An Observational Study on Uterine Myoma in Search of Factors Contributing to its Symptoms

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ABSTRACT

Introduction: Uterine fibroid, the most common benign tumor, contributes significantly on quality of life if symptomatic. The study evaluates the factors which possibly contribute to the symptoms. Objective: To identify the parameters which possibly play a role in symptoms of myoma.

Material and Methods: An observational study on 48 subjects after taking written informed consent selected randomly from women of reproductive age group attending at Gynaecology Out Patient Department.

Results: Different age groups had comparable incidences of fibroids. Most of the patients complained of Menorrhagia (54.2%). Metrorrhagia was complained in 6.2%, dysmenorrhea in 10.4% patients, infertility and pain abdomen each was complained in 14.6% subjects. Most of the study subjects had myoma of 14-week of gestation (39.6%) and 31.2% had 16-week size myoma. The commonest location is found to be fundo-anterior (33.3%), type is intramural (54.2%). Most fibroids had volume of 95.1-125 cc (54.2%). One or two myomas are more common than three or more myomas.

Conclusion: Myoma is common in reproductive ages and throughout the reproductive period incidences in different age groups are comparable. Commonest symptom of myoma is menorrhagia. Most myomas had volume of 95.1-125 cc, situated in fundo-anterior position, are of intramural type. Most myomas, if present as an abdominal lump, are of 14-week gravid uterus size. One or two myomas in uterus are more common than number of myomas more than that.

Keywords: Myoma, Menorrhagia, Metrorrhagia, Dysmenorrhea, Infertility, Estrogen

INTRODUCTION

Uterine myoma (fibroid, leiomyoma, leiomyofibroma) is the most common benign pelvic tumor in females originating from the myometrium of uterus occurring during the middle and late reproductive age group having an incidence of 40% by age 35 Caucasian women.[1] They are composed of large amounts of extracellular matrix - mainly collagen type 1 and type 2 fibers.[2] Although precise causes are unknown; the hormonal and growth factors are considered responsible for myoma.[3]

Size and location are the main factors that determine symptoms and problems.[4] Different locations are intramural, sub-serosal, and submucosal myoma. Removal is necessary in large myoma causing pain, abnormal uterine bleeding, pressure symptoms, infertility or significant cavity distortion. Removal of submucous myoma improves fertility to near-baseline rates.[5]

Symptoms of submucosal and intramural fibroids are mainly abnormal uterine bleeding in form of menorrhagia and metrorrhagia whereas sub-serous ones mainly present with bulk symptoms e.g. abdominal enlargement.[6] Infertility can result from physical factors, altered uterine contraction, cytokine and genetic factors and altered endo-myometrial junction (EMJ) zone.[7] In a Study[8], accelerated mid luteal peristalsis was observed in presence of fibroid and 40% pregnancy rate was shown to be achieved in 1-year follow-up after myomectomy. However, fibroids are identified in 1%-2.4% patients as a cause of infertility.[9] Very rarely a very large fibroid can compress ureter leading to renal manifestations and pelvic vasculature to produce lower leg edema and even venous thrombo-embolism.[10,11]

Apart from location, size, weight of fibroid, volume of fibroid can also be possible role-player in causing symptoms of fibroid. The following study aims to correlate these parameters in women with symptomatic fibroid.

MATERIAL AND METHODS

An observational study was done in Department of Obstetrics and Gynecology, South Eastern Railway Hospital, Garden Reach, Kolkata from 15th December, 2013 to 14th December, 2014. Women of reproductive age group attending at Outpatient department (OPD) of Gynecology and admitted for myomectomy were included in the study.

Sample Size

This is an observational study comparing parameters in total 48 subjects. Subjects were randomly chosen from women of reproductive age group attending at Gynecology OPD and were admitted for myomectomy between 15th December, 2013 to 14th December, 2014.

Inclusion Criteria

- Women of reproductive age group having symptomatic

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myoma, not responding to medical therapy.
- Women of reproductive age group having asymptomatic myoma, sonologically diagnosed, with desire for fertility.
- The size of uterus is 10 - 16 weeks.
- The total number of myoma not more than three (sonologically diagnosed)

Exclusion Criteria
- Women of above and below reproductive age group (15-45 years).
- Women not desiring to preserve their uterus.
- Women having myoma more than 16 weeks size.
- Women having more than three (sonologically diagnosed)
- Women having severe anemia or hemodynamic instability.
- Women unfit for anesthesia.
- History of a bleeding disorder, heart disease, renal disease etc.
- Women on concurrent anticoagulant therapy.
- Pre-operative hemoglobin level of < 9.0 g/dl.
- Women having other concomitant conditions like pregnancy or any malignancy or endometriosis having impact on blood loss.
- The intra-operative time for removal of myoma >2 hours
- History of previous myomectomy

Study Variables
1. Age of patients
2. Symptoms of patients
3. Pre-operative fibroid volume
4. Site of fibroid
5. Type of fibroid
6. Size of fibroid
7. Number of fibroids

Study tools
- Clinical history and detailed examination-Uterine size, shape (multiple or single myoma)
- USG of pelvic organs: Preoperative sonographic evaluation size, number, location and volume of myomas
- Preoperative Investigations: pre-operative hemoglobin and hematocrit values
- Intra Operative Uterine size by direct examination:

Study technique
- Ethical approval was obtained from Ethical Committee Central Hospital South-Eastern Railway.
- After admission for myomectomy, written informed consent of the patient was taken after proper counseling.
- Detail clinical examination and preoperative investigations were done- Hb, Hct, Abdominal ultrasonography etc.
- Operative methods:
- Pfannenstiel incision was made. The uterus was exteriorized, bowels packed away with two large dry mops.

Preoperative, intra-operative and post-operative data was collected in prescribed proforma. Data was collected during a span of one year and was charted in excel work sheet; then the data was analyzed to compare the different parameters.

STATISTICAL ANALYSIS

Statistical Analysis was done after tabulating the data in MS Excel spreadsheet and then percentages were calculated using calculator. Rounding off to closest value was done.

RESULT

Age Distribution: Percentage distribution of patients

Age Group (in years)	Total	% of Total
26-30	15	31.3
31-35	15	31.3
36-40	18	37.4
Total	48	100

Table-1: Age distribution of the patients

Fibroid volume (in cc)	Total	% of Total
65.0 – 95.0 cc	14	29.2
95.1 – 125.0 cc	26	54.2
125.1 – 155.0 cc	8	16.6
TOTAL	48	100

Table-2: Distribution of patients according to pre-operative fibroid volume

Fibroid type	Total	% of Total
Intramural	26	54.2
Submucosal	17	35.4
Subserosal	5	10.4
Total	48	100

Table-3: Distribution of patients according to type of fibroid

Removed fibroid number	Total	% of Total
1	16	33.3
2	23	47.9
3	9	18.8
Total	48	100

Table-4: Distribution of patients according to removed fibroid number

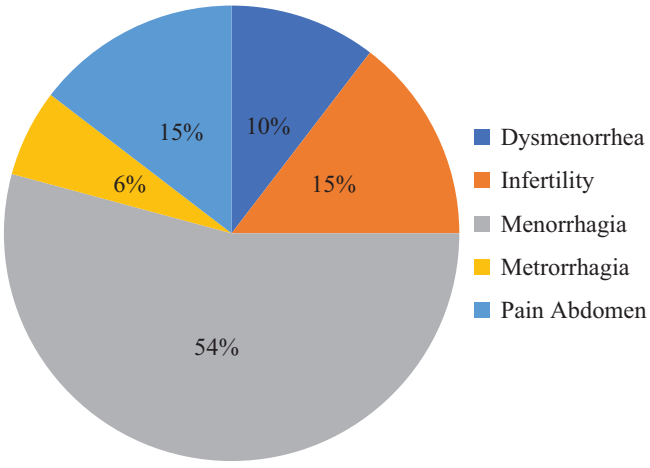

Figure-1: Pie Chart showing distribution of patients according to symptoms

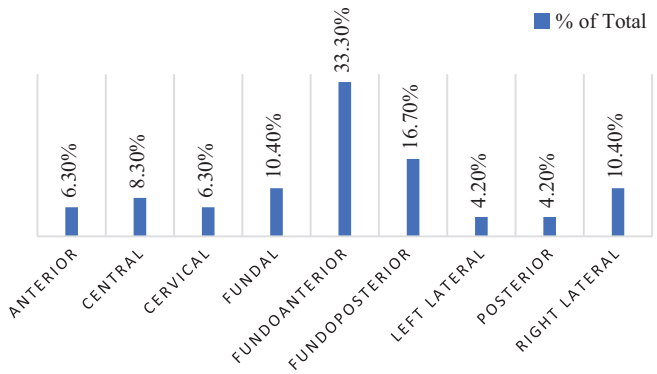

Figure-2: Bar diagram showing Distribution of patients according to site of fibroid

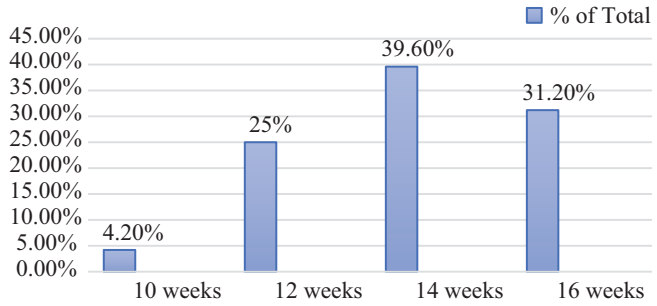

Figure-3: Bar Diagram showing Distribution of patients according to size of fibroid

shows that each age groups were comparable regarding the incidence of myoma (table-1).

Distribution according to symptoms: Maximum patients complained of menorrhagia and metrorrhagia was complained least (figure-1).

Distribution according to pre-operative fibroid volume: Maximum fibroid belonged to 95.1-125.0 cc group and least fibroids belonged to 125.1-155.0 cc group (table-2).

Distribution according to site of fibroid: Fundo-anterior was the commonest site and left lateral and posterior was least common site each (figure-2).

Distribution according to type of fibroid: Intramural type was commonest and sub-serosal type was rarer as per table-3.

Distribution according to size of fibroid: Maximum patients had fibroid of 14-week size and 10-week size was least encountered (figure-3).

Distribution according to number of fibroids: Most patients had two fibroids and three fibroids were found in least patients (table-4).

DISCUSSION

In our study the women of reproductive age group were included as study subjects. According to table-1, the incidence of myoma in different groups were comparable. It was found that both 26-30 years and 31-35-years age group had equal incidence of 31.3% and 36-40-years age group had incidence of 37.3%. The possible explanations are the effects of estrogen and progesterone as evidenced by regression of myoma following menopause.[12,13] Though exact reasons are not known, growth factors and cytokines are thought to play significant role.[3]

As per figure-1, the commonest symptom was menorrhagia (54.2%). This is consistent with literatures and the possible explanations for menorrhagia are the increase in surface area, altered uterine contraction, congestive factors, effects of estrogen. The other menstrual symptoms, which are by far the commonest group of symptoms, are metrorrhagia and dysmenorrhea. Other than presenting as menstrual abnormalities, infertility, chronic pelvic pain, abdominal enlargement and rarely pedal edema due to congestion of pelvic vasculature and nerve compression symptoms can be present.[7,10,14] However, we have not encountered any nerve compression symptoms or pedal edema in our study subjects.

As per table-2 and figure-2, most myomas had a volume of 95.1-125cc and was situated at fundo-anterior location respectively. The volume of myoma correlates with the symptoms and it is seen that menorrhagia is contributed primarily by the increased surface area due to myoma.[17] The reason is probably the alteration in uterine vasculature due to myoma.[15,16] However, a peculiar finding is that both in terms of volume of myomas, a particular range of volume of myoma prevailed more in our study and beyond that range the incidence declined. An explanation to this fact could be that most of them were diagnosed in the early thirties. However, including more subjects in the study could have resolved this issue.

According to table-3, commonest type of myoma, we found in our study, was intramural (54.2%). This is also consistent with different literatures. This is also supported by the fact that most myomas are asymptomatic and are incidentally diagnosed.[18,19] The symptoms are commonly present in submucosal and sub-serosal myomas. Submucosal ones present more commonly as menstrual abnormalities whereas sub-serosal ones present as abdominal lump or pressure symptoms.[6]

As per figure-3, most myomas had 14-week size of gravid uterus in our study. This fact is explained as uterus becomes an abdominal organ approximately at 12 weeks of age. Hence, 12-week, 14-week and 16-week sized uterine myomas are more commonly presented in our study subjects than 10-week sized myomas. Also, one important consideration in this regard is the lack of awareness of study subjects regarding the myomas and ignorance of increased menstrual flow. An observation in form of a questionnaire-based-interview among the study subjects could have been done to resolve and conclude accurately on this issue.

In our study most of the subjects had one or two myomas as per table-4.

CONCLUSION

- Myoma is common in reproductive ages and through out the reproductive period incidences in different age groups are comparable.
- Commonest symptom of myoma is menorrhagia
- Most myomas had volume of 95.1-125 cc, situated in fundo-anterior position, are of intramural type and

weighed 80-120 gm

- Most myomas, if present as an abdominal lump, are of 14-week gravid uterus size.
- One or two myomas in uterus are more common than number of myomas more than that.

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