

Clinical Presentation & Operative Treatment of Leiomyoma of Uterus and its Outcome

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Abstract

Introduction: Uterine leiomyoma is remarkably common, however only a subset of women have their fibroids clinically detected, symptomatic, or warrant surgical treatment. Mode of treatment depends on age of the patients, number, size and site of the myoma and also fertility status of the patients. **Materials & methods:** To evaluate the sociodemographic, clinical characteristics, management outcome and its determinants in BSMMU, Dhaka, Bangladesh, the study was carried out. 50 patients of diagnosed leiomyoma admitted in the BSMMU, Dhaka was selected for the study. Clinical profile, type of surgery and postoperative follow up findings were noted. Data was analyzed by computer based software SPSS – 18. **Results:** The common complaints among the 50 patients were progressive menorrhagia (70%), abdominal swelling (50%), infertility (24%), weight in pelvis (38%), weakness/dizziness or syncopal attack after menstrual period (26%) and recurrent miscarriages (12%). The average uterine size at presentation was 15±9.7 weeks. The majority (70%) of the women presented with multiple leiomyomata. The commonest anatomical position of the myomas were multiple positions and intramural(80%). Total abdominal hysterectomy with or without bilateral salpingo oophorectomy according to age was the commonest surgical procedure performed in thirty two (64%) cases. Myomectomy was done in 12(24%) cases and laparoscopic assisted vaginal hysterectomy was done in also 6(12%) of patients. Postoperative complications occurred in 24%(12) of the women. The most common complications were postoperative pyrexia 12%, blood loss warranting transfusion 8%, wound infection 10% and prolonged hospital stay 6%. **Conclusion:** Uterine fibroid is common in our environment and most of the patients had regular menstrual cycle with progressive menorrhagia. Its removal is commonly associated with post-operative pyrexia, blood loss, and anemia and wound infection. Preoperative correction of anemia appropriate use of antibiotics and strict hemostasis and asepsis can reduce these complications.

Key words: Uterine fibroid; leiomyomata; progressive menorrhagia.

INTRODUCTION

Leiomyoma is the commonest of all pelvic tumors, being present in 20% of women in the reproductive age group and increasing with age¹. It is a benign tumor composed mainly of smooth muscle containing varying amount of fibrous tissue. Collagen content of the tumour gives it a hard fibrous texture. The tumor is well circumscribed having a pseudocapsule. Various terms are used to refer the tumor like myoma or fibromyoma and is popularly called fibroid². The cause of uterine leiomyoma is not known. There is evidence that each individual leiomyoma is unicellular in origin (monoclonal) from glucose-6-phosphate dehydrogenase studies³. Multiple chromosomal abnormalities are detected in approximately 50 percent of leiomyoma by cytogenetic analysis². Though causes are obscure, oestrogen has been considered as the major promoter of myoma growth. Leiomyoma contain oestrogen receptors in higher concentration than in the surrounding myometrium but in lower concentration than in the endometrium⁴.

Myoma may arise from any part of mullerian duct, but most commonly develop in the myometrium. The tumor grow slowly, often only manifest in the fourth decade of life. Racial factors have some role in the aetiology of myoma. It is 3-9 times more frequent in black then in white⁴. Leiomyoma is rare before the age of 20 years. They most commonly produce symptoms between the age of 35 to 45 years, but exist in microscopic form before the age of 30 years². The typical leiomyoma is a firm, multinodular structure of variable size, frequently multiple as many as 200 may be found in one uterus. Its rate of growth is slow. However, the rate of growth varies from patient to patient, slowing of growth is most likely after menopause, but at least 10 percent of myoma continue to grow after this period⁵. Leiomyoma may be complicated by degeneration, which is most common. Other changes that might occur are torsion, infarction, sarcomatous change etc. Malignant change in leiomyoma is estimated to be less than 0.2 percent^{2,5}.

Uterine Leiomyoma is a frequent cause of menorrhagia, dysmenorrhoea, reduced fertility and recurrent pregnancy loss^{4,6}. In general leiomyoma do not require treatment if it is symptomless and only justifiable to operate on a symptom less tumor when it is larger than 12-14 weeks size of pregnant uterus, if it is growing rapidly, if it is subserous and pedunculated and prone to torsion of its pedicle, if likely to complicate future pregnancy, or if there is doubt about its nature^{1,2}. Still now definitive treatment of leiomyoma is surgical. Traditionally two main operation are available – myomectomy and hysterectomy. Hysterectomy are usually performed in two to three ways like total abdominal hysterectomy, laparoscopic assisted vaginal hysterectomy and non descendent vaginal hysterectomy(NDVH)^{7,8}. In this short period of study attempts are made to highlight clinical presentation and operative treatment provided to the admitted patients.

MATERIALS & METHODS

This was a cross sectional observational study done in the Obstetrics & Gynaecology department, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, during a 6 months from Jul 2012 to Dec 2012. Study patients were the all patients admitted in BSMMU, Gynae and Obs. department during the study period who fulfilled the inclusion criteria. Sampling technique were purposive sampling and sample size were 50 patients of leiomyoma. Selection criteria were all patients having leiomyoma admitted in department of Gynaecology and Obstetrics of BSMMU, Dhaka and patients failed medical treatment for leiomyoma and exclusion criteria were pregnancy with leiomyoma of uterus and diagnosis of leiomyoma during Ceserian section. The attendant and/or the patient was thoroughly informed about the aims, objectives and detail procedure of the study before examination. She was encouraged for voluntary participation and allowed freedom to withdraw from the study whenever she liked even after participation. From all eligible subjects clinical history was taken and clinical examination was done. Then treatment procedures of the leiomyoma were monitored and outcomes were also recorded. To determine the anatomical location and number of uterine leiomyoma the intra operative findings recorded in operation notes were used.

All relevant information for each individual study subject was recorded after getting informed written consent on a pre-tested data sheet. Data were collected by the researcher herself. Data were processed and analyzed by using computer bases software SPSS-18. Different statistical methods were applied for data analysis like percentages and frequency and presented with bar chart and pie chart.

RESULTS

Regarding analysis of sociodemographic profile it was found that Among the 50 patients 11(22%) patients were found in the age group 20-29, 9(18%) patients were in age group 30-39, 20(40%) patients were found to have age group 40 -49 years, 7(14%) patients had age group 50-59 years, 3(6%) patients had age group 60 years and above. Regarding analysis of parity 12(24%) had parity “0”, parity 1-2, 3-5, >5 had 11(22%), 23(46%) and 6(12%) respectively. Regarding analysis of locality 32(64%) patients came from urban locality, 10(20%) patients came from down town and 8(16%) patients were from rural areas. Among the 50 patients 3(6%) patient had house hold income less than 5000 taka, 12(24%) patients had income 5-10,000 taka. 16(32%) patients had income between 15-20,000 taka and 6(12%) patients had income 20-25,000 taka and 3(6%) had >25,000 taka per month. Regarding analysis most of the patients were HSC 22(44%), 12(24%) completed SSC, 7(14%) were below SSC, 5(10%) were graduate and 4(8%) were masters.

Table 1: Sociodemographic variables of the study patients

Variables	Number	Percent (%)
Age		
20-29 years	11	22%
30-39 years	9	18%
40-49 years	20	40%
50-59 years	7	14%
60 and above	3	6%
Parity		
0	12	24%
1-2	11	22%
3-5	23	26%
>5	6	12%
Residence		
Urban	32	64%
Down town	10	20%
Rural	8	16%
Family income		
<5000 taka per month	3	6%
5 -10,000 taka per month	12	24%
10 - 15,000 taka per month	10	20%
15 -20,000 taka per month	16	32%
20 - 25,000 taka per month	6	12%
>25,000 taka per month	3	6%
Educational status		
Below SSC	7	14%
SSC	12	24%
HSC	22	44%
Graduate	8	16%
Masters	4	8%

The common complaints among the 50 patients were progressive menorrhagia (70%), abdominal swelling (50%), infertility (24%), weight in pelvis (38%), weakness/dizziness or syncopal attack after menstrual period (26%) and recurrent miscarriages (12%).

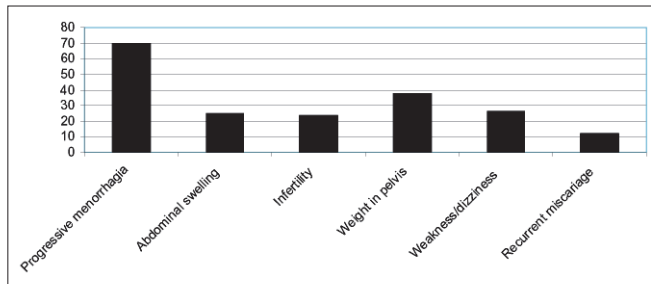


Figure 1: Presenting complaints of the patients

Among the 42 anemic patients 52% had mild anemia, 29% had moderate and 19% had severe anemia.

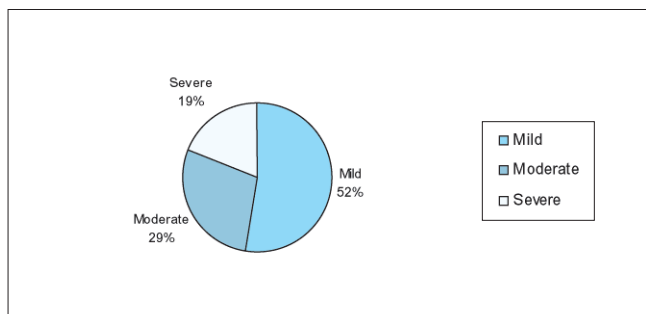


Figure 2: Pattern of anemia

Among 50 women, only 9 (18%) of cases presented within a year of the onset of symptoms with a mean of 4.9 ±4.3 years. While 24 (48%) women presented between 1–5 years of the onset of symptoms, others presented at 6–10years (20%) and more than 10years (8%). Three women (6%) could not recollect exactly the time of onset of the symptoms.

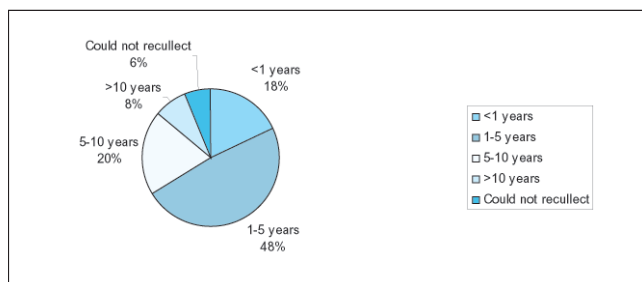


Figure 3 : Duration of presentation after appearance of symptoms

The uterine size at presentation ranged from non-palpable size to size compatible with pregnancy size of 36 weeks with a mean of 15±9.7 weeks uterine size. The uterine size was not palpable 20%(8-10 weeks size 8%, 10-12 weeks size 12%) 12-14 weeks size 12%, 14-16 weeks size 32%, 16-18 weeks size 12%, 18-20 weeks size-10% and >20 weeks size was 14% patients.

Table 2: Size of the uterus

Size	Number	Percent
Not palpable		20%
8-10 weeks size	4	8%
10-12 weeks size	6	12%
Palpable		80%
12-14 weeks size	6	12%
14-16 weeks size	16	32%
16-18 weeks size	6	12%
18-20 weeks size	5	10%
>20 weeks	7	14%

To determine the anatomical location and number of uterine leiomyoma nodules, the intraoperative findings recorded in the operation notes were used. Of the 50 cases managed, while 35(70%) had multiple uterine leiomyoma numbering 2 to 13 with a mean of 7±4.3 myoma, in the remaining 15 (30%) cases single uterine leiomyoma was the finding. Among the 50 patients 80% myomas were intramural, 12% were subserous and 8% were submucous in type. Among the 50 patients associated pathology like cystic ovary, endometriosis and pelvic inflammatory disease was present among 26% of patients.

Table 3: Intra operative findings

Size	Number	Percent (%)
Intra operative findings		
(Number of myoma)		
Single	15	30%
Multiple	35	70%
Type of leiomyoma		
Intramural	40	80%
Subserus	6	12%
Submucus	4	8%
Associated pathology		
Present	13	26%
Absent	37	74%

The surgery was performed by the consultant staffs . The skin incision for the entry of the abdomen was Midline and Pfannenstiel in 46 (92%) and 4 (8%) respectively. Total abdominal hysterectomy with or without bilateral salpingo ophorectomy according to age was the commonest surgical procedure performed in thirty two(64%) cases. Myomectomy was done in 12(24%) cases and laparoscopic assisted vaginal hysterectomy was done in also 6(12%) of patients.

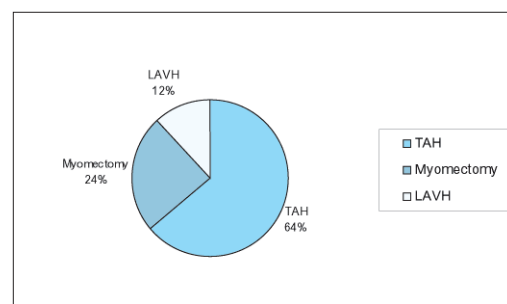


Figure 4: Types of operation

Postoperative complications occurred in 12(24%) women. The most common complications were postoperative pyrexia 6(12%), blood loss warranting transfusion 4(8%), wound infection 5(10%) and prolonged hospital stay 3(6%).

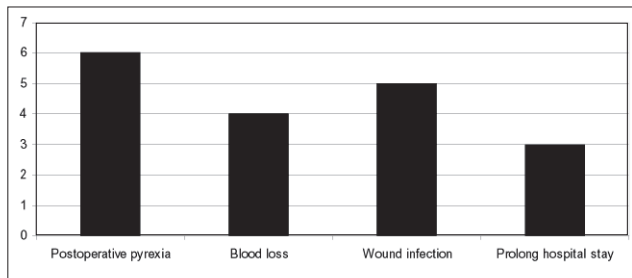


Figure 5: Postoperative complications

DISCUSSION

Uterine leiomyoma are the most common female reproductive tract tumour, however majority of cases are asymptomatic. Several studies have documented an increased incidence of uterine leiomyoma in black women and women of African descent. In a study it was found that 9.3% of all gynaecological cases were the uterine leiomyoma⁷. The finding is similar to 9.8% reported from Lokoja Nigeria, but higher than 7.8% and 8.4% reported from two Nigerian cities of Zaria and Ilesa respectively. As the majority of the uterine fibroids are symptomless, the incidence remains speculative In a study that utilized ultrasound scan to screen women for leiomyoma, the prevalence ranged from 4% in women 20 to 30 years of age to 14.5% in women aged 30 to 40 years of age and 33% in women 40 to 60 years of age⁸.

The present study was done in the Gynae and Obstetrics Department of BSMMU where 50 patients were included for treatment for the diagnose case of leiomyoma. Peak age of presentation was 30 to 49years. In the Caucasians population uterine leiomyoma tend to occur around the age of 30years and commonly causes symptoms between ages 35 and 45 years. In a review, majority, 837(72.1%) of the cases occurred in the third and fourth decades of life; in keeping with similar reports from our environment. The reasons for the high incidence of fibromyoma as from third decades is highly speculative, however female sex hormones have been implicated, particularly stimulation by oestrogen unbalanced by progesterone as a result of persistent anovulation. Nulliparous and primiparous women accounted for 44.4% of cases in this review in keeping with observations that leiomyoma are common in the nulliparous or relatively infertile women.

Most of the patients were from urban location as BSMMU is located in the capital city and access to it to rural community is not easy. Most of the family of the patients had middleclass socioeconomic status and their education background were around HSC level. As most of the female came from the urban area these educational and socioeconomic status did not match the actual scenario of our community.

The commonest symptoms of presentation of the leiomyoma was progressive menorrhagia(70%) and abdominal swelling(50%). Attributing symptoms specifically to uterine fibroid is somewhat problematic because of its high incidence in the population, variable clinical presentation and often asymptomatic nature. However evidence largely drawn from uncontrolled studies, showed that uterine fibroid are commonly identified in women who have menorrhagia, abdominal lump, infertility, or recurrent pregnancy loss. Abnormal uterine bleeding was the commonest presenting symptoms in these women with confirmed uterine fibroid⁹.

The cause of the increased uterine bleeding is not always clear but have been variously been attributed to increase surface area and hyperplasia of endometrium, increased vascularity of the uterus, interstitial fibroid nodules that prevent myometrial contraction and functional ovaries often found in association with uterine fibroid. However a population based study did not find any evidence relating general abnormalities in menstrual cycle length or heaviness to the presence of uterine fibroids¹⁰.

There is a well-recognized association between uterine fibroid and infertility; however the actual contribution of fibroid in infertility remains controversial. Many of the studies examining relationship between fibroid and infertility are retrospective and non-randomised. Current evidence suggests that submucosal and intramural fibroids that distort the uterine cavity can impair in vitro fertilization attempts. The impact of intramural and subserosal fibroids that do not distort the intrauterine cavity is unclear. Despite the lack of clear evidence of their role in preventing conception, submucosal fibroid, intramural fibroids that distort the uterine cavity , fibroids larger than 5cm, and multiple fibroids are often treated in patients with otherwise unexplained infertility. However one fact is clear, infertility either voluntary or involuntary is likely to be followed in time with the development of uterine fibroid, and on the other hand, once fibroid have developed, fertility is likely to be decrease or in abeyance^{11,12}.

Total abdominal hysterectomy with or without salpingo oophorectomy was the commonest (64%) treatment option among the present study patients at BSMMU. Myomectomy and laposcopic assisted vaginal hysterectomy were also performed in some patients. In a study done in abroad myomectomy was the commonest surgery performed, accounting for 54.7% of cases. The remaining had hysterectomy (43.8%) or polypectomy alone (1.5%). Female presented with the low parity, presenting with infertility and recurrent miscarriage, myomectomy being the commoner surgical procedure is expected. Myomectomy was often done in patients with associated infertility to improve their fertility potential or when the fibroid is asymptomatic in women who have not completed their family.

Hysterectomy is usually performed in women who had symptomatic fibroids and had completed their family. The decision to retain the ovaries often depends on how far or close a patient is to menopause and presence of any disease condition involving ovaries.

The postoperative complication ranged from post operative pyrexia (12%), blood loss warranting blood transfusion (8%), wound infection (10%), and prolonged hospital stay (3%). It is heart warming that majority of the patients did not have complications. Post operative pyrexia is a common feature of surgical practice in the tropics. This may be due to wound infection or as a result of oozing of blood into the myomectomy and peritoneal cavity.

Myomectomy is generally associated with higher morbidity than hysterectomy, not only that it is technically more difficult but associated with longer operation time, greater tissue injury and blood loss.

If proper asepsis and hemostasis is maintained preoperative and postoperative complications can be avoided¹³. With increased number of fibroid nodes, surgery is likely to be prolonged with increased tissue injury, blood loss and surgeon fatigue. These are factors known to be associated increased postoperative morbidity.

CONCLUSION

Uterine fibroid is common in our country and usually patients present with menorrhagia, pelvic lump, recurrent miscarriage and infertility. If patients present early some complications like severe anemia, recurrent miscarriage can be prevented. In young patient uterus can be preserved if they present earlier.

DISCLOSURE

All the authors declared no competing interest.

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