

Original Research Article**Assessment and correlation of demographic and clinic-pathological profile of patients with uterine leiomyoma in terms of morphological variants and secondary changes****Dr.Ajit Singh^{1*}, Dr.Sonia Singh², Dr.Kushum Yadav³,Dr.Upender Sharma⁴, Dr.Hemlata Kamra⁵**^{1,2}Assistant professor, Dept of Pathology, Kalpana Chawla Government Medical College Karnal³Demonstrator, Dept of Pathology, Kalpana Chawla Government Medical College, Karnal⁴Professor, Dept of Pathology, Kalpana Chawla Government Medical College Karnal⁵Professor and HOD, Dept of Pathology, Kalpana Chawla Government Medical College Karnal***Corresponding Author and reprint request to: Dr.Ajit Singh****ABSTRACT**

Background: Uterine leiomyomas are benign smooth muscle tumors, found in one in three women over the age of 30 years. Uterine tumors are the most common and the leading cause of hysterectomy in women. **Objective:** to assess and correlate demographic and clinic-pathological profile of patients with uterine leiomyoma in terms of morphological variants and secondary changes. **Methods:** This hospital based cross sectional study was conducted among all the biopsy or surgically excised specimens and reference material submitted to the Department of Pathology, SPMC, Bikaner for histopathological study during study period i.e one year. Ethical approval was taken from the institutional ethical committee.

Results: 803(80.05%) patients were present with Pelvic pain and bleeding, 110 (11.06%) patients were present Abdominal fullness and bleeding, 89(8.87%) patients were present pelvic pain and only 1(0.009%) patients were present Pelvic pain and abdominal fullness. 835(83.25%) patients were no change, 159(15.85%) patients were show hyalinization, 5(0.49%) patients were show calcification, 2(0.19%) patients were show fatty change, 1(0.09%) patients were show myxoid change and inflammatory change.

Conclusions: The association between age group and signs & symptoms of patients to be found Insignificant. The association between age group and secondary change in leiomyoma to be

found highly significant. The association between area and secondary change in leiomyoma to be found highly significant

Keywords: Assessment, correlation, demographic, clinic-pathological profile, uterine leiomyoma, morphological variants, secondary changes

Introduction

Leiomyoma/ fibromyoma or fibroid uterus of uterus also called is the most common tumor of uterus and is found in 20% of women in reproductive age group¹. These are typically found during the middle and late reproductive years. The increased incidence of uterine leiomyomas and the absence of onset signs and symptoms, in most cases are important issues in the attempts of early detection disease.

Given the development of uterine leiomyoma it is convenient to divide the factors that may be related to tumorigenesis in four categories: predisposing risk factors, initiators, promoters, and effectors. Risk factors are characteristics associated with a disease generally identified by epidemiological studies. Knowledge of these predisposing factors may provide clues to the etiology of these tumors as well as preventive measures.

The exact etiology is unknown but there is considerable evidence that estrogen proliferates tumor growth since the tumors rarely appear before menarche and regress after menopause. Elevated estrogen level may cause its enlargement during pregnancy and shrink during puerperium. The tumors, composed of smooth muscle and fibrous tissue and are benign in nature. Based on their location within the uterine wall leiomyomas are classified as submucosal, intramural or subserosal. The latter may be pedunculated and simulate adnexal masses. It is a useful classification system since it relates to the clinical presentation and treatment options. As

leiomyomas enlarge they may outgrow their blood supply which results in various types of degeneration; these include hyaline, cystic, myxoid or red degeneration and dystrophic calcification. Hyalinization is the most common type of degeneration and cystic degeneration may be considered extreme sequelae of edema.

Fibroids may be single or multiple and mostly start in an intramural (in the muscle layer) location. With further growth some lesions may develop toward the outside of the uterus or toward the internal cavity. The clinical diagnosis of myoma is usually based on the finding of an enlarged, mobile uterus with an irregular contour on bimanual examination or an incidental finding on trans-abdominal sonography. The chief presenting symptoms with leiomyoma are menstrual irregularity, abdominal mass, abdominal pain, and other miscellaneous features.

Menorrhagia is the most frequent clinical symptom seen with intramural leiomyoma since it interferes with myometrium contraction, whereas metrorrhagia is frequently associated with submucosal leiomyoma because of endometrial ulceration. Subserosal fibroids are usually asymptomatic. Other features are abdominal mass, abdominal pain, painful sexual intercourse, urinary frequency, and urgency. They may also interfere with pregnancy. Cystic changes and fatty degeneration are common findings in intramural leiomyoma.

The clinical presentation is variable depending on the size, location, and number of tumors. The four major symptoms of uterine leiomyomas that are appropriate indications for surgery are bleeding, pressure on adjacent organs, pain and infertility.

The trend and tradition of a clinical entity change with time. Considerable efforts have been devoted to studying uterine leiomyoma in the Indian population. Since there is a limited literature available regarding clinicopathology of uterine leiomyomas in Bikaner region, present

study is therefore a step ahead to assess the demographic and clinicopathologic profile of patients with uterine leiomyoma.

Materials and Methods:

This hospital based cross sectional study was conducted among all the biopsy or surgically excised specimens and reference material submitted to the Department of Pathology, SPMC, Bikaner for histopathological study during study period i.e one year. Ethical approval was taken from the institutional ethical committee.

Sampling method: Convenience non-probability sampling.

Sample size: This study was conducted on total 1003 number of cases. All patients reporting to the Pathology dept. within study duration and eligible as per inclusion criteria were included in the study.

Methods of collection of data:

Clinical data will be obtained from hospital record and requisition submitted along with tissue specimen received in the department. Tissue bits were routinely processed. Three to five micron thick sections will be made from paraffin blocks and was stained with H&E stain. Special stains shall be done whenever necessary. Specimen obtained from eligible study population will be examined grossly as well as microscopically to assess type of fibroid, morphological patterns and variations and +/- of secondary changes.

Statistical analysis: After entering data into Excel worksheet, it was analyzed with the help of frequency, proportion, mean, standard deviation and tests of significance wherever applicable.

Results:

Out of 1003 patients, maximum (47.76%) patients were from 46-60 Yrs, 44.26% patients were from 31-45 Yrs age group and minimum patients (4.28%) was in more than 60 Yrs age group. 4.19% patients were nulliparous and 95.81% patients were multiparous. 500(49.85%) patients

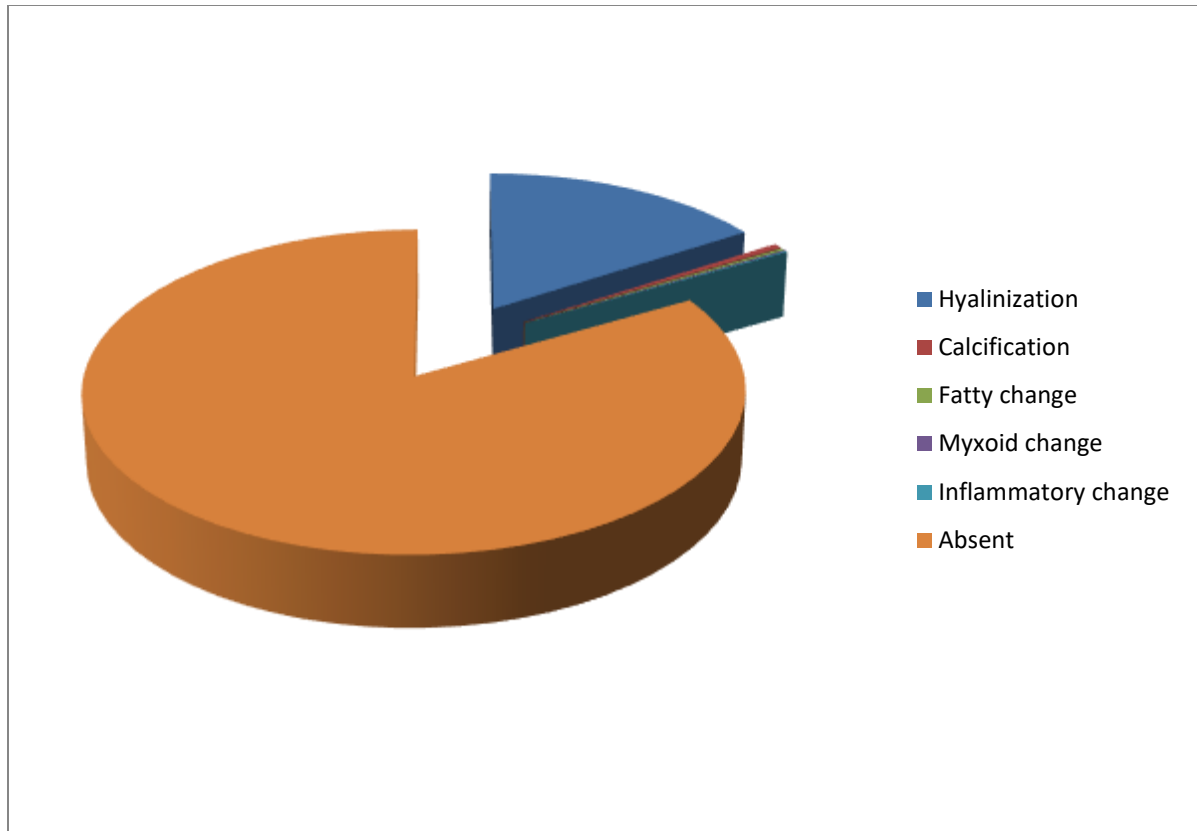
were from urban area and 503(50.15%) were from rural area. In year 2017 out of 8632 total biopsy, 290 (3.35%) were from uterine leiomyoma and in last 4 years out of total biopsy 30505 , 1003(3.29%) from uterine leiomyoma biopsy. 540(53.83%) patients were diagnosis by clinically and 463(46.17%) diagnosed by clinical diagnosis + USG.

Table 1: Sign and symptoms wise distribution of study patients

Sign and symptoms	No. of patients	Percentage
Pelvic pain	89	8.87
Pelvic pain and bleeding	803	80.05
Pelvic pain and abdominal fullness	1	0.009
Abdominal fullness and bleeding	110	11.06
Total	1003	100.00

Above table shows that 803(80.05%) patients were present with Pelvic pain and bleeding, 110 (11.06%) patients were present Abdominal fullness and bleeding, 89(8.87%) patients were present pelvic pain and only 1(0.009%) patients were present Pelvic pain and abdominal fullness.

835(83.25%) patients were no change, 159(15.85%) patients were show hyalinization, 5(0.49%) patients were show calcification, 2(0.19%) patients were show fatty change, 1(0.09%) patients were show myxoid change and inflammatory change.



Histopathological within leiomyomas

Table 2: Association between age group and sign & symptoms

Age group (Yrs)	Pelvic pain	Pelvic pain and bleeding	Pelvic pain and abdominal fullness	Abdominal fullness and bleeding	Total
0-15 Yrs	0	0	0	0	0
16-30 Yrs	3	20	0	4	27
31-45 Yrs	37	358	1	48	444
46-60 Yrs	41	387	0	51	479

More than 60 Yrs	8	38	0	7	53
Total	89	803	1	110	1003
p-value =0.489 NS					

Above table show that the pelvic pain was most common(41 patients) in46-60 year age group, Pelvic pain and bleeding was also most common (387 patients) in46-60 year age group, one patient Pelvic pain and abdominal fullness was found in 31-45 year age group, Abdominal fullness and bleeding was also most common (51 patients) in46-60 year age group. The association between age group and signs & symptoms of patients to be found Insignificant.

Table 3: Association between age group and secondary change

Age group (Yrs)	Hyalinization	Calcification	Fatty change	Myxoid change	Inflammatory change	Absent	Total
0-15 Yrs	0	0	0	0	0	0	0
16-30 Yrs	2	0	1	0	0	24	27
31-45 Yrs	74	2	1	1	1	365	444
46-60 Yrs	66	3	0	0	0	410	479
More than 60 Yrs	17	0	0	0	0	36	53
Total	159	5	2	1	1	835	1003
p-value =0.007 HS							

Above table show that hyalinization in leiomyoma was most commonly seen in 31-45 year age group. Calcification was most common in 46-60 year age group. The association between age group and secondary change in leiomyoma to be found highly significant.

Table 4: Association between age group and sign & symptoms

Area	Pelvic pain	Pelvic pain and bleeding	Pelvic pain and abdominal fullness	Abdominal fullness and bleeding	Total
Rural	46	393	1	63	503
Urban	43	410	0	47	500
Total	89	803	1	110	1003
p-value =0.604 NS					

Above table show that the pelvic pain was more (46 patients) in rural area patients, Pelvic pain and bleeding was more (410 patients) in urban area patients. Abdominal fullness and bleeding was more (63 patients) in rural area patients.

The association between area and signs & symptoms of patients to be found insignificant.

Table 5: Association between age group and secondary change.

Area	Hyalinization	Calcification	Fatty change	Myxoid change	Inflammatory change	Absent	Total
Rural	88	2	1	0	0	412	503
Urban	71	3	1	1	1	423	500
Total	159	5	2	1	1	835	1003
p-value =0.862 NS							

Above table show that hyalinization in leiomyoma was more seen(88 patients) in rural area. Calcification was more seen(3 patients) in urban area.

The association between area and secondary change in leiomyoma to be found highly significant.

Discussion:

Leiomyomas are commonly seen in women of reproductive age.²The present study out of 1003 patients, maximum (47.76%) patients were from 46-60 Yrs, 44.26% patients were from 31-45 Yrs age group and minimum patients (4.28%) was in more than 60 Yrs age group. similar to studies by Ashraf,³ and Begum and Khan² whereas in contrast, Hafiz *et al.*⁴observed that affected females were a decade lesser than 20-40 years of age possibly since they included only menorrhagic patients with fibroid.

In our study multiparous women (95.81%) were found to have leiomyomas more frequently than nulliparous (4.19%) analogous to a study by Begum and Khan,²in contrast to a study by

Derek⁵ who observed fibroids are more common in nulliparous or infertile patients since he included more of asymptomatic infertile patients with fibroids.

In our study 500(49.85%) women were from urban area and 503(50.15%) were from rural area. similar to studies by Ashraf also seen more in urban area than rural area.

In our study 803(80.05%) patients were present with Pelvic pain and bleeding, 110 (11.06%) patients were present Abdominal fullness and bleeding, 89(8.87%) patients were present pelvic pain and only 1(0.009%) patients were present Pelvic pain and abdominal fullness.

Literature search shows patients with uterine leiomyomas are asymptomatic, but if symptomatic, the most common clinical manifestation noted is menorrhagia due to increased vascularity, increased endometrial surface, and altered uterine contractility^{2,6}.

In the present study, secondary degenerative changes were noted grossly in 16.75% of cases. The degenerative changes in leiomyomas occur due to inadequate blood supply which may result in hyalinization, most common followed by cystic, hemorrhage, hydropic, or calcification, and very rarely malignant degeneration or LMS. The type of secondary change depends on the rapidity and degree of vascular insufficiency.²In the present study also, hyalinization was the most common secondary change similar to the study by Begum and Khan,² and Persaud and Arjoon.⁷ Red degeneration occurs predominantly during pregnancy,⁸ one of our cases were diagnosed during pregnancy .In addition, these secondary changes usually occur in old mature lesions and hence careful conscientious histopathological sampling should be carried out.⁸

Lipoleiomyoma is a rarer variant of uterine leiomyoma showing histological features of varying amounts of mature adipocytic cells amidst smooth muscle cells. Their incidence ranges from

0.03 to 0.2%.^{9,10} This is similar to the incidence in our study accounting to 0.19%. In contrast, a study by Abraham and Saldanha had a higher frequency of 0.7%¹¹.

Conclusion:

It was concluded that association between age group and signs & symptoms of patients to be found Insignificant. The association between age group and secondary change in leiomyoma to be found highly significant. The association between area and signs & symptoms of patients to be found Insignificant. The association between area and secondary change in leiomyoma to be found highly significant.

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