ORIGINAL ARTICLE

Adenomyosis in Hysterectomy Specimens: Prevalence and Correlation with Age, Parity and Associated Pathology

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ABSTRACT

Objective: To determine the prevalence of adenomyosis in hysterectomy specimens and to correlate it with age, parity and associated pathologies.
Study Design: Descriptive Study.
Place and Duration of Study: This study was carried out at the pathology department, Railway hospital, Islamic International Medical College trust Rawalpindi, from Jan 2008-Dec, 2010.
Materials and Methods: Two hundreds and four hysterectomy specimens were included in the study. Standard histological techniques were followed and at least three sections were taken from the uterine wall. Adenomyosis was diagnosed if endometrial glands and stroma were found at least one low-power field away from the endometrial-myometrial junction.
Results: Out of 204 hysterectomy specimens received in the pathology laboratory during three year study period 47(23%) had adenomyosis. The age of patients with adenomyosis ranged from 32-64 years, a significantly higher prevalence being reported in those aged 40-59 years. A high prevalence of adenomyosis was found in multiparous women. No adenomyosis was found in nulliparous women. The analysis of other pathological entities (one or more in a single specimen), associated with adenomyosis showed uterine leiomyomas in 16 (34%), endometrial hyperplasia in 4 (8.5%) and endometrial polyps in 2 (4.2%) women.
Conclusion: Adenomyosis is commonly found in multiparous women. Definite association with fibroids, endometrial polyps and endometrial hyperplasia cannot be established.

Key words: *Hysterectomy, Adenomyosis, Histopathology.*

Introduction

Adenomyosis is a common benign gynaecological disorder characterized by the heterotopic presence of endometrial glands and stroma within the myometrium, surrounded by smooth muscle proliferation.[1, 2, 3]

The definite diagnosis of adenomyosis has traditionally been made after hysterectomy. Because the junction between endometrium and myometrium in normal uteri is often irregular, the exact criteria for the histopathological diagnosis of adenomyosis are controversial.

The traditional microscopic criteria commonly used by most pathologists is the identification of endometrial glands and stroma, at least one low-power field below the basal layer of endometrium and surrounded by myometrium.[3, 4]

The degree of myometrial invasion is variable and can involve the whole uterine wall up to the serosa.

The prevalence of the condition in hysterectomy specimen varies depending on the diagnostic criteria chosen, from 8.8% to 61.5%.[4]

However with the advent of non-invasive imaging techniques e.g. transvaginal sonography (TVS) and magnetic resonance imaging (MRI), diagnosis of adenomyosis is now possible with sufficient specificity and predictive value prior to any surgical treatment.[1] Furthermore, the direct visualization of the uterine cavity offered by hysteroscopy also broadens the possibilities of reliably diagnosing the entity presurgically.[1] Thus the true prevalence of adenomyosis is still conflicting because of

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different diagnostic modalities used.

Most of the women undergoing a hysterectomy which is followed by a confirmed diagnosis of adenomyosis are in their fourth and fifth decade of life. Parity appears to be an important contributing factor as the majority (>80%) of these women are multiparous. [5,6,7]

It has been commonly found in association with other pelvic pathologies for example leiomyomas, endometrial hyperplasias and endometrial polyps etc.[2,3]

The purpose of this study is to determine the prevalence of adenomyosis in hysterectomy specimens and its correlation with age, parity and associated pathologies.

Materials and Methods

Medical records were retrieved and histo-pathological material re-examined of 204 women who underwent hysterectomy procedure in Railway hospital, Islamic International medical college, Rawalpindi in a three-year period from January 2008 to December 2010.

All specimens had been studied in the surgical pathology laboratory using standard histological techniques. At least three sections were taken from the uterine wall. Adenomyosis was diagnosed if endometrial glands and stroma were found at least one low-power field away from the endometrial-myometrial junction.[3] The histopathological assessment of all hysterectomy specimens received was reviewed by a consultant pathologist.

Other histopathological abnormalities were noted. Age and parity were recorded from the medical records of these patients. Data was analysed to study the prevalence of adenomyosis with regard to age, parity and associated pathology.

Results

Two hundred and four hysterectomy specimens were received in the pathology laboratory during three year study period. Of these, 47(23%) had adenomyosis according to the aforementioned criteria. The ages of patients with adenomyosis ranged from 32-64 years, a significantly higher prevalence being reported in those aged 40-59 years (Table. I). No adenomyosis was found in nulliparous women.

A higher prevalence of adenomyosis was found in multiparous women of parity >4 (57.4%) (Table II).

The analysis of other pathological entities (one or more in a single specimen), associated with adenomyosis showed uterine leiomyomas in 16 (34%), endometrial hyperplasia in 4 (8.5%) and endometrial polyps in 2 (4.2%) (Table III).

Table I: Age Distribution of Patients with Adenomyosis

Age group (yrs)	All patients No (%)	Patients without adeno No (%)	with adeno No (%)	Prevalence %
< 29	3 (1.5)	3 (1.9)	0	0
30 - 39	32 (15.7)	30 (19.1)	2 (4.3)	6.3
40 - 49	113 (55.4)	82 (52.2)	31 (65.9)	27.4
50 - 59	37 (18.1)	25 (15.9)	12 (25.5)	32.4
≥ 60	19 (9.3)	17 (10.8)	2 (4.3)	10.5
All ages	204	157	47	23

Prevalence per 100 patients undergoing hysterectomy in each age group.

Table II: Distribution of Parity of Patients with Adenomyosis

Parity	All patients No (%)	without adeno No (%)	With adeno No (%)	Prevalence %
0	7(3.4)	7(4.5)	0	0
1 - 4	87(42.6)	67(42.7)	20(42.6)	22.9
> 4	110(53.9)	83(52.9)	27(57.4)	20.7
	204	157	47	23

Prevalence per 100 patients undergoing hysterectomy in each parity group.

Table III: Associated Pathologic changes in Patients with Adenomyosis

Associated Pathology	without adenomyosis No (%)	With adenomyosis No (%)
Leiomyoma	56 (35.6)	16(34)
Hyperplasia	15(9.5)	4(8.5)
Endometrial Polyps	9(5.7)	2(4.2)

Discussion

The conclusive diagnosis of adenomyosis at present still depends upon postsurgical histopathological examination of entire uterus. The prevalence of adenomyosis reported in the literature varies from 8% to 38% based on unselected hysterectomies.[8] This wide variation in the reported prevalence is a result of the different diagnostic criteria used, which are based on the invasion of myometrium by glands and stroma either in terms of proportion of uterine wall thickness or absolute measurement. Owing to the great variation in uterine wall thickness, we preferred to use the former. Our study, using standard sampling techniques, found the prevalence to be 23%. This was in accordance with previously reported prevalence in most studies.[7,8,9]

Majority of our patients were between 40 to 59 years of age with maximum being in the 50-59 years age group (Table I). Adenomyosis at younger age is unusual, but higher number of adenomyotic foci in older patients may be related to their higher hysterectomy rate.[7] The peak incidence reported in most other studies is also between the 4th and 5th decades.[7, 8, 10]

All the adenomyotic uteri in our study were from multiparous women. No adenomyosis was identified in cases of nulliparity. These demographic trends in our study are similiar to those of hysterectomy peak incidence in the forties and a higher prevalence in multiparous women in previously published series.[7,11]

According to Israel et al., with every pregnancy, the chance of endometrial penetration into myometrium is increased.[12]

In our study leiomyomas were the commonest associated lesions (34%) [Table III]. The reported incidence of concurrent fibroids has ranged from 19% to 57%.[13, 14]

Many investigators have concluded that this high prevalence reflects an association between adenomyosis and fibroids. However, majority of these studies did not analyze the incidence of fibroids in the control specimens i.e. from women without adenomyosis. Two previous studies by Shaikh and Khan. and Vercellini et al., concluded that fibroids are equally common in the specimens with and without adenomyosis.[7,15] In our study a similar pattern of prevalance of adenomyosis was observed in the presence and absence of fibroids

Endometrial hyperplasia has been noted to be more common in patients with

adenomyosis.[2, 4, 7]

Some recent studies[18] found that endometrial hyperplasia and uterine polyps were significantly associated with adenomyosis.[16,17] Other studies have not always supported this finding.[18] Hysterectomy continues to remain the single most important diagnostic and therapeutic procedure for adenomyosis, making it a retrospective diagnosis. It is equally common in women who have fibroids, endometrial hyperplasia polyps and women who do not.

Conclusion

Adenomyosis is commonly found in multiparous women.Definite association with fibroids,endometrial polyps and endometrial hyperplasia cannot be established.

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