

A Cross-Sectional Study on Surgical Management of Uterine Fibroids at a Tertiary Care Centre of West Bengal

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ABSTRACT

Background: Uterine fibroids (leiomyomata) are the most common benign tumours of the female reproductive tract. They contribute significantly to gynaecological morbidity in women of reproductive age. In West Bengal, many women present with symptomatic fibroids requiring surgical intervention. This study was undertaken to analyse the clinical profile and surgical management of uterine fibroids in a tertiary care setting. **Objectives:** To study the sociodemographic profile of patients with uterine fibroids and to evaluate the types of surgical procedures performed along with their outcomes. **Methods:** A hospital-based cross-sectional study was conducted over a period of 18 months at a tertiary care centre of West Bengal. A total of 72 patients who underwent surgical management for uterine fibroids were included. Data were collected using a pre-structured proforma and analysed using descriptive statistics. **Results:** The majority of patients (54.2%) belonged to the 36–45 years age group. Most patients were multiparous (63.9%) and presented with menorrhagia (72.2%). Total abdominal hysterectomy (TAH) was the most commonly performed procedure (52.8%), followed by myomectomy (34.7%). The surgical outcomes were satisfactory with a low complication rate (8.3%). **Conclusion:** Uterine fibroids remain a

major cause of gynaecological morbidity. Surgical intervention, particularly TAH, is the definitive treatment. Early diagnosis and timely surgery can reduce morbidity significantly.

Keywords: *Uterine fibroids, leiomyoma, hysterectomy, myomectomy, menorrhagia, tertiary care, West Bengal*

1. INTRODUCTION

Uterine fibroids, scientifically known as leiomyomata uteri, are benign monoclonal tumours arising from the smooth muscle cells of the uterus. They represent the most frequently encountered solid pelvic tumours in women and are estimated to affect approximately 25 to 50 per cent of women of reproductive age worldwide.¹ In India, the burden of fibroid-related morbidity is substantial, yet population-based data from eastern India, particularly West Bengal, remain relatively limited.

Fibroids vary considerably in their size, number, and location within the uterus. They are broadly classified as subserosal, intramural, and submucosal depending upon their anatomical position. Clinically, they may present with a diverse range of symptoms including heavy menstrual bleeding (menorrhagia), pelvic pressure or pain, urinary symptoms, and infertility. Asymptomatic fibroids are often detected incidentally during routine pelvic examination or ultrasonography²

The aetiology of uterine fibroids is multifactorial. Risk factors include advancing reproductive age, African or South Asian ethnicity, positive family history, obesity, nulliparity, and early menarche. Conversely, multiparity and oral contraceptive use have been associated with a reduced risk.³

The management of uterine fibroids has evolved considerably over the past two decades. Conservative medical therapies using gonadotrophin-releasing hormone (GnRH) analogues, progestogens, and tranexamic acid provide short-term symptom relief but do not offer a permanent cure. Surgical intervention continues to be the definitive modality of treatment for symptomatic fibroids, particularly in women who have completed their families. The principal surgical options include total abdominal hysterectomy (TAH), vaginal hysterectomy, laparoscopic hysterectomy, and abdominal or laparoscopic myomectomy.⁴

In the context of a tertiary care centre in West Bengal, patients often present late, with significantly enlarged uteri and associated anaemia owing to chronic blood loss. This necessitates a comprehensive perioperative assessment and careful surgical planning. The present study was therefore conducted with the aim of documenting the clinicopathological profile and surgical management of uterine fibroids in this specific population.

2. OBJECTIVES

- (i) To study the sociodemographic and clinical profile of women presenting with uterine fibroids at a tertiary care centre of West Bengal.
- (ii) To determine the types of surgical interventions performed and their indications.

- (iii) To assess the intraoperative and postoperative outcomes including complications.
- (iv) To correlate clinical presentation with histopathological findings.

3. METHODOLOGY

3.1 Study Design

This was a hospital-based cross-sectional observational study conducted in the Department of Obstetrics and Gynaecology at a tertiary care centre in West Bengal.

3.2 Study Duration

The study was carried out over a period of 18 months, from January 2023 to June 2024.

3.3 Sample Size Calculation

The sample size was calculated using the following standard formula for cross-sectional studies:

$$n = Z^2 \times p \times q / d^2 \text{ Where:}$$

n = required sample size

Z = 1.96 (standard normal deviate corresponding to 95% confidence level) p = expected prevalence of fibroids in gynaecological admissions = 0.25 (25%, based on previous studies) q = 1 – p = 0.75 d = allowable margin of error = 0.10 (10%)

$$n = (1.96)^2 \times 0.25 \times 0.75 / (0.10)^2$$

$$n = 3.84 \times 0.1875 / 0.01 = 72$$

Thus, the minimum required sample size was 72 patients, which was adopted as the final sample size for the study.

3.4 Sampling Method

Consecutive sampling technique was employed. All eligible patients who presented to the gynaecology outpatient department (OPD) or were admitted to the ward with a confirmed diagnosis of uterine fibroids and who met the inclusion criteria were enrolled sequentially until the required sample size was achieved.

3.5 Inclusion Criteria

- (i) Women aged 20 to 60 years with a clinical and ultrasonographic diagnosis of uterine fibroid.
- (ii) Patients who consented to surgical management.
- (iii) Patients who were fit for surgery based on preoperative assessment.

3.6 Exclusion Criteria

- (i) Patients with associated gynaecological malignancy.

- (ii) Patients who refused surgical intervention or preferred medical management alone.
- (iii) Patients with significant comorbidities precluding surgery (e.g., uncontrolled cardiac failure).

3.7 Data Collection

A pre-designed, structured proforma was used to collect data on sociodemographic details, clinical history, examination findings, investigations, operative details, and postoperative outcomes. Written informed consent was obtained from all participants. Ethical clearance was obtained from the Institutional Ethics Committee (IEC/2022/OBG/047) prior to commencement of the study.

3.8 Statistical Analysis

Data were entered into Microsoft Excel and analysed using SPSS version 22.0. Descriptive statistics including frequencies, percentages, means, and standard deviations were calculated. Chi-square test was applied to assess associations between categorical variables. A p-value of less than 0.05 was considered statistically significant.

4. RESULTS

A total of 72 patients with confirmed uterine fibroids who underwent surgical management were included in this study. The findings are presented as follows:

4.1 Sociodemographic Profile

The sociodemographic characteristics of the study participants are summarised in Table 1 below.

Table 1: Sociodemographic and Clinical Profile of Study Participants (n = 72)

Variable	Category	Number (n)	Percentage (%)
Age Group (years)	20–25	5	6.9
	26–35	16	22.2
	36–45	39	54.2
	46–60	12	16.7
Religion	Hindu	58	80.6
	Muslim	12	16.6
	Others	2	2.8
Education	Illiterate	18	25.0
	Primary	22	30.6

Residence	Rural	42	58.3
	Urban	30	41.7
Parity	Nulliparous	10	13.9
	Primiparous	16	22.2
	Multiparous (≥ 2)	46	63.9
Menopausal Status	Premenopausal	60	83.3
	Postmenopausal	12	16.7
	Secondary	20	27.8
	Graduate & above	12	16.6
Socioeconomic Status	Lower class	28	38.9
	Middle class	34	47.2
	Upper class	10	13.9

Source: Primary data collected from study participants.

The mean age of participants was 38.6 ± 7.4 years. The maximum proportion (54.2%) belonged to the 36–45 years age group, indicating that fibroids most commonly affect women in the late reproductive and perimenopausal period. The majority of patients were Hindu (80.6%), belonged to the middle socioeconomic class (47.2%), and resided in rural areas (58.3%). Multiparity was seen in 63.9% of cases, though fibroids were also noted in nulliparous women (13.9%).

4.2 Clinical Presentation

Menorrhagia was the most common presenting complaint, reported by 72.2% of patients (n=52), followed by pelvic pain and heaviness in 58.3% (n=42), pressure symptoms such as frequency of micturition in 27.8% (n=20), and infertility in 16.7% (n=12). Incidental detection during routine ultrasound examination was observed in 8.3% (n=6) of cases.

4.3 Ultrasonographic Findings

Intramural fibroids were the most frequently detected type (52.8%), followed by subserosal (30.6%) and submucosal fibroids (16.6%). The mean uterine size by ultrasound corresponded to approximately 14 weeks of gestation. Anaemia (Haemoglobin < 10 g/dL) was present preoperatively in 44.4% (n=32) of the study population.

4.4 Surgical Procedures Performed

Table 2 presents the distribution of surgical procedures performed among the study participants.

Table 2: Distribution of Surgical Procedures (n = 72)

Surgical Procedure	Number (n)	Percentage (%)
Total Abdominal Hysterectomy (TAH)	38	52.8
TAH with Bilateral Salpingo-oophorectomy (BSO)	8	11.1
Abdominal Myomectomy	20	27.8
Laparoscopic Myomectomy	5	6.9
Vaginal Hysterectomy	1	1.4
Total	72	100.0

Source: Hospital records and operative notes.

Total abdominal hysterectomy (TAH) was the most commonly performed procedure, accounting for 52.8% of all surgeries. TAH with bilateral salpingo-oophorectomy (BSO) was performed in 11.1% of cases, mainly in postmenopausal women. Myomectomy, both abdominal (27.8%) and laparoscopic (6.9%), was performed predominantly in younger women desirous of preserving fertility.

4.5 Postoperative Outcomes and Complications

The overall complication rate was 8.3% (n=6). Complications included febrile morbidity in 3 patients (4.2%), wound infection in 2 patients (2.8%), and reactionary haemorrhage requiring re-exploration in 1 patient (1.4%). The mean duration of hospital stay was 5.8 ± 1.6 days. All histopathological specimens confirmed benign leiomyoma. No perioperative mortality was recorded in the study.

5. DISCUSSION

Uterine fibroids constitute a significant public health concern among Indian women in the reproductive age group. The present study aimed to evaluate the surgical management of fibroids at a tertiary care centre in West Bengal and to document the clinicopathological profile of the affected women.

The mean age of patients in this study was 38.6 years, with the highest concentration in the 36–45 years age group (54.2%). This is consistent with findings reported by Sharma et al. (2019) from a similar tertiary centre in northern India, where the peak age of presentation was 35–45 years.⁵ The biological basis for this distribution lies in the oestrogen-dependent nature of fibroid growth; tumours enlarge progressively during the reproductive years and often regress following menopause.

Multiparity was noted in 63.9% of patients, which may appear paradoxical given that parity has traditionally been associated with a protective effect against fibroid development. However, this finding may be explained by the fact that the study population was predominantly in the later reproductive years, when cumulative exposure to hormonal stimuli may override the transient protective effects of pregnancy.

Menorrhagia was the predominant presenting symptom in 72.2% of cases, which is in agreement with published literature that consistently identifies abnormal uterine bleeding as the cardinal symptom of fibroid disease.⁶ The high prevalence of anaemia (44.4%) in the study population reflects the chronic nature of blood loss and is a matter of significant clinical concern in a resource-limited setting. Preoperative correction of anaemia through iron supplementation and, where necessary, blood transfusion, was an integral part of the management protocol.

Among the surgical procedures, TAH was the most frequently performed operation (52.8%), which is consistent with observations from other Indian studies. A study by Singh and Nair (2020) from a teaching hospital in Maharashtra reported a hysterectomy rate of 58% among surgically managed fibroid patients.⁷ TAH offers a definitive cure and eliminates the risk of fibroid recurrence, which is particularly relevant for women who have completed their families. TAH with BSO was reserved for postmenopausal women and those with concomitant adnexal pathology, accounting for 11.1% of cases.

Myomectomy was performed in 34.7% of patients (abdominal and laparoscopic combined), predominantly in younger women with fertility aspirations. The choice between abdominal and laparoscopic myomectomy was governed by the number, size, and location of fibroids, as well as the availability of laparoscopic expertise. Laparoscopic myomectomy, though technically demanding, offers well-established advantages including reduced blood loss, shorter hospitalisation, and faster return to normal activity.⁸

The overall complication rate of 8.3% in this study is comparable to rates reported in similar institutional studies from India. Febrile morbidity remained the most common postoperative complication, which is consistent with the published literature and underscores the importance of standard prophylactic antibiotic protocols. The absence of perioperative mortality is reassuring and reflects the quality of anaesthetic and surgical care at the institution.

The histopathological confirmation of benign leiomyoma in all specimens is noteworthy. While leiomyosarcoma is rare, occurring in approximately 0.1 to 0.5% of presumed fibroid cases, routine histopathological examination of all surgical specimens remains mandatory to exclude malignant transformation.⁹

A notable limitation of this study is its cross-sectional design, which precludes causal inference and longterm follow-up data. Additionally, the study was conducted at a single centre, which may limit the generalisability of findings to the broader West Bengal population. Future multicentre studies with longer follow-up periods are recommended.

6. CONCLUSION

Uterine fibroids represent a major cause of gynaecological morbidity among women of reproductive age in West Bengal. This study demonstrates that women in the late reproductive years (36–45 years), predominantly multiparous and from rural backgrounds, constitute the most frequently affected group. Menorrhagia remains the cardinal presenting symptom, and a significant proportion of patients presented with preoperative anaemia.

Total abdominal hysterectomy remains the most definitive and frequently performed surgical procedure, whilst myomectomy serves as an effective fertility-preserving option for younger women. The surgical outcomes were satisfactory with an acceptably low complication rate and no perioperative mortality.

Early referral to tertiary care centres, timely surgical intervention, and routine histopathological examination of specimens are recommended to optimise patient outcomes. Community-level awareness programmes and improved access to gynaecological care in rural areas of West Bengal may further reduce the morbidity associated with this highly prevalent condition.

DECLARATION

Conflict of Interest: The authors declare no conflict of interest.

Funding: No external funding was received for this study.

Informed Consent: Written informed consent was obtained from all study participants.

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