

CLINICOPATHOLOGICAL STUDY OF UTERINE LEIOMYOMA WITH VARIOUS ASSOCIATED PATHOLOGIES IN A TERTIARY CARE CENTER.

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ABSTRACT

Objectives: The present study was conducted to find the clinicopathological features of uterine leiomyoma seen in hysterectomy and myomectomy specimens.

Methods: A 2-year retrospective study was done from January 2021 to December 2022 at Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar. 100 patients diagnosed with leiomyoma on histopathological examination of hysterectomy specimens were included in the study.

Results: Uterine leiomyoma was most common in women in the age group of 41–50 years (80%) and presented with abdominal pain (60%). The most common location was intramural (40%), and the most common degeneration was a hyaline change (18%).

Conclusion: The benign tumor of smooth muscle, uterine leiomyoma, is commonly seen in perimenopausal females. Leiomyoma is associated with various pathologies, comprising degenerative changes and coexisting benign and malignant lesions. Hence, histopathological examination should be done to identify the spectrum of uterine leiomyoma and associated pathologies.

Keywords: Uterine leiomyoma, Hysterectomy, Pathological changes.

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INTRODUCTION

Uterine leiomyomas are one of the most common benign tumors of the uterus seen in women of the reproductive age group. These constitute 5–10% of all uterine tumors [1]. These are also known as uterine leiomyomata. Uterine leiomyomas, or uterine myomas, are benign growths of uterine smooth muscles which are accompanied by connective tissue. Their predominant occurrence in the reproductive age group is associated with concurrent expression of higher levels of estrogen receptors, and they tend to shrink during hypoestrogenic states such as after menopause [2,3]. They are estrogen dependent, concurrently seen with endometrial hyperplasia [4]. Leiomyomas are usually asymptomatic but may cause menstrual disorders such as menorrhagia, dysmenorrhea, lower abdominal pain, presented with pelvic mass, and infertility [5]. Symptomatic leiomyomas are treated by myomectomy in younger women. Hysterectomy is done in those who have completed their family [6]. Clinical and pathological features vary from place to place and also change with time. The aim of the current study was to determine the histopathological evaluation of leiomyoma with degenerative changes and associated pathologies.

Aim and objectives

The present study was conducted to assess the clinical profile of patients suffering from leiomyoma of the uterus and the associated pathological changes seen in these leiomyomas.

METHODS

The present retrospective study was conducted in the Department of Pathology, Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar, Telangana, for a period of 2 years, from January 2021 to December 2022, after obtaining clearance from the ethical committee. A total of 100 cases were included in the study, along with their relevant clinical and radiological data. Consent was taken after an explanation of the procedure and its benefit to the patients. Patients reporting to the OPD or emergency of the gynecology department of the institute and

found to be suffering from leiomyoma of the uterus were included in the study.

A detailed history was taken from all the patients, a complete physical examination was done, and patients underwent routine investigations as well as those needed for the diagnosis of leiomyoma of the uterus. During the operation, the size of the uterus, the number of fibroids, and their location were noted. The excised uterine specimen was sent to the department of pathology.

It was cut in the midline anteriorly to examine the inner portion of the uterus. The specimen was fixed in 10% formalin for 24–48 h, and multiple sections were prepared. The tissue bits were taken from the cervix, endometrium, and myometrium, including fibroid, as well as from any area with abnormal pathology. Multiple sections of a thickness of 5 microns were cut and stained with hematoxylin and eosin. The degree of cellularity, cytological atypia, and the presence of secondary changes, including necrosis, margins of tumor, and intravascular invasion were noted.

Sample size

A total of 100 cases were included in the study, along with their relevant clinical and radiological data.

Inclusion criteria

- Age group: 31–70 years
- Gross Specimen: Hysterectomy specimen
- Microscopic diagnosis: Leiomyoma.

Exclusion criteria

- Age: <30 years.

RESULTS

In the present study, 100 cases of uterine leiomyoma were studied during the period of 2 years.



Fig. 1: A gross image of a hysterectomy specimen showing intramural leiomyoma

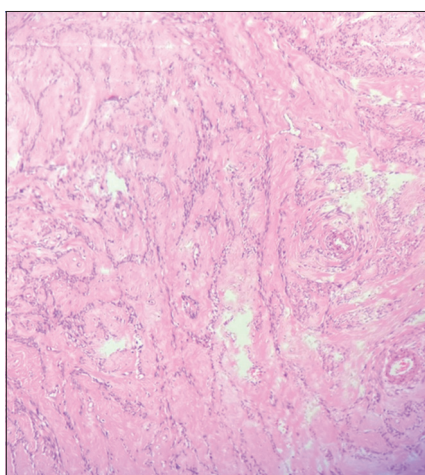


Fig. 2: Photomicrograph of a uterine leiomyoma with hyaline degeneration. (Hematoxylin and Eosin, ×100)

The age of the patients in the present study ranged between 31 and 70 years. The majority of the patients were in the age group of 41–50 years (60%), followed by patients in the age group of 51–60 years (20%), and the least were in the age group of >60 years (4%) (Table 1).

The predominant presenting symptom seen in cases with uterine leiomyoma is menorrhagia, which was seen in 40% of cases, and abdominal pain was seen in 30% of cases. 6% suffered from urinary symptoms, and infertility was seen in 2% of cases (Table 2).

The predominant endometrial pattern seen in cases with uterine leiomyoma is proliferative, which is seen in 40% of cases. Secretory endometrium was seen in 34%, hyperplastic in 8%, and atrophic in 6% of cases (Table 3).

Most of the cases had intramural fibroid (40%), followed by submucosal in 30% of cases, subserosal in 16% of cases, and adenomyosis in 14% of cases (Table 4).

Hyaline degeneration was seen in 18% of cases, cystic degeneration in 8%, myxoid and red degeneration was seen in 4% of cases, and 70% of cases did not show any degeneration (Table 5).

Size of leiomyoma

In the present study, on gross examination, the size of intramural leiomyoma varied from a few millimeters to 10×7.5×5 cm, subserosal

Table 1: Age distribution of cases

Age (in years)	Frequency	Percentage
<40	16	16
41–50	60	60
51–60	20	20
>60	4	4

Table 2: Clinical presentation of cases

Presenting symptom	Frequency	Percentage
Menorrhagia	40	40
Pain abdomen	30	30
Dysmenorrhea	12	12
Urinary symptoms	6	6
Infertility	2	2
Others	10	10

Table 3: Endometrial phases seen on histopathology

Endometrial changes	Frequency	Percentage
Proliferative	40	40
Secretory	34	34
Hyperplastic	8	8
Atrophic	6	6
Non-secretory	12	12

Table 4: Location of leiomyoma

Location of leiomyoma	Frequency	Percentage
Intramural	40	40
Subserosal	16	16
Submucosal	30	30
Adenomyosis	14	14

Table 5: Degenerations seen in leiomyoma

Degeneration seen	Frequency	Percentage
Hyaline	18	18
Cystic	8	8
Myxoid	2	2
Red	2	2
None	70	70

leiomyoma was found to have size varied from a few millimeters to 6.5×5.0×4.0 cm, and submucosal leiomyoma varied from few millimeters to 4.0×2.0×1.5 cm.

DISCUSSION

Uterine leiomyoma is the most common benign smooth muscle tumor of the uterus. It is believed that up to 70% of women have uterine leiomyoma at some stage of their lives, with a high incidence at reproductive age. In our study, the age group of the patients ranged from 31 to 70 years, and a majority of the patients were in the age range of 41–50 years (59.16%), which is in concordance with other studies done by Gupta *et al.* [7] (51.40%), Rather *et al.* [8] (47.20%), Gowri *et al.* [9] (49%), and Bhatta *et al.* [10] (54.76%).

In the present study, menorrhagia and pain in the abdomen were the most common presenting chief complaints of the patients, accounting for 40.0% and 30.0%, respectively. Menorrhagia was also the presenting complaint in many other studies done by Rather *et al.* [8] (47.20%), Gowri *et al.* [9] (49%), Manjula *et al.* [11] (35.40%), and Lahori *et al.* [12] (37.97%), which is in concordance with our study.

In the present study, leiomyoma of the uterus was the most common pre-operative diagnosis. Grossly, fibroids appear as round, well-circumscribed, solid nodules that are white or tan and show a whorled appearance on a histology section [13]. We have also seen leiomyomas well-circumscribed; on the cut section, it appeared gray white with a whirling pattern. On microscopic examination, tumor cells are seen as spindle shaped, with an elongated nucleus arranged in the form of bundles and whorls.

In the present study, proliferative endometrium was the most common endometrial phase associated with leiomyoma, which is seen in 40.0% of cases, followed by the secretory phase and hyperplastic pattern observed in 34.0% and 8.0% of cases, respectively. Gowri *et al.* [9] and Jalandhara *et al.* [14] findings were in accordance with our study.

In our study, most of the cases were intramural fibroid (40.0%), submucosal in 30.0% of cases, and subserosal in 16.0%. Bhatta *et al.* [10] reported that most of the hysterectomy specimens showed single leiomyoma (80.95%). Intramural leiomyoma was most commonly seen in 51.2% of patients. Gowri *et al.* [9] found that 48% of cases had intramural leiomyomas, subserosal (16%), submucosal (3%), and 33% had leiomyomas in more than one location. Lahori *et al.* [12] also found that the most common site of leiomyomas was intramural (57.43%), followed by subserosal leiomyomas (30.69%), submucosal leiomyomas constituted 8.91% of cases, while broad ligament leiomyomas were in 2.97% of cases. Jalandhara *et al.* [14] reported that intramural leiomyoma was the most common variety seen in 60% of the cases, 4% were submucous, 20% were subserous, and adenomyosis was seen in 16% of the cases.

Hyaline degeneration was found in 18.0% of cases, cystic degeneration in 8.0%, myxoid degeneration, and red degeneration in 4.0% collectively. 70.0% of cases did not show any degeneration. Gowri *et al.* [9] reported that secondary changes occurring within leiomyomas were present in 23.6%. Hyalinization (16.9%) was the most common secondary degenerative change, followed by cystic (9%) and myxoid (1.6%) changes. Lahori *et al.* [12] observed that degenerative changes were observed in 16.46% of leiomyomas. Among these, 6.33% of leiomyomas showed that the most common degenerative change was hyaline degeneration, 3.8% showed myxoid change, 3.8% showed calcification, 3.8% showed cystic, and 2.53% demonstrated red degeneration.

Histopathological examination of excised leiomyoma is helpful in the proper evaluation of the nature of the lesion and in adequate management of the cases. Endometrial patterns and secondary changes in leiomyoma were crucial to the understanding of the pathology [15].

CONCLUSION

Leiomyoma was the most common benign tumor of smooth muscle seen in gynecological practice. Menstrual disturbances were the most common symptom, of which menorrhagia was the most common presentation. Most of these tumors were intramural in location. The

most common pattern of endometrium was proliferative. Hyaline degeneration, myxoid degeneration, and cystic degeneration were the most common secondary changes seen in the fibroid uterus. Hence, histopathological diagnosis was the mainstay to identify the spectrum of uterine leiomyomas with various associated pathologies.

CONFLICT OF INTEREST

The authors declared no conflict of interest.

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None.

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