SPECIMENS OF WOMEN IN A TERTIARY CARE HOSPITAL—A RETROSPECTIVE STUDY.

Pathology

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ABSTRACT

Objective: To find out the histopathological distribution of adenomyosis and leiomyoma in hysterectomy specimens of abnormal uterine bleeding cases.

Method: A retrospective study was carried out on 292 hysterectomy specimens from January 2013 to December 2016. Data including age, symptoms and clinical indication for hysterectomy was collected for the study from records. The specimens were stained with routine hematoxylin and eosin and examined under microscope.

Results: Majority of patients presenting with AUB are in the perimenopausal age group (52.39%). Leiomyoma (60.1%) was the commonest histopathological lesion in this age group followed by adenomyosis (32.02%) and dual pathology (7.8%) respectively. As a whole leiomyoma was the commonest lesion in all cases of AUB (51.36%)

Conclusion: Leiomyoma was the most common cause of abnormal uterine bleeding in women of our study. Both leiomyoma and adenomyosis were found to be significant cause of AUB in perimenopausal age group.

KEYWORDS

AUB, adenomyosis, leiomyoma

Introduction :

Abnormal uterine bleeding (AUB) is a common problem among women in the reproductive age. AUB may be accompanied by pain and discomfort, cause significant social embarrassment, and have a substantial effect on health-related quality of life. AUB leads to loss of productivity. [1] Abnormal uterine bleeding (AUB) is defined as bleeding from the uterine corpus that is abnormal in regularity, volume, frequency, or duration and occurs in the absence of pregnancy[2,3] . It accounts for more than 70% gynaecological consultation in peri and post menopausal women. AUB is of clinical significance because it has many organic and inorganic causes. Abnormal uterine bleeding occurs in 9 to 14 percent of women between menarche and menopause, significantly impacting quality of life and imposing financial burden [4] The two most important underlying histopathological lesion of AUB are leiomyoma and adenomyosis.

In modern days a number of minimally invasive surgical options for hysterectomy do exist like endometrial ablation, thermal balloon therapy and uterine artery embolization but restricted availability and cost factor limit their wide use.[5] So, hysterectomy is still the most widely accepted treatment of choice in AUB cases even though it has increased number of adverse effects including longer recovery time.

Leiomyoma or fibroid is a benign tumor of myometrium and is the most frequent benign lesion that cause abnormal uterine bleeding. Adenomyosis is abenign uterine disease where there is down growth of basal layer of the endometrium to the myometrium. leiomyomas have a high prevalence up to 70% in Caucasians and 80% in women of African ancestry. [2, 6] They also have a wide spectrum of size and location (submucosal, intramural, subserosal or a combination of these). The prevalence of adenomyosis vary widely from 5% to 70% as hysterectomy and microscopic evaluation of the samples are still the only ways of definite diagnosis of adenomyosis. [7] The clinical presentation of leiomyoma depends on their size and location. They usually presents with AUB, pain and pressure sensation. Adenomyosis mainly presents with dysmenorrhea and AUB. Both of them have AUB as the common presentation, but they can not be diagnosed on clinical ground only and need histopathological examination for confirmation.

The purpose of this study was to find out the prevalence of adenomyosis and leiomyoma as the cause of AUB in women of different age group. These two are the commonest histopathological lesion in hysterectomy specimens of perimenopausal women.

Material and methods:

A retrospective study was carried out on 292 hysterectomy specimens from January 2013 to December 2016. The duration of study is 3 years. It was carried out in the Department of Pathology, Fakhruddin Ali Ahmed Medical College, Barpeta. The material for the study consists of resected specimens of uterus of women complaining of AUB. During this period total 465 hysterectomy specimen were received in the department of pathology. Out of this 292 specimens were included in this study. Hysterectomies done for complaints other than AUB and malignancies were excluded from the study. Relevant clinical history and other investigation reports were noted from records.

The biopsy specimen obtained in the Department of Pathology was fixed in 10% buffered formalin. Formalin fixed specimens were subjected to detailed gross examination. The number, size and location of the fibroid were also noted. Adequate number of sections were taken from the required areas and subjected for histopathological processing and paraffin blocks prepared. Sections were cut at 3-5 micron thickness and stained by Hematoxylin and Eosin and mounted in DPX. The slides thus prepared were then examined under the microscope and the lesions were diagnosed.

Results and observations :

Out of total 465 hysterectomy specimen 292 cases were included in this study. Age distribution of the patients is shown in the table I.

Table I: Age distribution of patients with AUB to histopathological lesions.

Age	Adenomyosis	Leiomyoma	Dual pathology	Total number
10-20	0	2	0	2(0.6%)
21-30	3	5	1	9(3.08%)
31-40	51	46	13	110(37.67%)
41-50	49	92	12	153(52.39%)
51-60	9	5	4	18(6.16%)

Maximum number of patients with AUB are found to be in the perimenopausal age group (52.39%). In these age group leiomyoma was found to be more common than adenomyosis in our study. In the older age group adenomyosis was the leading cause of AUB. Leiomyoma was the commonest histopathological lesion in our study followed by adenomyosis. 10.27% cases show dual pathology.

Table II: Number of patients with AUB for each histopathological lesions

Histopathological lesions	Total number of cases	Percentage
Adenomyosis	112	38.35%
Leimyoma	150	51.36%
Dual pathology	30	10.27%

The symptoms of AUB is divided into HMB(heavy menstrual bleeding) and IMB (Irregular menstrual bleeding). HMB(heavy menstrual bleeding) was the symptom in 67.8% of the cases while irregular menstrual bleeding was seen in 32% of the cases amongst the all AUB patients.

Table III : Correlation of histopathological lesion with type of bleeding in AUB

Type of AUB	Adenomyosis	Leiomyoma	Dual
HMB	85	92	21
IMB	27	58	09

Table III- Showing correlation of histopathological diagnosis with clinical and radiological diagnosis.

Disease	Clinical diagnosis	USG	Histopathological diagnosis
Adenomyosis	128	125	112(87.5%)
Leiomyoma	164	159	150((91.4%)

Majority of patients had undergone radiological investigations preoperatively. The correlation between clinical finding, radiological findings and histopathological was satisfactory. 128 patients were given the provisional diagnosis of adenomyosis and 164 patients as fibroid clinically. Radiological diagnosis shows 125 patients as Adenomyosis and 159 as fibroid uterus. Later this was confirmed by histopathology where only 112 patients showed adenomyosis and 150 patients as leiomyoma. Out of all clinically diagnosed cases 87.5% were confirmed for adenomyosis and 91.4% were for leiomyoma on histopathological examination. Similarly out of all radiologically diagnosed cases 89.6% were confirmed for adenomyosis and 94.3% were confirmed for leiomyoma on histopathological examination.

Discussion:

Abnormal uterine bleeding is a multifactorial disease involving many organic and inorganic causes. Proper diagnosis and appropriate management has significant impact on providing quality life to these patients. To standardize nomenclature of AUB, a new system known by the acronym PLAM-COEIN (Polyp; Adenomyosis; Leiomyoma; Malignancy and Hyperplasia; Coagulopathy; Ovulatory Disorders; Endometrial factors; Iatrogenic; and Not classified) was introduced in 2011 by the International Federation of Gynecology and Obstetrics (FIGO). [2]

In this study we have found that leiomyoma was the most common histopathological lesion as the cause of AUB. Leiomyoma are the most frequent benign uterine tumors that develop during a woman's reproductive years; occurrence tends to regress after menopause. [8]

Adenomyosis is an another common condition detected in hysterectomy specimens. It is characterized by the presence of endometrial glands and stroma within the myometrium. Patients are typically pre or perimenopausal women who present with abnormal bleeding [9]. In our study heavy menstrual flow(67.8%) was found to be the most common presenting complain which is similar to the study done by Shergill et al (66%) in patients undergoing hysterectomy. [10]

Menorrhagia in fibroids is due to increased size of uterine cavity thereby increasing the surface area of the endometrium, hyperestrogenemia causing endometrial hyperplasia, vascular alteration of the endometrium and obstructive effect of fibroid on uterine vasculature leading to endometrial venule ectasia which causes proximal congestion in the myometrium and the endometrium. The cause of menorrhagia in adenomyosis is not known.

In our study, 52.39% (n = 153) of the patients with AUB belonged to the 41-50 years age group.In a cross-sectional retrospective study Kim and Strawn[11] reported that the uterine samples of 64 patients out of the 182 participants (35.2%) had adenomyosis. The prevalence of adenomyosisin our study was determined to be 38.35% which was almost similar with some previous reports.[11,12] Isaoglu *et al*.[13] found that 30.23% of the hysterectomy cases were diagnosed as adenomyosis whereas leiomyoma constituted (28.19%) cases of hysterectomy in AUB.

Clinical-radiological diagnosis of adenomyosis is difficult and needs histopathological confirmation whereas, for leiomyoma clinic-radiological diagnosis is far more accurate.

Transabdominal ultrasonography doesn't allow reliable diagnosis of adenomyosis, even transvaginal ultrasonography has limitation in tissue characterization.[14] MRI is more helpful to diagnose adenomyosis but is expensive, whereas it is very useful diagnostic tool in cases with fibroid uterus.

Our study shows that clinico-radiological diagnosis of leiomyoma is more accurate than adenomyosis on histopathological correlation. Diagnostic correctness is very important for management of AUB. Our study is a retrospective study done on 292 patients only. Larger sample size will have a better correlation of clinical, radiological & histopathological findings.

Conclusion:

Leiomyoma was the most common cause of AUB followed by adenomyosis in hysterectomy specimens of our study. Clinicao-radiological & pathological evaluation correlated well to diagnose leiomyoma, however clinical examination and USG proved to be of little help in diagnosing adenomyosis. But the possibility of this lesion has to be kept in mind by both the clinician, as well as the pathologist in women with AUB. Abnormal uterine bleeding may be alarming and thorough evaluation is required because of its relationship with hyperplasia and malignancies of endometrium. The direct relationship of adenomyosis in the genesis of AUB is still not clear. Further research in this field may be of utmost importance.

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