

PREVALENCE OF ADENOMYOSIS IN HYSTERECTOMY SPECIMENS PERFORMED AT A TERTIARY HOSPITAL OF KATHMANDU, NEPAL

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ABSTRACT

Adenomyosis is a common condition, detected in 15-30% of hysterectomy specimens. It is characterized by the presence of endometrial glands and stroma within the myometrium. The data regarding incidence or incidental finding of adenomyosis in hysterectomy specimen is lacking despite this condition being common and bearing serious implications in symptomatology as well as in infertility. Adenomyosis can be incidental finding in hysterectomy done for other gynecologic pathology as well. Hence, this present study has established the prevalence of adenomyosis as well as its association with other uterine pathology in routine hysterectomy specimens. This was a cross sectional study conducted at Nepal Medical College and Teaching Hospital (NMCTH), Kathmandu for a duration of one year (March 2019 to February 2020). Total of 154 hysterectomies were included in the study, out of which 37 cases showed adenomyosis. The prevalence of adenomyosis was 24%. The age group for adenomyosis ranged from 36 years to 52 years with the mean age of 44 ± 4.4 years. The most common pathology other than adenomyosis was leiomyoma (19 cases) followed by two cases of endometriotic cyst, two cases of endometrial polyp, one case of high grade squamous intraepithelial lesion (HSIL), one case of hyperplasia of endometrium with atypia, and one case of serous cyst adenoma of ovary. Thus this study showed that the prevalence of adenomyosis was 24% and was seen higher in the age group of 35-50 years. The most frequent co-pathology in these adenomyosis cases was leiomyoma.

KEYWORDS

Adenomyosis, hysterectomy, leiomyoma

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INTRODUCTION

Adenomyosis is a common condition, detected in 15-30% of hysterectomy specimens. It is characterized by the presence of endometrial glands and stroma within the myometrium.¹ This disorder is seen primarily in reproductive age group and presents with dysmenorrhea, abnormal uterine bleeding, chronic pelvic pain and deep dyspareunia. However, adenomyosis is often an incidental finding in specimens obtained from hysterectomy or uterine biopsies. Women with adenomyosis also have other associated gynecologic conditions such as endometriosis or leiomyomas.²

The recent evolution of diagnostic imaging techniques such as transvaginal sonography, hysterosalpingography and magnetic resonance imaging has contributed to improve the accuracy in identifying this pathology. Hysteroscopy offers the advantage of direct visualization of the uterine cavity while giving the option of collecting histological biopsy samples under visual control.³ Traditionally, adenomyosis was only diagnosed after hysterectomy. However, studies have shown that a diagnosis can be made with biopsies at hysteroscopy and laparoscopy.² But still the histopathological examination of hysterectomy specimen provides the definite diagnosis and is considered the gold standard.

The exact aetiopathogenesis of adenomyosis has not been explained but two main theories may explain its pathogenesis: adenomyosis may arise from invagination of the myometrial basalis into the myometrium or an alternative theory explains that it may result from metaplasia of displaced embryonic pluripotent müllerian remnants or differentiation of adult stem cells.⁴ The data regarding incidence or incidental finding of adenomyosis in hysterectomy specimen is lacking despite this condition being common and bearing serious implications in symptomatology as well as in infertility.⁵

Hysterectomy is a procedure of removal of uterus with or without removal of its adnexa. Uterine, cervical, ovarian pathology or diseases of fallopian tubes are the main reason for its removal. Adenomyosis is also one of the causes of hysterectomy when diagnosed pre-operatively. Adenomyosis can be incidental finding in hysterectomy done for other gynecologic pathology as well. Hence, this study has established the prevalence of adenomyosis as well as its association with other uterine pathology in routine hysterectomy specimens.

MATERIALS AND METHODS

This was a cross sectional study conducted at Nepal Medical College and Teaching Hospital (NMCTH), Attarkhel, Gokarneshwor-8 Kathmandu for duration of one year (March 2019 to February 2020). All hysterectomy specimens (Total abdominal, vaginal and subtotal hysterectomies) operated at NMCTH were included in the study. However, endometrial biopsy and polypectomy cases were excluded. The gross examination was done following standard protocol for hysterectomy specimen. The gross findings suggestive of adenomyosis were noted as i) trabeculated areas in the myometrium, ii) hemorrhagic foci in myometrium and iii) minute cyst formation in the myometrium.⁶ Other gross abnormalities were also noted. Sections from endometrium and myometrium as well as from other parts were taken. The grossed sections were processed using tissue processor (Yorko). Next day routine embedding, cutting followed by staining of the prepared slides with Hematoxylin and Eosin was done. The prepared slides were examined under binocular microscope (Nikon Eclipse E200).

The slides were examined for the presence of endometrial glands and its stroma embedded deep in the myometrium (at least one low power field away from endometrial and myometrial junction).⁷ The diagnosis was made only if the distance between the lower border of the endometrium and the adenomyosis exceeds one half of a low power field (approximately about 2.5mm).⁶ The glands could be in proliferative phase in first half of the cycle while the secretory change in the endometrium of adenomyosis could be absent or incomplete in the secretory phase. The endometrial stroma could be cellular or sparse with central pale area and a more dark staining peripheral cellular area.⁶

Other co-existent pathologic conditions of uterus were also noted down. Uterine, cervical, ovarian and tubal pathology were also observed. The obtained data was entered in Microsoft excel and results were obtained. Ethical clearance was taken from the Institutional Review Committee of NMCTH.

RESULTS

Total of 154 hysterectomies were received during the study period. There were 136 cases of total abdominal hysterectomies whereas 17 cases had undergone vaginal hysterectomy and one case was subtotal hysterectomy as

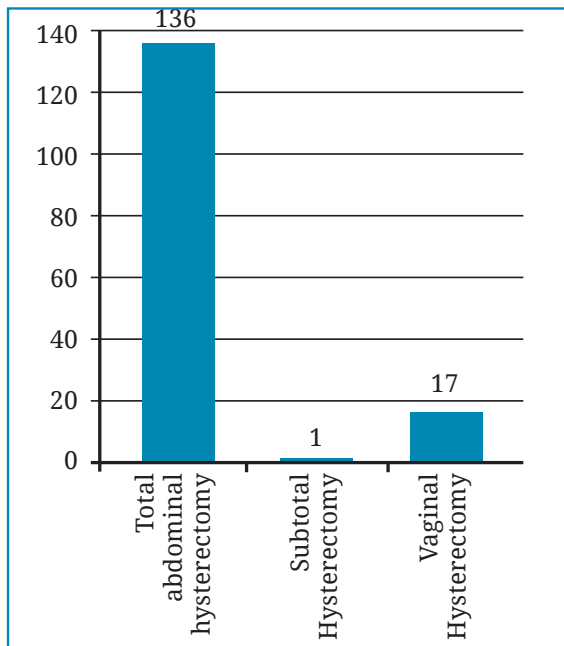


Fig. 1: Different types of hysterectomies.

shown in Fig. 1. Out of 154 hysterectomies, 37 cases showed adenomyosis. The prevalence of adenomyosis was 24%.

Among the different types of hysterectomies, adenomyosis was seen in 37 cases. Out of which, 35 cases had undergone total abdominal hysterectomy and one each had vaginal and subtotal hysterectomy.

Distribution of adenomyosis among different types of hysterectomies are depicted in Table 1. The mean age for adenomyosis is 44 ± 4.4 years, with the median age of 45 years. The age group for adenomyosis ranged from 36 years to 52 years. Adenomyosis was most commonly seen in the age group of 35-40 years followed by 46-50 years (Table 2).

Hysterectomy cases	With adenomyosis (n; %)	Without adenomyosis (n; %)
Total abdominal hysterectomy	35 (23)	101 (65)
Vaginal hysterectomy	1 (1)	16 (10)
Subtotal hysterectomy	1 (1)	0
Total	37 (25)	117 (75)

Age group (years)	n	%
35-40	13	35
41-45	10	27
46-50	12	32
51-55	2	6
Total	37	100

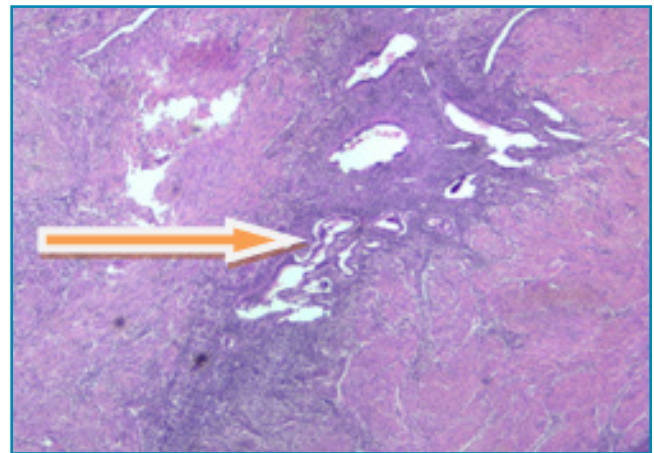


Fig. 2a: Showing presence of endometrial glands and stroma embedded deep within the myometrium (H & E stain; 20x)

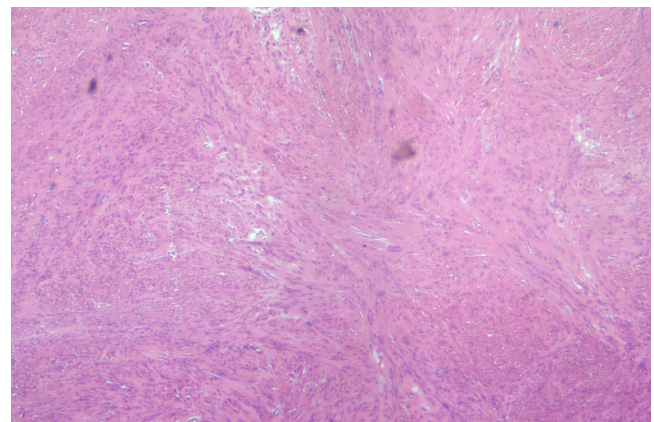


Fig. 2b: Showing microscopic picture of benign muscle bundles of leiomyoma (H & E stain; 20x).

The most common pathology other than adenomyosis was leiomyoma. Out of the 37 cases of adenomyosis (Fig. 2a), 19 cases had co-existent leiomyoma (Fig. 2b) whereas 7 cases had other pathologies like 2 cases with endometriotic cyst, 2 cases of endometrial polyp 1 case of high grade squamous intraepithelial lesion (HSIL), one case of hyperplasia of

endometrium with atypia and one case of serous cystadenoma of ovary.

Association of different types of gynecologic pathologies in association with adenomyosis is shown in Fig. 3.

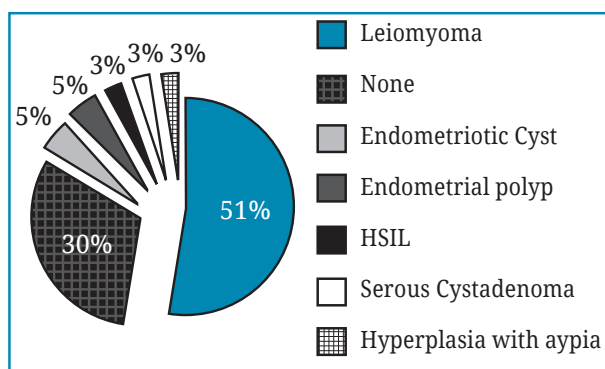


Fig. 3: Adenomyosis associated with different pathologies

DISCUSSION

Adenomyosis, a non-malignant condition of the uterus, is characterized by the presence of endometrial glands as well as stromal elements situated at least 2.5 mm below the endomyometrial junction.^{8,9} This is a common condition detected in 15-30% of hysterectomy specimens.¹

Total of 154 hysterectomies were received during the study period. Out of 154 cases, 136 cases were total abdominal hysterectomies whereas 17 cases had undergone vaginal hysterectomy and one case was subtotal hysterectomy. The number of total abdominal hysterectomies were greater than vaginal hysterectomy (in a ratio of 8:1) which is similar to a study done by Pervez *et al*¹⁰ where out of 861 hysterectomies, 779 were abdominal and remaining 82 were vaginal (in a ratio of 9.5:1).

The age group for adenomyosis ranged from 36-52 years with mean age of 44 ± 4.4 which is almost similar to the mean age in a study done by Tahlan *et al*⁹, Yu *et al*¹¹ and Taran *et al*¹².

Out of 154 cases of hysterectomies, 37 cases showed adenomyosis (24%) which is similar to a study done in Nepal by Shrestha *et al*⁸ in which adenomyosis was seen in 60 of 256 cases (23.4%). The prevalence of adenomyosis between different studies have been compared in the following chart.

The chart comparing the prevalence of adenomyosis in different studies.

Authors	Place of study	Prevalence %
Puente <i>et al</i> ¹³ ; 2016	Spain	24.4
Vercellini <i>et al</i> ¹⁴ ; 1995	Italy	24.9
Parazzini <i>et al</i> ¹⁵ ; 2009	Italy	28.2
Naftalin <i>et al</i> ¹⁶ ; 2012	United Kingdom	20.9
Di Donato <i>et al</i> ¹⁷ ; 2014	Italy	21.8
Present study; 2020	Nepal	24.0

A study done by Morassutto *et al*⁵ stated that adenomyosis was more prevalent after the age of 50 years. Another study by Rizvi *et al*¹⁸ concluded that perimenopausal age group (40-50 years) was the most commonly affected group. The age group in these studies are almost similar to the age group affected by adenomyosis in the present study. The present study showed that 35% of affected patients were of age group 35-40 years followed by 46-50 years age group.

The most frequent co-pathology existing with adenomyosis was leiomyoma which accounted for 19 cases (51%) followed by endometriotic cyst (5%), endometrial polyp (5%), HSIL (3%), hyperplasia of endometrium with atypia (3%), and serous cystadenoma (3%). The similar pattern of combination pathologies was seen in other studies done by Naphatthalung *et al*¹⁹, Sawke *et al*,²⁰ Pervez *et al*¹⁰ and Vavilis *et al*.²¹

Leiomyoma was seen in 19 cases (51%) in this study. Pervez *et al*¹⁰ also showed that leiomyoma accounted for 50.6% concluding that leiomyoma was the most common co-pathology seen in hysterectomy specimens. Our study showed that endometrial polyp (5%) and endometrial hyperplasia (3%) were rare co-existing pathologies. Pervez *et al*¹⁰ also stated that endometrial polyp hyperplasia were rare occurrence accounting for 5.4% and 1.6% respectively.

In conclusion, adenomyosis is quite common in our part of the world with prevalence of 24%. The most common age group affected by adenomyosis was 35-50 years. The most frequent combination of co-pathology in cases of adenomyosis was leiomyoma.

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