



CLINICAL PROFILE, FIGO CLASSIFICATION AND MANAGEMENT PATTERNS OF UTERINE LEIOMYOMA AT A TERTIARY CARE CENTRE

Dr Manisha Kanade

Dr Prashant Bhingare

Dr Shrinivas Gadappa

ABSTRACT

Background: Uterine leiomyoma is the most common benign smooth-muscle tumour of the uterus and an important cause of abnormal uterine bleeding, pelvic pain, pressure symptoms, anaemia, infertility and surgical intervention. Institutional data help understand local patterns of presentation, FIGO distribution and management. **Objectives:** To evaluate the clinical profile, FIGO classification, management modalities and histopathological findings among women with uterine leiomyoma at a tertiary health care centre. **Methods:** This prospective observational study was conducted in the Department of Obstetrics and Gynaecology, Government Medical College and Hospital, Chhatrapati Sambhajanagar, Maharashtra from January 2024 to January 2026. **Results:** The mean age was 43.15 ± 6.28 years, and 77 women (59.23%) were aged 41–50 years. Heavy menstrual bleeding was the commonest symptom (68.46%), followed by abdominal pain (54.62%). Intramural leiomyoma was the most frequent type, observed in 82 women (63.08%). The commonest clinical uterine size was 13–16 weeks in 50 women (38.46%), and the largest fibroid measured 5–9.9 cm in 78 (60.00%). FIGO type 4 was recorded in 69 women (53.08%). Surgical management was performed in 109 women (83.85%); among surgically managed women, total abdominal hysterectomy was performed in 68 cases (62.39%) and myomectomy in 26 cases (23.85%). No treatment-related event during hospital stay was documented in 93 women (71.54%). Blood transfusion was required in 85 (65.38%). Leiomyoma without degeneration was reported in 118 cases (90.77%). **Conclusion:** Uterine leiomyoma mainly affected women in the late reproductive and perimenopausal age group and commonly presented with heavy menstrual bleeding and abdominal pain. Intramural and FIGO type 4 fibroids predominated, and surgical management remained the principal treatment modality in this tertiary-care cohort.

KEYWORDS : Uterine leiomyoma; fibroid uterus; abnormal uterine bleeding; FIGO classification; myomectomy; hysterectomy; histopathology

INTRODUCTION

Uterine leiomyoma, commonly known as fibroid uterus, is a benign monoclonal smooth-muscle tumour arising from the myometrium and containing variable amounts of extracellular matrix. It is the most common benign tumour of the female genital tract and contributes substantially to gynaecological morbidity during the reproductive and perimenopausal years.¹⁻³ The hormone-dependent nature of leiomyoma is reflected by its rarity before menarche, growth during reproductive life and tendency to regress after menopause.³

Risk factors reported in epidemiological studies include increasing reproductive age, early menarche, nulliparity or low parity, obesity, hypertension, diabetes mellitus, family history and metabolic factors, although these associations should not be interpreted as direct causation in hospital-based observational studies.^{4,5,6,7} Anatomically, leiomyomas may be intramural, submucosal, subserosal, cervical, broad-ligament or mixed. The FIGO leiomyoma subclassification provides a standardised description of the relationship of the fibroid to the endometrial cavity and serosal surface and assists in treatment planning.⁸

Ultrasonography is the first-line imaging modality for identifying the number, size and location of fibroids, while MRI may be useful in selected complex cases.⁹ Management is individualised according to age, symptoms, fibroid characteristics, haemoglobin status, fertility desire, family completion, patient preference and available expertise. Medical therapy can reduce bleeding and improve anaemia in selected patients, whereas myomectomy, hysterectomy and minimally invasive procedures are considered according to reproductive goals and disease burden.^{10,11} Present study was conducted to evaluate the clinical profile, FIGO classification, management modalities and histopathological findings

among women with uterine leiomyoma at a tertiary health care centre.

MATERIALS AND METHODS

This Prospective hospital-based observational study was conducted in the Department of Obstetrics and Gynaecology, Government Medical College and Hospital, Chhatrapati Sambhajanagar, Maharashtra. The study was conducted from January 2024 to January 2026. Consecutive eligible women admitted with clinically and ultrasonographically diagnosed uterine leiomyoma during the study period were enrolled. Ethical committee clearance was obtained before commencement of study.

Inclusion criteria

Women aged ≥ 18 years who were admitted with clinically and ultrasonographically diagnosed uterine leiomyoma and provided written informed consent.

Exclusion criteria

Women who declined or were unable to provide written informed consent.

Data of all eligible women were entered a case-record proforma. Details were recorded regarding age, residence, socioeconomic status, menstrual history, obstetric history, family history of leiomyoma, infertility, medical comorbidities, previous pelvic surgery and presenting complaints. Clinical symptoms recorded included heavy menstrual bleeding, intermenstrual bleeding, frequent cycles, dysmenorrhoea, abdominal pain, mass per abdomen, urinary symptoms, constipation, pelvic pressure symptoms, infertility and incidental diagnosis.

General, systemic, abdominal, speculum and bimanual pelvic examinations were performed. Body mass index, pallor,

blood pressure, uterine size, abdominal mass, mobility, consistency and adnexal findings were documented. Laboratory investigations included complete blood count, blood group and Rh typing, urine routine and microscopy, blood sugar levels, liver and renal function tests and other investigations as clinically indicated.

Pelvic ultrasonography was performed in all patients to assess the number, size, site and type of fibroids, associated pelvic pathology, degenerative changes and FIGO classification. Additional imaging such as MRI or CT was used selectively when detailed fibroid mapping or evaluation of complex pelvic masses was required. Treatment was individualised according to age, symptoms, fibroid size and location, parity, fertility desire, haemoglobin status, associated pathology, patient preference and treating-unit decision. Management categories included medical management and surgical management. Surgical procedures included myomectomy, total abdominal hysterectomy, laparoscopic-assisted vaginal hysterectomy and non-descent vaginal hysterectomy.

Postoperative outcomes, complications, blood transfusion requirement and duration of hospital stay were recorded. Data were entered in Microsoft Excel and analysed using appropriate statistical software. Categorical variables were summarized as frequencies and percentages, while continuous variables were expressed as mean $\pm$ standard deviation where available. Statistical tests included the chi-square test for categorical variables, Fisher's exact test where applicable and Student's t-test for continuous variables. A p-value <0.05 was considered statistically significant. The study was conducted after Institutional Ethics Committee approval, and confidentiality of participant information was maintained.

RESULTS

A total of 130 women with uterine leiomyoma were analysed. The mean age was 43.15 ± 6.28 years. Women aged 41–50 years formed the largest age group, comprising 77 cases (59.23%), followed by 43 women (33.08%) aged 31–40 years and 10 women (7.69%) aged more than 50 years. Urban residence was recorded in 79 women (60.77%), normal BMI in 100 women (76.92%) and parity three or more in 75 women (57.69%).

Table 1. Baseline sociodemographic and reproductive profile

Variable	Category	Number	Percentage
Age group	31–40 years	43	33.08
	41–50 years	77	59.23
	> 50 years	10	7.69
Residence	Urban	79	60.77
	Rural	51	39.23
BMI	Normal	100	76.92
	Overweight	27	20.77
	Obese	3	2.31
Parity	Nulliparous	16	12.31
	Para 1	4	3.08
	Para 2	35	26.92
	Para ≥ 3	75	57.69

Most women had no documented associated medical condition (67.69%). Among the recorded comorbidities, hypertension was the most frequent, observed in 23 women (17.69%), followed by diabetes mellitus in 7 women (5.38%).

Heavy menstrual bleeding was the most frequent presenting symptom, reported by 89 women (68.46%), followed by pain in abdomen in 71 women (54.62%). Mass in abdomen was reported by 18 women (13.85%), infertility by 16 women (12.31%), dysmenorrhoea by 15 women (11.54%), and frequent menstrual cycles by 14 women (10.77%).

Table 2. Associated medical conditions and presenting symptoms

Variable	Category	Number	Percentage
Associated medical condition	No associated condition	88	67.69
	Hypertension	23	17.69
	Diabetes mellitus	7	5.38
	Hypothyroidism with hypertension	4	3.08
	Hypothyroidism	4	3.08
	Arthritis	3	2.31
	HIV-positive status	1	0.77
Presenting symptom*	Heavy menstrual bleeding	89	68.46
	Pain in abdomen	71	54.62
	Mass in abdomen	18	13.85
	Infertility	16	12.31
	Dysmenorrhoea	15	11.54
	Frequent menstrual cycles	14	10.77
	Irregular menses	6	4.62
	Urinary symptoms	4	3.08
	Postmenopausal bleeding	3	2.31
	Back pain	3	2.31
	Constipation	1	0.77

*Multiple responses were possible.

Intramural leiomyoma was the most frequent anatomical type, observed in 82 women (63.08%), followed by combined intramural and subserosal fibroids in 30 women (23.08%). Clinical uterine size of 13–16 weeks was recorded in 50 women (38.46%), and the largest fibroid measured 5–9.9 cm in 78 women (60.00%).

Table 3. Fibroid type, clinical uterine size and largest fibroid size

Variable	Category	Number	Percentage
Anatomical Fibroid type	Intramural	82	63.08
	Intramural + subserosal	30	23.08
	Subserosal	7	5.38
	Submucosal + intramural	5	3.85
	Cervical	3	2.31
	Intramural + broad ligament	2	1.54
	Intramural + subserosal + cervical	1	0.77
Uterine size on clinical examination	<8 weeks	20	15.38
	8–12 weeks	15	11.54
	13–16 weeks	50	38.46
	17–20 weeks	27	20.77
	>20 weeks	18	13.85
Largest fibroid size	<5 cm	22	16.92
	5–9.9 cm	78	60.00
	10–14.9 cm	25	19.23
	≥ 15 cm	5	3.85

Menstrual characteristics were described using FIGO bleeding descriptors. Frequent cycles were recorded in 20 women (15.38%), normal cycle frequency in 28 women (21.54%) and infrequent cycles in 7 women (5.38%). Prolonged menstrual bleeding lasting more than 8 days was observed in 40 women (30.77%), while normal duration of bleeding was recorded in 70 women (53.85%). Regular menstrual variation was documented in 73 women (56.15%) and irregular variation in 54 women (41.54%). Heavy menstrual flow was present in 65 women (50.00%), whereas normal flow was recorded in 28 women (21.54%). Among associated symptoms, dysmenorrhoea was reported by 22 women (16.92%) and intermenstrual bleeding by 6 women (4.62%).

Table 4. Menstrual characteristics according to FIGO bleeding descriptors

Descriptor	Category	Number	Percentage
------------	----------	--------	------------

Frequency	Frequent cycles (<24 days)	20	15.38
	Normal frequency (24–38 days)	28	21.54
	Infrequent cycles (>38 days)	7	5.38
Duration	Prolonged bleeding (>8 days)	40	30.77
	Normal duration (≤8 days)	70	53.85
Regularity	Regular variation (≤9 days)	73	56.15
	Irregular variation (≥10 days)	54	41.54
Flow volume	Heavy flow	65	50.00
	Normal flow	28	21.54
Associated symptoms	Intermenstrual bleeding	6	4.62
	Dysmenorrhoea	22	16.92

FIGO type 4 leiomyoma was the most frequent category, documented in 69 women (53.08%), followed by type 3 in 37 women (28.46%) and type 6 in 33 women (25.38%). Type 5 fibroids were recorded in 16 women (12.31%), type 8 in 12 women (9.23%), and type 2 and type 7 fibroids in 4 women each (3.08%). No type 1 fibroid was documented. As more than one FIGO type was recorded in some

Table 5. FIGO classification of leiomyoma

FIGO type	Number*	Percentage
Type 2	4	3.08
Type 3	37	28.46
Type 4	69	53.08
Type 5	16	12.31
Type 6	33	25.38
Type 7	4	3.08
Type 8	12	9.23

(*In women with multiple fibroids, all recorded FIGO types were included; therefore, FIGO percentages are not mutually exclusive)

Surgical management was the predominant treatment modality and was performed in 109 women (83.85%), while 21 women (16.15%) were managed medically. Among the 109 surgically managed women, total abdominal hysterectomy was the most frequently performed procedure, accounting for 68 cases (62.39%), followed by myomectomy in 26 cases (23.85%). Laparoscopic-assisted vaginal hysterectomy was performed in 9 women (8.26%) and non-descent vaginal hysterectomy in 6 women (5.50%).

Table 6. Treatment modalities and surgical management

Variable	Category	Number	Percentage
Treatment modality(n=130)	Surgical management	109	83.85
	Medical management	21	16.15
Type of surgery (n=109)	Total abdominal hysterectomy	68	62.39
	Myomectomy	26	23.85
	Laparoscopic-assisted vaginal hysterectomy	9	8.26
	Non-descent vaginal hysterectomy	6	5.50

Among 130 women with uterine leiomyoma, no documented post-treatment complication was recorded in 93 women (71.54%). Vomiting was reported in 10 women (7.69%), while nausea and wound gape were each documented in 8 women (6.15%). Fever occurred in 6 women (4.62%), fever with nausea in 4 women (3.08%), and vesicovaginal fistula in 1 woman (0.77%). Blood transfusion was required in 85 women (65.38%). Most women had a hospital stay of 6–7 days, recorded in 80 women (61.54%).

Table 7. Post-treatment outcomes, blood transfusion, hospital stay and histopathological findings

Variable	Category	Number	Percentage
Post-treatment event	No documented complication	93	71.54
	Vomiting	10	7.69
	Nausea	8	6.15

	Wound gape	8	6.15
	Fever	6	4.62
	Fever with nausea	4	3.08
	Vesicovaginal fistula	1	0.77
Blood transfusion	Required	85	65.38
	Not required	45	34.62
Hospital stay	<3 days	12	9.23
	4–5 days	24	18.46
	6–7 days	80	61.54
	8–10 days	6	4.62
	>10 days	8	6.15

DISCUSSION

The present prospective observational study describes the clinical profile, FIGO distribution, treatment patterns, postoperative outcomes and histopathological findings among 130 women with uterine leiomyoma managed at a tertiary health care centre. The majority of women were in the 41–50-year age group, with a mean age in the early forties. This age distribution is consistent with the established observation that leiomyomas are uncommon before menarche, increase during reproductive life and become clinically prominent during the late reproductive and perimenopausal years.^{2,4}

Most women were multiparous, with parity three or more documented in more than half of the cohort. Epidemiological studies have reported associations between parity and leiomyoma occurrence, but the direction and strength of association vary by age, ethnicity and study design.^{4,7} Because the present study did not include a non-fibroid comparison group, parity-related observations should be described as the reproductive profile of the cohort rather than as causal risk estimates.

Heavy menstrual bleeding and abdominal pain were the dominant clinical manifestations. This is consistent with the known symptom spectrum of uterine leiomyoma, particularly when intramural or submucosal components alter uterine contractility, endometrial surface area or vascular architecture.^{5,6} Anaemia and transfusion requirements in this cohort highlight the clinical importance of early evaluation and correction of haemoglobin before definitive treatment.

Intramural fibroids were the most frequently recorded anatomical type, followed by combined intramural and subserosal fibroids. Intramural fibroids are commonly reported in clinical practice and may present with bleeding, dysmenorrhoea, uterine enlargement or pressure symptoms depending on size and cavity proximity.⁵ Mixed fibroid types were also documented, emphasising the importance of recording all clinically relevant fibroids rather than assigning every woman to a single anatomical category.

The most frequent clinical uterine size was 13–16 weeks, recorded in 50 women (38.46%), and the largest fibroid measured 5–9.9 cm in 78 women (60.00%). Larger uterine size and larger fibroid burden often influence treatment choice, operative planning, need for transfusion and surgical route. Ultrasonography remains the first-line imaging modality for defining fibroid number, size and location, while MRI may be reserved for selected complex cases or when adenomyosis, degeneration or atypical pelvic masses require further characterisation.⁹

FIGO type 4 fibroids were most frequent, followed by type 3 and type 6. Since multiple FIGO categories were recorded in some women, the distribution reflects the presence of multiple fibroids rather than mutually exclusive patient categories. The FIGO subclassification is clinically useful because submucosal and cavity-adjacent fibroids are more likely to contribute to bleeding and reproductive dysfunction, whereas

subserosal fibroids are more likely to present with pressure symptoms.⁸

Surgical management was the predominant treatment modality, performed in 109 women (83.85%). Among surgical procedures, total abdominal hysterectomy was the most frequent operation, performed in 68 women (62.39%), followed by myomectomy in 26 women (23.85%). This pattern likely reflects the tertiary-care nature of the cohort, symptom severity, uterine size, anaemia, family completion and patient preference. However, treatment was not randomized, and procedure-specific superiority cannot be inferred from this study. Current management principles support individualised decision-making, with medical therapy, myomectomy, hysterectomy and minimally invasive options selected according to symptoms, age, fertility desire and available expertise.^{10,11}

Post-treatment outcomes were generally favourable, with no documented post-treatment event in 93 women (71.54%). The transfusion requirement was high, reflecting the symptomatic and anaemic profile of the cohort and the surgical case mix. Hospital stay of 6–7 days was recorded in 80 women (61.54%), which is compatible with a setting where open abdominal hysterectomy remains a major procedure.

Histopathological evaluation showed leiomyoma without degeneration in most cases. Cystic and hyaline degeneration were the most frequent degenerative changes. One case with sarcomatous change was recorded. Because sarcomatous transformation is rare and preoperative distinction from benign leiomyoma may be challenging, this finding should be interpreted cautiously and should be verified against the final histopathology report before publication.¹² Histopathological assessment remains important in all surgical specimens because it confirms benign disease, detects degeneration and identifies unexpected malignant or atypical pathology.

The findings have practical implications for tertiary hospitals. Women with heavy menstrual bleeding, pelvic pain, abdominal mass or infertility should undergo structured clinical evaluation and ultrasound mapping. FIGO classification should be routinely incorporated into imaging reports because it improves communication and guides treatment planning. Anaemia correction, counselling regarding fertility-preserving options and individualized surgical planning are essential components of care.

The strengths of this study include its prospective observational design, consecutive enrolment, adequate sample size for descriptive institutional analysis, inclusion of demographic, reproductive, clinical, imaging, FIGO, treatment, postoperative and histopathological variables, and representation of real-world tertiary-care practice.

The study is limited by its single-centre hospital-based design, inclusion of only admitted women, absence of a non-fibroid comparison group, possible referral and selection bias, non-randomized treatment selection and lack of long-term follow-up. Therefore, the findings should be interpreted as descriptive institutional data and should not be used to infer risk-factor causality or procedure-specific superiority.

CONCLUSION

Uterine leiomyoma in the present tertiary-care cohort predominantly affected women in the late reproductive and perimenopausal age group. Heavy menstrual bleeding and abdominal pain were the principal clinical manifestations. Intramural fibroids and FIGO type 4 lesions were the most frequent findings, while mixed anatomical and FIGO patterns highlighted the heterogeneous nature of leiomyoma presentation.

Management was individualized according to symptom burden, uterine size, fertility desire and clinical suitability, with surgical treatment forming the major component of care. Post-treatment morbidity was limited in most women, although the high blood transfusion requirement reflected the clinical burden of bleeding and anaemia.

REFERENCES

1. Berek JS. Berek & Novak's Gynecology. 16th ed. Philadelphia: Wolters Kluwer; 2020.
2. Stewart EA, Cookson CL, Gandolfo RA, Schulze-Rath R. Epidemiology of uterine fibroids: a systematic review. *BJOG*. 2017;124(10):1501-1512.doi:10.1111/1471-0528.14640.
3. Bulun SE. Uterine fibroids. *N Engl J Med*. 2013;369(14):1344-1355. doi:10.1056/NEJMra1209993.
4. Baird DD, Dunson DB, Hill MC, Cousins D, Schectman JM. High cumulative incidence of uterine leiomyoma in black and white women: ultrasound evidence. *Am J Obstet Gynecol*. 2003;188(1):100-107.doi:10.1067/mob.2003.99.
5. Parker WH. Etiology, symptomatology, and diagnosis of uterine myomas. *Fertil Steril*. 2007;87(4):725-736. doi:10.1016/j.fertnstert.2007.01.093.
6. Gupta S, Jose J, Manyonda I. Clinical presentation of fibroids. *Best Pract Res Clin Obstet Gynaecol*. 2008;22(4):615-626.doi:10.1016/j.bpobgyn.2008.01.008.
7. Wise LA, Laughlin-Tommaso SK. Epidemiology of uterine fibroids: from menarche to menopause. *Clin Obstet Gynecol*. 2016;59(1):2-24. doi:10.1097/GRE.0000000000000164.
8. Munro MG, Critchley HOD, Fraser IS; FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. *Int J Gynaecol Obstet*. 2018;143(3):393-408. doi:10.1002/ijgo.12666.
9. Testa AC, Di Legge A, Bonatti M, Manfredi R, Scambia G. Imaging techniques for evaluation of uterine myomas. *Best Pract Res Clin Obstet Gynaecol*. 2016;34:37-53. doi:10.1016/j.bpobgyn.2015.11.014.
10. Donnez J, Dolmans MM. Uterine fibroid management: from the present to the future. *Hum Reprod Update*. 2016;22(6):665-686.doi:10.1093/humupd/dmw023.
11. Management of symptomatic uterine leiomyomas: ACOG Practice Bulletin, Number 228. *Obstet Gynecol*. 2021;137(6):e100-e115.doi:10.1097/AOG.0000000000004401.
12. Höhn AK, Brambs CE, Hiller GGR, May D, Schmoekel E, Horn LC. 2020 WHO Classification of Female Genital Tumors. *Geburtshilfe Frauenheilkd*. 2021;81(10):1145-1153. doi:10.1055/a-1545-4279.