Section: Miscellaneous

Original Research Article

CLINICOPATHOLOGICAL AND HISTOMORPHOLOGICAL EVALUATION OF MYOMETRIAL LESIONS IN HYSTERECTOMY SPECIMEN – A TERTIARY CARE HOSPITAL BASED STUDY

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Received *: 05/02/2025*
Received in revised form *: 23/03/2025*
Accepted *: 09/04/2025*

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DOI: 10.70034/ijmedph.2025.2.48

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (2); 268-271

ABSTRACT

Background: Hysterectomy is performed for various uterine pathologies like fibroids, endometriosis, uterine prolapse and various types of cancer. Hysterectomy is the most common gynaecological study performed in women. It is a life saving procedure and it improves the quality of life. Myometrial lesions account for the majority of causes for abnormal uterine bleeding. **Aims and objectives:** 1. The aim of this study is to analyse the various spectrum of histomorphological lesions in uterus from hysterectomy specimen.
2. Correlation of preoperative clinical diagnosis with histopathological diagnosis in hysterectomy specimens
Materials and methods:
This study is a prospective and a retrospective analysis of 80 hysterectomy specimens reported to the department of Pathology, January 2020-2021 in Sri Lakshmi Narayana institute of medical sciences. The histopathological findings of hysterectomy specimens were noted and these findings are correlated with clinical diagnosis
Results: The most common type of hysterectomy was total abdominal hysterectomy with bilateral salpingo-ophorectomy (52.5%). Most common clinical diagnosis is fibroid. Most common age group was 41-50yrs. The most common clinical indication for hysterectomy was fibroid uterus. In case of myometrium leiomyomas are the most common lesions followed by adenomyosis.
Conclusion: The histomorphological analysis is mandatory for all hysterectomy specimens for confirming the preoperative clinical diagnosis and to improve the quality of life.

INTRODUCTION

Uterus and cervix are important female genital organs. Uterus is a hormone responsive female reproductive organ.[1] Important function of uterus includes cyclical shedding of endometrium and pregnancy. Corpus uteri includes endometrium and myometrium. Anatomically uterus is composed of endometrium, myometrium and perimetrium. The lesions of the corpus of the uterus along with pathologies of cervix together constitutes most of the patient visit to the gynaecologist.[2] aMyometrium of uterine corpus is composed of smooth muscles and gives rise to various neoplastic and non neoplastic lesions(3). Prevalence of uterine and adnexal pathologies are varied and the lesions that affect the uterine corpus constitute bulk of gynaecological pathologies like hyperplasias, polyps, adenomyosis, fibroids, endometriosis, inflammatory lesions like

PID and neoplastic proliferations.[10] Some of the most common complaints of women presenting to gynaecological clinic are vaginal discharge , bleeding per vaginum, difficulty in micturition, abdominal pain, menstrual irregularities, post menopausal bleeding, postcoital bleeding and prolapse.[4] Most common benign tumors of myometrium are leiomyomas. These benign tumors are often symptomatic and 20-30 % of them occur in women of reproductive age group.[5] Leiomyomas have excces of estrogen receptor compared to normal myometrium and hence are estrogen dependant.[6,7] The most important clinical manifestation is menorrhagia (in 30% of cases). Dysmenorrhoea, abdominal pain, mass, pressure symptoms, infertility and repeated miscarriages may be the presenting symptoms.[8] 50% of the leiomyomas are asymptomatic.

The second most common frequently found lesion in the myometrium is adenomyosis. The clinical diagnosis of adenomyosis is difficult because of its non specific symptoms. Patients usually presents with menorrhagia and dysmenorrhoea. The frequency of adenomyosis histologically varies from 5-70%.[9] One of the most commonly performed gynaecological surgery is hysterectomy. Historically Charles Clay performed the first subtotal hysterectomy in Manchester England in 1843 and the first Total abdominal hysterectomy was done in 1929.[11] It's a successful surgery in terms of patient satisfaction and symptom relief. There are 2 types of hysterectomy. One is vaginal and other is abdominal hysterectomy. Histopathological examination of hysterectomy specimens is very essential for diagnosis and further treatment. The Prevalence of myometrial lesions of uterus varies from one country to another and from one region to another within the country. This study is entitled to study various gross and histopathological spectrum of various lesions of myometrium and to correlate the preoperative findings with histopathological findings.

MATERIALS AND METHODS

The present study was a retrospective study of the gross and histopathological findings of uterus in 80 hysterectomy specimens received in the Department of Pathology, Sri Lakshmi Narayana institute of medical sciences, Puducherry over a period of one year from Jan 2020 to Jan 2021.

Inclusion criteria: All hysterectomy specimens with uterine indications for hysterectomy irrespective of type of surgery were included in the study.

Exclusion criteria: Hysterectomy specimens with indications for pathologies related to fallopian tubes and ovaries and cervix were omitted from the study.

The hysterectomy specimens received were immediately transferred into 10% fresh formalin. After 24 hours fixation, the specimen was examined grossly and necessary sections were obtained from uterus that includes endometrium, myometrium, ectocervix and endocervix. Additional bits were taken depending on the pathology present. The tissue bits were then processed in tissue processor and then paraffin blocks were made and care was taken to ensure proper labelling of the paraffin blocks. Approximately 2-3µ thick sections were cut with the help of microtome and were stained routinely by Hematoxylin and Eosin stain and special stains were used wherever necessary. The histopathological findings of uterus were then noted and these findings were then correlated with clinical diagnosis. Requisition form without proper clinical information or particulars of the patient were excluded. Analysable data from histopathology database were analysed using SPSS 16.0 version. The study was aimed to evaluate the wide range of pathological lesions and commonly involved pathology in the hysterectomy specimens and correlation of the preoperative clinical diagnosis with the histopathological diagnosis.

RESULTS

Table 1: Age distribution of case presenting with lesion in corpus uteri

S.no	Age in years	Number of cases	Percentage
1	21-30	4	5%
2	31-40	27	33.75%
3	41-50	46	57.5%
4	51-60	3	3.75%

Table 2: Clinical indication for hysterectomy

s.no	Clinical diagnosis	Number	Percentage
1	Fibroid	45	56.25%
2	UV prolapse	20	25%
3	Adenomyosis	9	11.25%
4	AUB	2	2.5%
5	Abdominal mass	1	1.25%
6	Endometrial polyp	3	3.75%

Table 3: Histopathological spectrum of lesions in hysterectomy specimens

s.no	Histopathological diagnosis	Number of cases	Percentage
1	Leiomyoma	49	61.25%
2	Adenomyosis	10	12.5%
3	Leiomyoma; adenomyosis	9	11.25%
4	Leiomyomatous polyp	2	2.5%
5	Unremarkable	10	12.5%

Figure 1: Gross image of large intramural leiomyoma showing well circumscribed, whitish whorled mass

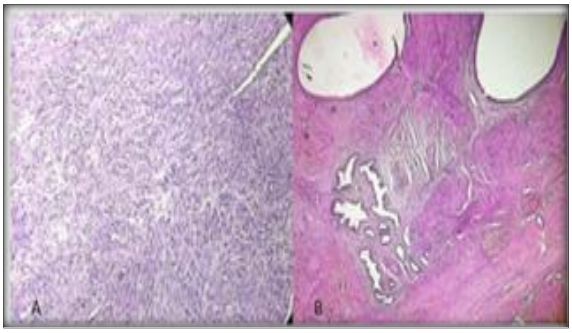

Figure 2A:Section Stained with Haematoxylin and Eosin Stain (40x) Leiomyoma Showing Mass Composed of Elongated Spindle Shaped Cells Arranged in Fascicles

Figure 2B: Section Stained with Haematoxylin and Eosin Stain (10x) Myometrium showing adenomyosis (Endometrial Glands & Stroma)

DISCUSSION

The history of knowledge of the uterine corpus is as interesting as ever. Hippocrates (460-377 B.C.) stated that uterus has several cavities allowing one gestation in each. Famous sketches of Leonardo Da Vinci (1452- 1519) revealed the uterus to contain only one cavity.[12] Langenbeck and John Collins performed vaginal hysterectomy specimen which was unsuccessful. Later fenger performed and described the modern operation of vaginal hysterectomy. Amussat (1840) performed the first recorded myomectomy. Max Brodel's illustrated the Richardson's technique of total abdominal hysterectomy.[13] Hysterectomy is the most commonly performed gynaecological study world wide. Many women wish to preserve their fertility and hence hysterectomy has social, psychological, hormonal and sexual effect on females life. Hence the indication and justification for hysterectomy should be appropriate. It gives maximum extent of symptom relief, satisfaction and definitive treatment for patients. So here comes the role of histopathology which is the gold standard method in confirming the clinical diagnosis.

The main aim of this study is to understand the histopathological spectrum of myometrial lesions and their correlation with preoperative diagnosis. In this study a total of 80 hysterectomies which were submitted to the department of pathology for histopathological diagnosis were included. There were total of 80 patients included in this study as described in table 1. Among which the most common age group is 41- 50 years which is in concordance with other studies.[14,15] 51.5% of patients had hysterectomy from this age group. The mean age of all patients with myometrial lesions is 46.5 yrs,[16] and the age range is from 20 – 60 yrs . The youngest patient in this study is 22 yrs and the oldest patient is 60 years.

The most common preoperative clinical diagnosis for hysterectomy as given in table 2 is fibroid (56.25%) followed up uterine prolapse (25%). Our study is concordant with the study conducted by Ajmera et al. and Archana et al. and Sachin et al.[17,18,19] but discordant with the study done by Shakira et al. (20). In the present study 39 (48.7%) patients among 80 had clinicopathological correlation. This is in concordance with Gupta G et al. (46.4%) (21)

The most common route of hysterectomy is total abdominal hysterectomy with bilateral salpingo-opherectomy (62.5%) which is correlated with previous studies.[16,17] The indication for hysterectomy depends upon the clinical features and diagnosis. Pathology in the uterus varies from benign to malignant. Type of hysterectomy depends on the pathology involved and the age of the patient. Total abdominal hysterectomy is associated with increased post-operative complications, prolonged hospital stay and is expensive when compared to other types; If the lesion is confined to the uterus vaginal hysterectomy is the treatment of choice as it carries less risk.[23] Leiomyoma can occur anywhere in the myometrium. Grossly the most common location was intramural (73.5%) followed by mixed (11.25%), submucosal (8.25%) and subserosal (6.25%). Histopathologically the most common myometrial lesion is leiomyoma (61.25%).[22] This is similar to a study done by study done by Rahat et al. In a large study of histomorphological features of leiomyomas done in 1845 hysterectomy specimens by Manjula et al.[25] over a period of 2 years there were 23.90 % cases of neoplastic lesions of myometrium of which 99.54 % were leiomyomas. Second most common lesion is adenomyosis (12.5%) and then leiomyoma

with adenomyosis (11.25%). There were no malignant cases encountered in the present study.

Leiomyoma is the most common benign tumor encountered in our study. Most women are asymptomatic while others may have dysmenorrhea, increased frequency of urination due to pressure effects of fibroid on bladder. Leiomyoma also causes mild to severe lower back pain. Leiomyomas undergo secondary changes which can be seen grossly as necrosis, infarction, haemorrhage and other degenerative changes. Microscopic examination of leiomyomas shows whorled and anastomosing fascicles of spindle shaped to fusiform cells of similar size. These cells have abundant fibrillar and eosinophilic cytoplasm with an elongated nuclei having finely dispersed chromatin with inconspicous nucleoli.[24] The second most common myometrial lesion seen in present study was adenomyosis. Posterior wall of the uterus is the most commonly involved region by adenomyosis. In mild cases the size of the uterus remains unchanged. Superficial invasion of endometrial glands and stroma into the myometrium is called superficial adenomyosis. Deep adenomyosis is when penetration is clearly within the myometrium causes gross and microscopic pathology.[24] The diagnostic criteria for adenomyosis is presence of endometrial glands and stroma at least one low power field below the basal layer of endometrial gland which is surrounded by myometrium. Preoperative diagnosis of adenomyosis is difficult and its done very rarely. There is no specific clinical symptom of its own and its usually diagnosed histopathologically. 11.25% of cases had both leiomyoma and adenomyosis. Similar associations have been seen in various other studies.

CONCLUSION

The present study gives data about various spectrum of myometrial lesions in hysterectomy specimens. Histopathological examination is the gold standard technique to confirm the preoperative clinical diagnosis. The histomorphological analysis was found to correlate well with clinical findings. However few lesions were incidental findings. In order to ascertain proper postoperative care and patient management it is essential to subject all hysterectomies to histopathological examination.

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