

## Original Research Article

# Clinicopathological features of uterine fibroid in a tertiary care teaching hospital

Priyanka Singh<sup>1</sup>, Sadaf Mirza<sup>1\*</sup>, Pawan Trivedi<sup>1</sup>, Tanya Singh<sup>2</sup>

<sup>1</sup>Department of Pathology, Mayo Institute of Medical Sciences, Barabanki, Lucknow, Uttar Pradesh, India

<sup>2</sup>Department of Obstetrics and Gynecology, Consultant Indira IVF, Lucknow, Uttar Pradesh, India

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### \*Correspondence:

Dr. Sadaf Mirza,

E-mail: sadafazmi2@gmail.com

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## ABSTRACT

**Background:** Uterine fibroids are one of the common benign tumours of uterus seen in women of reproductive age group. These constitute 5-10% of all these tumours.

**Methods:** Total of 56 patients above 21 years of age reporting to OPD or emergency of gynaecology department of the Mayo Institute and found to be suffering from leiomyoma of the uterus were included in the study.

**Results:** Clinical manifestations seen in cases with uterine fibroid. Menstrual irregularities were seen in 69.64% of cases. 39.28% suffered from abdominal pain and infertility was seen in 10.71% cases. Endometrial changes during the histopathological examination. In 71.42% of cases, proliferative endometrium was found. Secretory endometrium was seen in 14.28% and atrophic in 8.92%.

**Conclusions:** Leiomyoma is the most well-known uterine tumor seen in gynecological practice. Feminine aggravations are the commonest manifestation of which menorrhagia is the most well-known show. The vast majority of these tumors are intramural in area. The most widely recognized example of endometrium noticed is proliferative. Hyaline degeneration, myxoid degeneration and cystic degeneration are the normal auxiliary changes found in fibroid uterus.

**Keywords:** Uterine leiomyoma, Pathological changes, Hysterectomy, Degeneration

## INTRODUCTION

The female uterus is a crucial reproductive organ that responds to hormones.<sup>1</sup> The myometrium is the uterus' thick, smooth muscular covering beneath the endometrium, which is protected by the peritoneum-derived serosa.<sup>2</sup> Uterine fibroids are a type of benign uterine tumour that is commonly encountered in women of reproductive age. These tumours account for 5-10% of all tumours.<sup>3</sup>

Uterine leiomyomata and uterine myomas are benign growths of the uterine smooth muscles that are accompanied by connective tissue. Their predominance in the reproductive age group is linked to the simultaneous expression of larger amounts of oestrogen receptors, and

they shrink during hypoestrogenic situations like menopause.<sup>4</sup> They are characterised as intramural, subserosal, submucosal, and cervical according on their location. Intramural fibroids are the most prevalent and are found within the uterine wall. Fibroids that are found beneath the mucosal surface of the uterus are known as subserosal fibroids. Submucosal fibroids are fibroids that form beneath the lining of the uterus and cause the uterine cavity to deform. Cervical fibroids are found in the cervix's wall.<sup>5</sup>

The majority of leiomyomas are asymptomatic. Depending on the size, location, and hormonal impacts, symptoms may appear. The most prevalent clinical symptom is menorrhagia. Dysmenorrhoea, pain, and a sense of a lump in the belly are other symptoms. Infertility

and sexual dysfunction are also possible outcomes.<sup>6</sup> In younger women who want to keep their reproductive ability, symptomatic leiomyomas are treated with myomectomy. Hysterectomy is performed on women who have finished their families.<sup>7</sup> Clinical and pathological characteristics differ from location to place and change throughout time. There hasn't been any current research in this area. As a result, this research was carried out.

The objective of this study was to find the uterine fibroid's clinicopathological features in a tertiary care teaching hospital.

**METHODS**

This retrospective present study was conducted in the department of pathology, Mayo Institute of Medical Sciences and Mayo Hospital, Barabanki, Lucknow, Uttar Pradesh, India in collaboration with gynaecology department during the period from November 2020 to March 2021.

Total of 56 patients above 21 years of age reporting to OPD or emergency of gynaecology department of the Mayo Institute and found to be suffering from leiomyoma of the uterus were included in the study. Patients, who were seriously ill, who did not give consent or in which biopsy specimen could not be processed properly were excluded from the study. The excised surgical specimen was received in the department of pathology were properly labelled, numbered and fixed in 10% neutral buffered formalin for 24-48 hours. The gross specimens were examined for the location, number, degenerative changes in leiomyoma and associated pathologies. Representative sections were taken which were processed in automated tissue processor and embedded in paraffin wax.

The blocks were sectioned and stained routinely with haematoxylin and eosin, examined under light microscope and the results were obtained and finally diagnosed as leiomyoma. Ethical approval from the Institutional Ethics Committee was obtained. The study participants were informed about the importance and informed consent was taken. Confidentiality of records was maintained. The findings were noted in pretested semi-structured proforma.

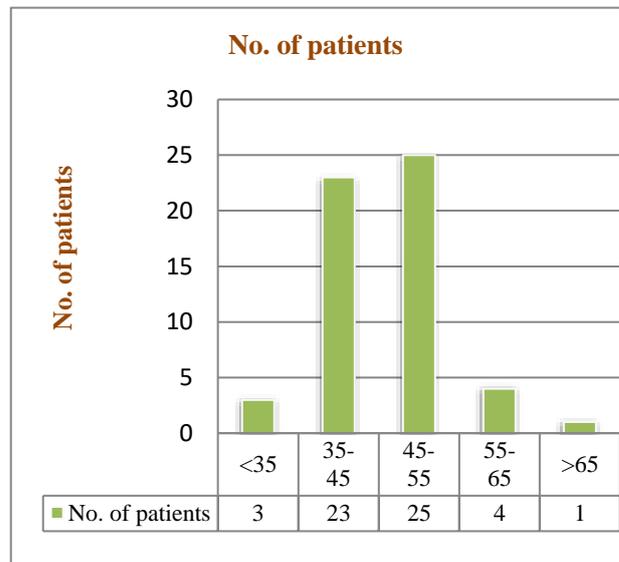
Data analysis was performed with Microsoft excel.

**RESULTS**

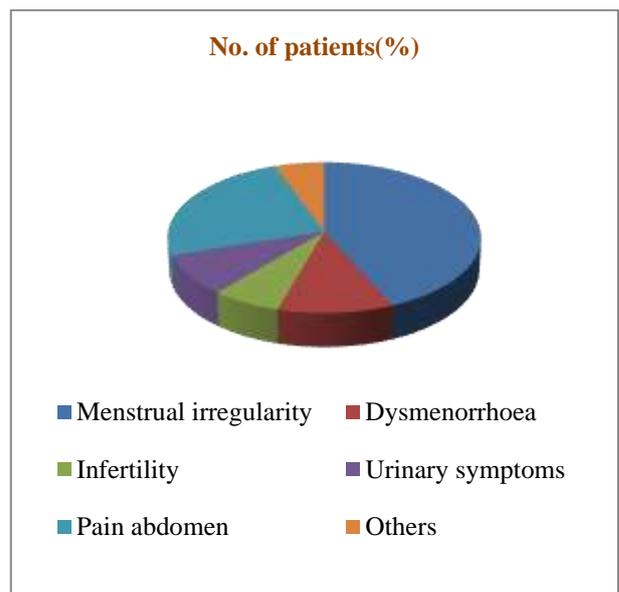
In this study, a total of fifty-six cases of uterine leiomyoma were examined. Figure 1 shows the age of the patients ranged from 35-67 years and majority were in the age group of 45-55 years, accounted 44.64% cases followed by patients in the age group of 35-45 years accounted as 41.07%. Figure 2 shows the clinical manifestations seen in cases with uterine fibroid. Menstrual irregularities were seen in 69.64% of cases. 39.28% suffered from abdominal pain and infertility was seen in 10.71% cases. Figure 3 shows endometrial changes during the histopathological

examination. In 71.42% of cases, proliferative endometrium was found. Secretory endometrium was seen in 14.28% and atrophic in 8.92%.

Table 1 shows complications in the uterine fibroid. Chronic cervicitis was present in 76.78% of cases. 14.28% of cases had cystic ovaries and 7.14% had adenomyosis. Table 2 shows the location of the fibroid. Most of the cases had intramural fibroid (58.92%). It was subserosal in 19.64% cases and submucosal in 3.57%. Figure 6 shows degenerations seen in fibroid upon histopathological examination. Hyaline degeneration was seen in 21.42% cases, cystic degeneration in 3.6% and myxoid degeneration in 3.6%. 67.85% of cases did not show any degeneration.



**Figure 1: Shows the distribution of different age group.**



**Figure 2: Shows the clinical manifestation of the patients.**

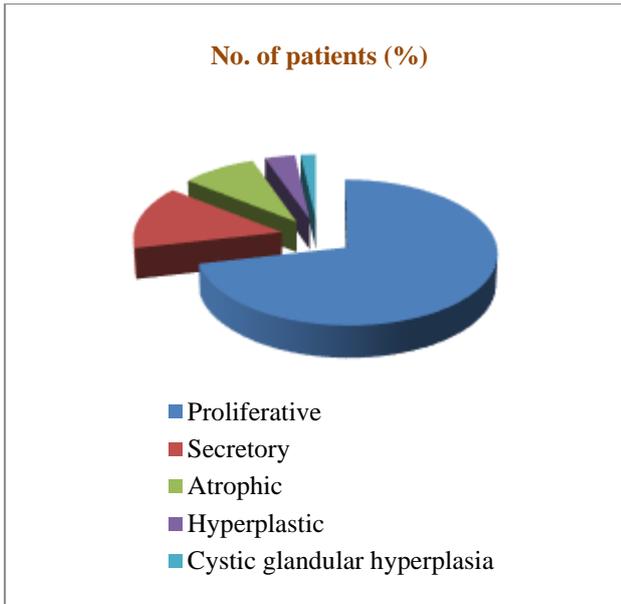


Figure 3: Shows the endometrial changes seen in the patients.

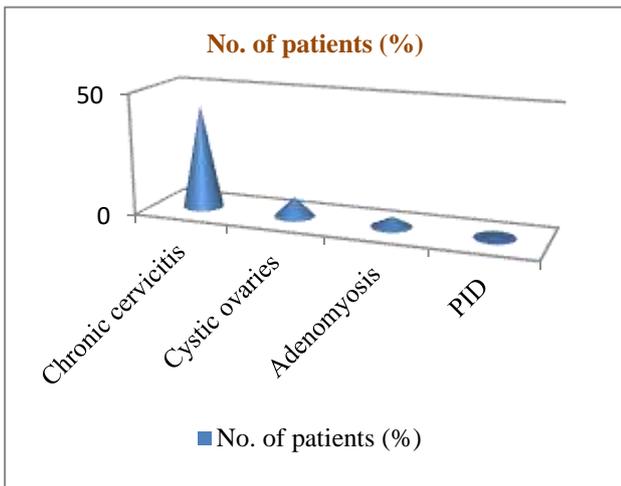


Figure 4: Shows the complications of uterine fibroid.

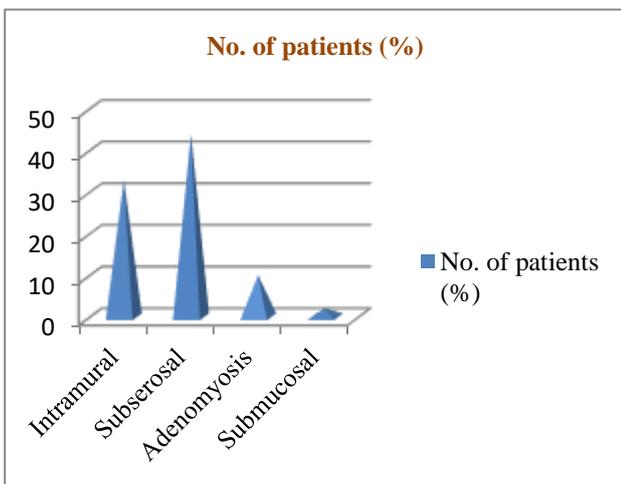


Figure 5: Shows the location of fibroid.

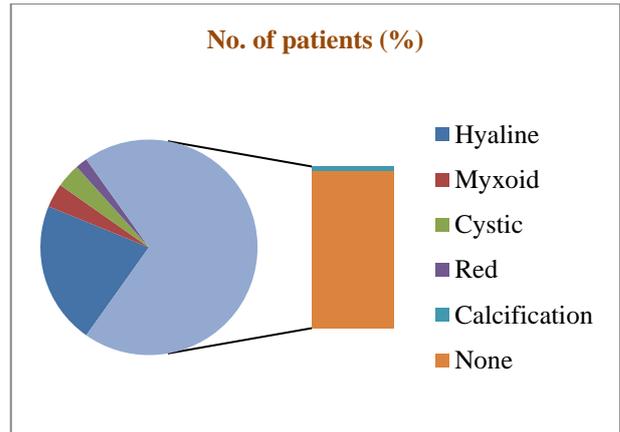


Figure 6: Shows the degenerations seen in fibroid.

Table 1: Shows the complications of uterine fibroid.

Complications	No. of patients (%)	
	N	%
Chronic cervicitis	43	76.78
Cystic ovaries	08	14.28
Adenomyosis	04	7.14
PID	01	1.78

Table 2: Shows the location of fibroid.

Location of fibroid	No. of patients (%)	
	N	%
Chronic cervicitis	33	58.92
Cystic ovaries	11	19.64
Adenomyosis	10	17.85
PID	02	3.57

## DISCUSSION

Uterine fibroid is the most frequent uterine tumour. It's also known as leiomyoma or uterine myoma, and it's made up of smooth muscle cells mixed in with the uterus' connective tissue. These tumours can be single or numerous, and they can be solitary or widespread. The fundus and uterine body are two of the most common locations. Cervical leiomyomas are quite uncommon.<sup>8</sup>

The pathophysiology of leiomyomas suggests that they develop as a result of the proliferation of smooth muscle cells and connective tissue. Smooth muscle cells are shown to proliferate monoclonally. Increased oestrogen and progesterone receptors have been found to be related with certain tumours. Fibroid proliferation is linked to elevated oestrogen levels and is most common during the reproductive phase.

As seen following treatment with GnRH agonist medication or during menopause, a reduction in oestrogen levels is linked to tumour regression.<sup>9</sup> They have a wide range of clinical symptoms that are connected to the pressure caused by the tumours or by menstrual

irregularity. Backache, abdominal pain, frequent urination, tinismus, abdominal heaviness, and bloating are all pressure symptoms.

Menorrhagia and dysmenorrhoea are two types of menstrual abnormalities. Infertility is also reported in extreme circumstances. During pregnancy, large fibroids can lead to miscarriage, APH, foetal malposition, and preterm labour.<sup>10</sup> The uterine fibroids appear as well-circumscribed, hard, grey-white bulging lesions on the surface. The myometrium can be easily differentiated from them. The sliced surface appears whorled under a microscope, with cells grouped in crisscrossing fascicles. They're linked to secondary alterations and degenerations that change the way things look on the outside.

The most frequent type of hyaline degeneration/necrosis, which affects more than 60% of women after menopause, is hyaline degeneration/necrosis. In 4% of cases, cystic degeneration, fatty degeneration, myxoid alteration, and calcification occur. After menopause, these tumours develop atrophy, substantial shrinkage, and fibrosis. The thrombosis of tumour vessels causes red degeneration, which is linked to pregnancy and contraceptive use.<sup>11,12</sup> In 69.64 percent of cases, menstrual abnormalities were observed. Abdominal pain affected 39.28 percent of the participants, while infertility was reported in 10.71 percent of the cases. Menorrhagia was the most common symptom in 37.97 percent of cases, followed by abdominal discomfort in 18.99 percent of cases and dysmenorrhoea in 17.72 percent of cases, according to Lahori et al.<sup>13</sup>

Menstrual disturbances were the most common manner of presentation (76%) according to Jalandhara et al with menorrhagia accounting for 64 percent of the cases and primary infertility accounting for 15% of the cases.<sup>14</sup> Hyaline degeneration was found in 21.42 percent of the cases, cystic degeneration was found in 3.6 percent, and myxoid degeneration was found in 3.6 percent. There was no deterioration in 67.85% of the instances. According to Bhatta et al, hyaline degeneration was the most common (7.14 percent), followed by calcific degeneration (1.78 percent). The bulk of leiomyomas did not show any signs of degeneration (89.28 percent).<sup>13</sup> Secondary alterations within leiomyomas were found in 23.6 percent of cases, according to Gowri et al.

The most common subsequent degenerative alteration was hyalinisation (16.9%), followed by cystic (9%) and myxoid (1.6%) changes.<sup>3</sup> Degenerative alterations were found in 16.46% of leiomyomas, according to Lahori et al. 6.33 percent of leiomyomas had hyaline change, which was the most prevalent degenerative change seen, 3.8 percent had myxoid change, 1.8 percent had calcification, 3.6 percent had cystic degeneration, and 1.8 percent had red degeneration.<sup>12</sup>

Histopathological study of removed Fibroid is helpful in determining the nature of the lesion and poor case management. Understanding the pathophysiology requires

an understanding of the endometrial pattern and secondary alterations in the fibroid.

### **Limitations**

The current study was purely descriptive, describing the clinical and histological features of uterine fibroids. It was based on 56 cases from a small sample. To boost the study's power, more research with a larger sample size can be done.

### **CONCLUSION**

In conclusion, the most common uterine tumour seen in gynaecological practise is leiomyoma. Feminine aggravations are the most common symptom, with menorrhagia being the most well-known example. The great majority of these tumours are located within the intramural space. Proliferative endometrium is the most well-known kind of endometrial. The normal auxiliary changes detected in fibroid uterus are hyaline degeneration, myxoid degeneration, and cystic degeneration. Appropriate diagnosis and timely treatment are essential to avoid the complications that malignant tumours can cause.

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*Ethical approval: The study was approved by the Institutional Ethics Committee*

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