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RESEARCH ARTICLE
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ADENOMYOSIS AND COEXISTING VARIOUS UTERINE PATHOLOGIES IN PATIENTS ATTENDING TERTIARY CARE HOSPITAL

Dr Tirumalasetty Pavithra[1], Dr B Lavanya[2], Dr Jayashree G Pawar[3*], Dr Ramaswamy A S[4] ,

[1]Resident In Department Of Pathology, Pes Medical College, Andhra Pradesh, India
Email Id: Tirumalasettypavithra@Gmail.Com Phone Number: 9390618074
[2]Resident In Department Of Pathology, Pes Medical College, Andhra Pradesh, India
Email Id: Bollulavanya7847@Gmail.Com Phone Number: 9603379033
[3*]Professor, Department Of Pathology, Aarupudai Veedu Medical College, Kirumampakkam, Pudhucherry, India Email Id: Jgpawar999@Gmail.Com Phone Number:9448215264
[4]Professor And Head Of The Department Of Pathology, Pes Medical College, Andhra Pradesh, India
Email Id: Drramaswamy@Pesimsr.Pes.Edu Phone Number: 9493726494

***Corresponding Author:** Dr Jayashree G Pawar,
*Professor, Department Of Pathology, Aarupudai Veedu Medical College, Kirumampakkam, Pudhucherry, India Email Id: Jgpawar999@Gmail.Com Phone Number:9448215264

ABSTRACT:

INTRODUCTION: Adenomyosis is defined as the benign invasion of endometrial tissue into the underlying myometrium, which results in a diffuse enlargement of the uterus and observed in individuals between the ages of 40-60.Risk factors for adenomyosis include smoking, multiparity, dilatation, and curettage.The presence of endometrial tissue and 1-2 low power fields from the endometrio-myometrial junction are used to diagnose adenomyosis by histological examination of a hysterectomy specimen.Other tests include MRI and transvaginal ultrasonography.

AIM: To study frequency of adenomyosis and coexisting uterine pathology in hysterectomy specimen

MATERIALS AND METHODS: A Cross- sectional study was conducted for 18 months [June 2023 to Dec 2024] on 184 hysterectomised biopsy specimens with Data that includes 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: Adenomyosis was found in 46% of 182 patients. Both the presence and absence of adenomyosis were associated with following prevalences: Fibroids (72% versus 46%)with following endometriosis (4% versus 46%), abnormal bleeding (37% versus 46%), and persistent pelvic pain in the presence of fibroids (12%) (p=0.58).

DISCUSSION: Adenomyosis is found commonly in hysterectomy specimens of women with concurrent fibroids. The incidence of concurrent fibroids has ranged from 19%-57%specimens. Based on a large community-based population minimizing bias, this study has a significant benefit. Cervical cancer and other gynaecological disorders, like fibroids, are similarly prevalent in specimens with and without adenomyosis.

CONCLUSION: Adenomyosis prevalence is not different from that reported for other gynaecological conditions. The supposed association between the two diseases appears unsupported.

INTRODUCTION: Adenomyosis is characterized by ectopic proliferation of endometrial tissue within the myometrium which results in a diffuse enlargement of the uterus and observed in individuals between the ages of 40-60[1]. Risk factors for adenomyosis include smoking, multiparity, dilatation, and curettage [1][2]. Microscopically, ectopic non-neoplastic endometrial glands and stroma are surrounded by hypertrophic and hyperplastic myometrium The presence of endometrial tissue and 1-2 low power fields from the endometrio-myometrial junction specifically by visualizing ectopic endometrial glands and stroma at a minimum depth of 2.5 mm below the endomyometrial junction with a hypertrophic and hyperplastic surrounding myometrium are used to diagnose adenomyosis by histological examination of a hysterectomy specimen[2] Adenomyosis is asymptomatic in 30% of the cases or it has nonspecific findings in most of the symptomatic cases. Although ultrasonography and magnetic resonance imaging (MRI) are important tools in diagnosis, they may not be enough [3][4].
The pathogenesis and etiology of adenomyosis are not yet fully understood. The smooth muscle fibers of the myometrium, the elevated pressure in the uterus cavity, or both may be the "weakness" that causes adenomyosis [5][6]. The maintenance of adenomyosis might necessitate increased estrogen levels and weakened control over ectopic endometrial development, which could be connected to immune system failure [7]. Fibrosis may result, which could induce menorrhagia and uterine enlargement. Clinical diagnosis is challenging, and the diagnosis is typically made following a uterine histology examination. It frequently occurs in a different demographic and has a different origin than endometriosis, making it a separate entity. Smooth muscle fiber hyperplasia and hypertrophy are reactive alterations linked to ectopic endometrial proliferation[7]. Although the final diagnosis is usually made after a hysterectomy, attempts have been made to confirm it beforehand via endometrial samples and magnetic resonance imaging (MRI).[7]
Several studies have assessed the histological co-existence of endometrial carcinoma (EC) and adenomyosis. However, the signifcance of this association is still unclear.[7]
AIM: To study frequency of adenomyosis and coexisting uterine pathology in hysterectomy specimen

MATERIALS AND METHODS:

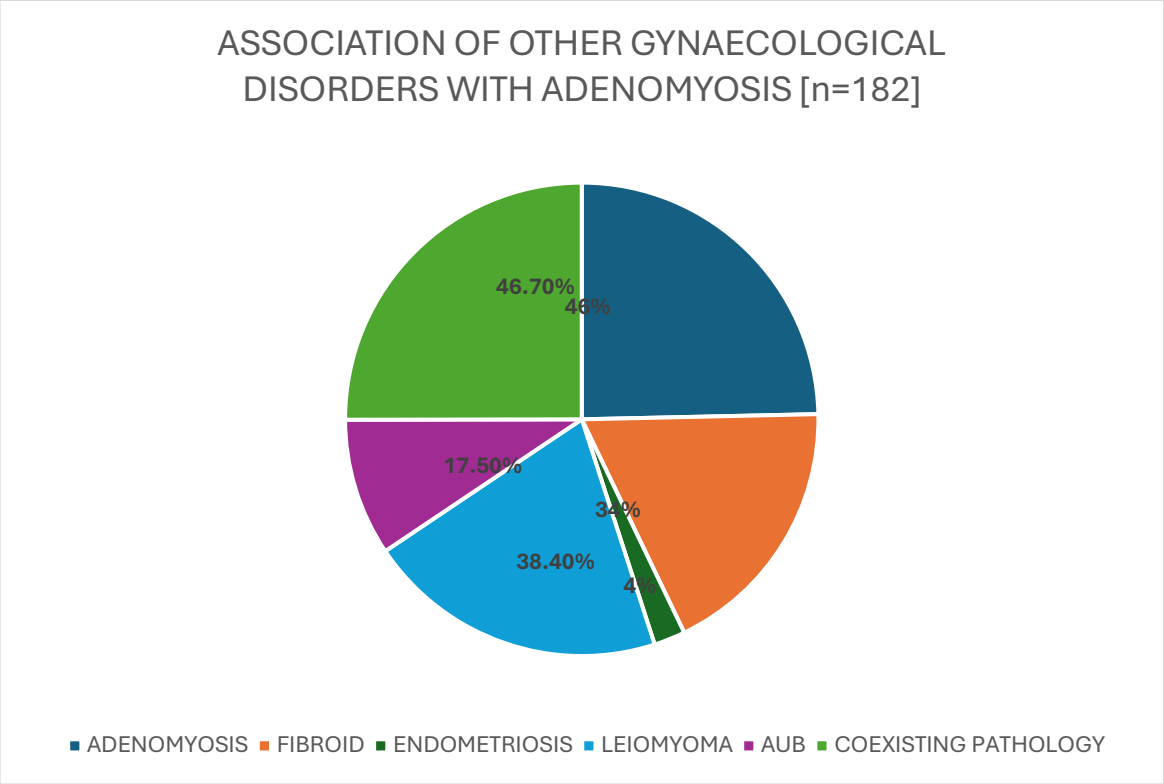
This observational study was conducted at a tertiary care referral institute over a period of 18 months. The study population included patients who underwent hysterectomy for various clinical indications during the study period. A purposive sampling method was employed to select relevant cases, ensuring that only those specimens which met the study's predefined inclusion and exclusion criteria were included. A total of 182 hysterectomy specimens were studied. The inclusion criteria comprised all hysterectomy specimens received in the pathology department during the study period. However, autolyzed specimens and those obtained through laparoscopic hysterectomy were excluded to maintain uniformity in tissue processing and to ensure the preservation of histological architecture for accurate assessment.
The primary tools used in this study included formalin-fixed hysterectomy specimens collected and processed according to standard histopathological protocols. These specimens were examined using Hematoxylin and Eosin (H&E) stained sections to assess the histomorphological features of the uterus and its associated structures. Detailed microscopic examination was performed to identify both normal histology and any pathological changes.
Clinical data, including the age of the patient and menstrual history, were collected retrospectively from the patient records obtained through the Medical Records Department. The corresponding histopathology slides were retrieved from the Department of Pathology and analyzed systematically. All necessary ethical considerations were adhered to, and institutional ethical clearance was obtained prior to the initiation of the study, ensuring compliance with research ethics guidelines.

RESULTS:

In the study, the incidence of adenomyosis was 46% [85 cases out of 182] and in only one instance was it the only diagnosis. There is no significant difference in the presenting diagnoses for women with or without adenomyosis. Therefore, despite a women’s presenting symptom, or indication for hysterectomy, she is equally likely to have or not to have adenomyosis

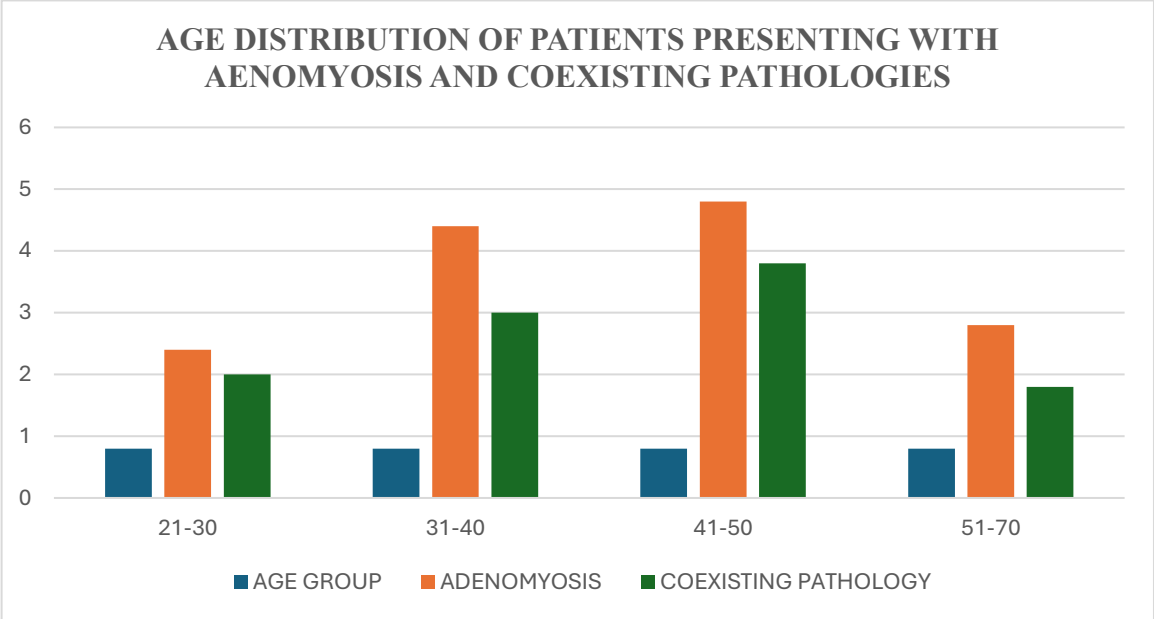
The associations of some other gynecological conditions with adenomyosis are presented in

HISTOPATHOLOGICAL LESION	NUMBER OF CASES OUT OF 182
Adenomyosis	85
Fibroid	62
Endometriosis	5
Leiomyoma	70
AUB	32
Coexisting Pathology	85

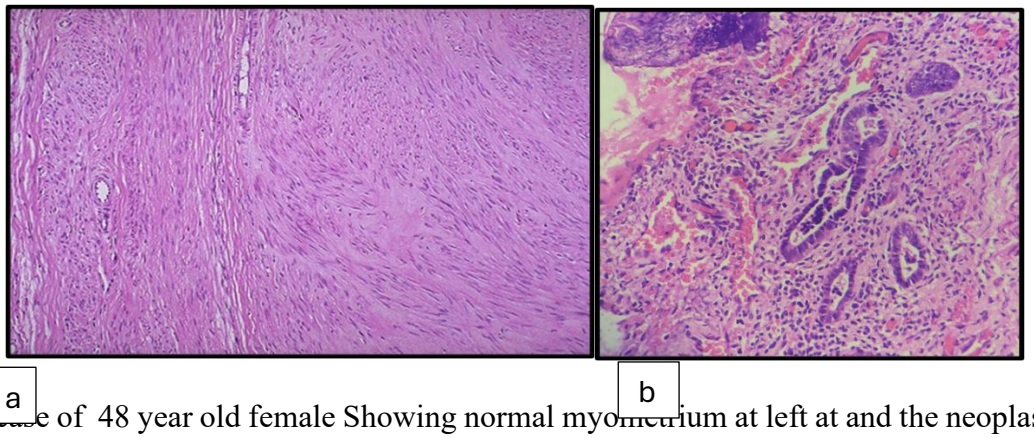


Distribution of patients according to the histopathological lesion

AGE GROUP	ADENOMYOSIS	COEXISTING PATHOLOGY
20-30	8	2
31-40	72	38
41-50	74	42
51-60	18	1
61-70	10	2

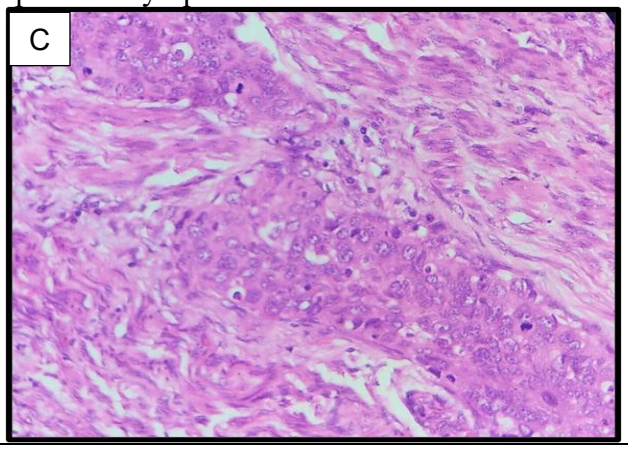


Out of 182 patients, 98 were preoperatively diagnosed as adenomyosis while 48 were clinically suspected to have leiomyoma as the cause of AUB. On histopathological examination only 85 of these 98 were confirmed to have adenomyosis whereas 36 patients of leiomyoma showed the same lesion. Therefore, the clinico-histological correlation was better for leiomyoma (93.8%) than for adenomyosis (74.7%). Coexisting pathology was seen in 46 % cases and with dysmenorrhea 8% of cases while 3.8% cases showed pain and pressure symptoms.



a. A case of 48 year old female Showing normal myometrium at left at and the neoplasm is well differentiated so thatthe leiomyoma appears different hardly at right. Bundles of smooth muscle are interlacing the tumor mass

b. A case of 38 year old female with AUB showing endometriosis in the cervix. She came with complaints of dysmenorrhea and pain pressure symptoms



c. A 75-year-old female a case of endometrioid carcinoma along with dual pathology of adenomyosis

DISCUSSION:

Adenomyosis is a common benign gynecologic condition with variable clinical symptoms. It is a disease involving myometrial invasion by endometrial glands and stroma. It has two forms called diffuse type (known as adenomyosis) and the focal type (known as adenomyoma) [10] In our study the incidence of adenomyosis is 46% based on diagnosis made by the pathologist. This study tested four hypotheses which are:[10]

1. Adenomyosis is associated with the presence of fibroids.
2. Adenomyosis is more common in the presence of endometriosis.
3. Adenomyosis is associated with abnormal uterine bleeding.
4. Symptoms of chronic pain are more likely in uteri with fibroids if adenomyosis is present.

The following criteria for the diagnosis of adenomyosis was used [4]

- Grossly - pinpoint/small cystic areas of hemorrhage seen within the myometrium.
- The microscopic criteria for the diagnosis of adenomyosis were the presence of endometrial glands and stroma in the The following criteria for the diagnosis of adenomyosis was used [4]
- Grossly - pinpoint/small cystic areas of hemorrhage seen within the myometrium.
- 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 end myometrial junction.

Magnetic resonance imaging, ultrasonography, and symptomatology can all be used to diagnose adenomyosis prior to surgery. However, the pathologic analysis of hysterectomy specimens is currently the most accurate method of diagnosing adenomyosis [8][9]. Adenomyosis in hysterectomy specimens has been documented to occur in between 5% and 70% of cases in the literature. Despite this understanding, the precise incidence of adenomyosis remains unknown due to the need for histopathology confirmation for the diagnosis and disagreements over the histology criteria [8][9][10]. Furthermore, the majority of the studies have limitations because of the small patient population; they should only be applied to the group of women who have had hysterectomy and cannot be extrapolated to the broader population [4]

The pathogenesis of the majority of uterine pathologies such as adenomyosis, is not clearly known [5][6]. The invasion of endometrial glands and stroma into the myometrium via fissures created by tissue damage and healing is currently the most widely recognized explanation for adenomyosis [5][6][13]. This theory could explain the development of disorders including adenomyosis, endometriosis, and polyps if the initiation and progression of these conditions are linked to deregulation of a physiological inflammatory process [13]. On ultrasonography, in the uteri of patients with adenomyosis, in the junctional zone is often seen to be quiet fissurae. It is thought that interventions to uterus (especially cesarean section and induced abortion) may be the cause of these tissue defects [7]

Cases with adenomyosis are rarely isolated cases. Most of them are accompanied with additional pathologies. The most frequent accompanying pathologies are uterine myomas (35-55%), endometrial polyps (2.3%), hyperplasia (10.5%) and endometrial adenocarcinoma [7]

Adenomyosis is a distinct entity different from uterine fibroids and uterine polyps while endometriosis and adenomyosis may be the variants of the same disease [7][12]. Previous studies concluded that fibroids are equally common in the specimens with and without adenomyosis and are typically present with abnormal bleeding in pre or perimenopausal women who present with abnormal bleeding [4][11]. Diagnosis of adenomyosis on clinical findings alone is usually difficult.

Imaging plays an important role in the evaluation of myometrial lesions and the common diagnostic modalities available in the outpatient clinic are transabdominal sonography (TAS) and transvaginal sonography (TVS).

The following criteria is used for the diagnosis of adenomyosis in TVS[4]-

• Asymmetrical myometrial thickening
• Heterogenous area within the myometrium
• Hyperechoic region surrounded by hypoechoic area

• No discrete myometrial mass
• If mass present poorly defined margins
• Contour of uterus unaltered

Myometrial cyst has been cited as the most sensitive and specific feature for the diagnosis of adenomyosis [4][12]. Though MRI is helpful in diagnosing adenomyosis, women have a limited access to it. Reason being that is not available in most of the medical centres and even if it is the cost factor limits its utility. In all these studies leiomyoma has been reported as the commonest pathological lesion in women with AUB [4][11]. The reason for this discrepancy could be that adenomyosis being asymptomatic is usually not clinically diagnosed [14][15]. Adenomyosis still remains a histopathological finding by chance in uterine tissue sections examined for other clinically suspected pathology [14][15].

CONCLUSION:

In the study, adenomyosis was found to be the most common histopathological finding in hysterectomy specimens of women with AUB with a peak incidence in the perimenopausal age group (41-50 years) in this region [11]. Adenomyosis is equally common in women who also have fibroids, endometriosis, pelvic pain, or abnormal uterine bleeding, and those women that do not [5][6]. Transvaginal sonography does help in differentiating between leiomyomas and adenomyosis. Despite this adenomyosis still remains a clinical challenge [10].

Nevertheless, the possibility of this lesion has to be kept in mind by both the clinician, as well as the pathologist in women with AUB and coexisting pathologies and pressure symptoms [4][11].

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