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Original research article

A prospective study on uterine myomas in a tertiary care hospital

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Abstract

Background: The most typical benign uterine tumour is a leiomyoma, which is also the most typical pelvic tumour in females.[1] Every fourth or fifth woman of reproductive age experiences it. Unfortunately, symptomatology is still inconsistent. The number, size, and location of the tumour are thought to affect the symptomatology, although most leiomyomas are thought to be asymptomatic and advance slowly.[2]

Objectives

To study 100 cases of fibroid uterus with respect to:

1. Clinical spectrum.
2. Pathological correlation, with type of fibroid endometrial and ovarian changes.
3. Associated conditions (medical and surgical co-morbidities).

Material & Methods

Study Design: Descriptive Cross sectional study.

Study area: Department of Obstetrics & Gynaecology, Shimoga Institute of Medical Sciences, Shivamogga.

Study Period: April 2017 - March 2018.

Study population: Cases of fibroid uterus.

Sample size: Study consist a total of 100 subjects.

Study tools and Data collection procedure: On admission, a detailed history, clinical examination and investigations were made. The following points were noted in the history.

1. Age and socio-economic status of the patient.
2. History of presenting complaints was taken in detail: noting down the following:

(i) Menstrual disorder (detailed menstrual history is taken) Menorrhagia / Metrorrhagia / Polymenorrhea / Dysmenorrhea / Postmenopausal bleeding.

(ii) White discharge per vagina – amount, duration, whether blood stained.

Results: White discharge per vaginum was seen in 6% of the cases, which was most commonly associated with chronic cervicitis, also seen in cases of fibroid polyp and prolapse. Pain abdomen was seen in 41% of the cases, in most of the cases pain was associated with cystic ovaries, in others pain was due to endometriosis, PID, urinary tract infection or cholelithiasis. Presence of a mass was complained in 8% of the cases. Urinary problems were noticed in 2% of the cases, which was typically associated with cervical fibroid / broad ligament fibroid.

Conclusion: In conclusion the emerging drugs like SERMs and SPRMs must be available throughout the tertiary centres as most of the patients are from low socioeconomic background and cannot afford the drugs. LNG IUS also continues to be out of reach for most of these women as it needs regular follow up.

Keywords: Leiomyoma, endometriosis, cervical fibroid / broad ligament fibroid

Introduction

The most typical benign uterine tumour is a leiomyoma, which is also the most typical pelvic tumour in females [1]. Every fourth or fifth woman of reproductive age experiences it. Unfortunately, symptomatology is still inconsistent. The number, size, and location of the tumour are thought to affect the symptomatology, although most leiomyomas are thought to be asymptomatic and advance slowly [2].

Due to the vast range of clinical symptoms they can present with, such as irregular menstruation, pelvic pain, and infertility, they place a significant financial and public health burden on society. They assume significance, especially in our nation where anaemia is a major result. Therefore, there is a need for methods to stop the growth and treat without surgery.

The primary form of treatment for myomas has long been surgery. Hysterectomy is a desirable option for women who have finished having children because it eliminates both symptoms and recurrence risks. Myomectomy is an option for women who want to keep their uterus for menstruation purposes or other

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future pregnancies.

Recently, non-surgical methods like GnRH hormone analogs/agonists have become more popular. Laparoscopic cryoablation [5, 7], radiofrequencies thermal ablation [6], MRGUs [8, 9], RU 486 [3], LNG-IUS, SERM such as ulipristal asoprisnil, HIFU (high intensity focused ultrasound), and selective uterine artery embolization [4].

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 [10]. 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 [11]. Infertility can result from physical factors, altered uterine contraction, cytokine and genetic factors and altered endo-myometrial junction (EMJ) zone [12].

Hence the present study was undertaken to analyze the clinicopathological spectrum in cases of leiomyoma of the uterus and to know regarding the pattern of presentation, mode of treatment and associated conditions.

Objectives

To study 100 cases of fibroid uterus with respect to:

1. Clinical spectrum.
2. Pathological correlation, with type of fibroid endometrial and ovarian changes.
3. Associated conditions (medical and surgical comorbidities).

Material & Methods

Study Design: Descriptive Cross sectional study.

Study area: Department of Obstetrics & Gynaecology, Shimoga Institute of Medical Sciences, Shivamogga.

Study Period: April 2017 – March 2018.

Study population: Cases of fibroid uterus

Sample size: Study consist a total of 100 subjects.

Sampling Technique: Simple Random technique.

Ethical consideration: Institutional Ethical committee permission was taken prior to the commencement of the study.

Study tools and Data collection procedure

On admission, a detailed history, clinical examination and investigations were made. The following points were noted in the history.

1. **Age and socio-economic status of the patient.**
2. **History of presenting complaints was taken in detail: Noting down the following:**

(i) Menstrual disorder (detailed menstrual history is taken) Menorrhagia / Metrorrhagia / Polymenorrhea / Dysmenorrhea / Postmenopausal bleeding.

(ii) White discharge per vagina: Amount, duration, whether blood stained.

(iii) Bladder and bowel symptoms: Like frequency, retention, dysuria and dyspepsia and indigestion.

(iv) Mass per abdomen: When she noticed the mass, rate of growth, presence of pain and type of pain.

3. **Menstrual history: The following points were noted:**

(i) Age of menarche.

(ii) Past menstrual cycle - regularity of periods, duration of cycles menstrual flow-scanty, moderate or excessive, associated with pain or not, presence of any intermenstrual bleeding.

(iii) Last menstrual period.

(iv) Age of menopause

4. **Obstetric history: The following points were considered.**

(i) Duration of marriage

(ii) **Abortions:** If any, and gestational age

(iii) **Deliveries:** Preterm/term

(iv) **Others:** Malpresentation Incoordinate uterine action, plan.

(v) Mode of delivery

(vi) Third stage complications

(vii) **Puerperium:** Fever, subinvolution of uterus.

5. **Past history:** of diabetes, hypertension tuberculosis epilepsy bleeding disorders thyroid disorders and infertility were noted.
6. Past surgical history of myomectomy.
7. Family history of myomas in the mother aunt and siblings.

Clinical Examination

1. **Under general examination: importance was given to following points**

a) Evidence of anemia

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b) Presence of edema of feet
c) Vitals and examination of cardia and respiratory system

2. Local examination

(i) Per abdomen

a) Inspection: Presence of mass, dilated veins over the surface of abdomen.

b) Palpation: Whether the mass arises from the pelvis, i.e. lower border not made out, tenderness, size, surface, boundaries, consistency of mass and mobility.

c) Percussion: For presence of ascites.

d) Auscultation: For uterine souffle.

(ii) Per speculum examination

a) Condition of vagina.
b) Condition of cervix - for presence of erosions, descent of cervix, for any growth.
c) Any discharge if present, presence of excoriations
d) Presence of cystocele, rectocele or enterocele

(iii) Bimanual examination

a) Direction of cervix and its consistency.
b) Size, position and consistency of uterus.
c) Mobility of uterus and transmission of the movement of cervix to the growth and vice versa.
d) Mass felt separately from the uterus.
e) Tenderness in the fornix.

(iv) Sounding of the uterus was done

The diagnosis of fibroid uterus was made by clinical examination in majority of our patients, considering the menstrual history, firm mass in the hypogastric region, transmitting movement from cervix to mass and vice versa.

Scanning

At laparotomy: Size of uterus, number and situation of fibroids, condition of tubes and ovaries were noted. In cases posted for myomectomy, chromotubation was made utilising methylene blue. The ovaries were conserved in cases of hysterectomies unless associated with pathology and in elderly patients. The hysterectomy specimen was cut anteriorly in the midline and near the cornu to inspect the cavity and seedling fibroids. The specimen was sent for histopathological examination of endometrium, myometrium.

Microscopic examination done

(i) To confirm the diagnosis.
(ii) For degenerative changes.
(iii) Associated endometrial pathology.
(iv) Associated with adenomyosis and
(v) For changes in the ovaries, tubes and cervix.

Statistical analysis

The data was entered into MS-Excel, & the statistical analysis was carried out with IBM SPSS Version 25.0. The data values for categorical variables are expressed as numbers and percentages. The connection between the groups was tested using the chi-square test. The data values for continuous variables are shown as mean & standard deviation. A student's t-test was used to compare the mean differences between groups. All P-values less than 0.05 are considered statistically significant.

Observations & Results

Table 1: Incidence of leiomyoma in relation to age

Age (in years)	Percentage
21-30	7
31-40	42
41-50	46
50+	5

leiomyomas were occurring with almost equal incidence in reproductive and the premenopausal age group, most commonly occurring in the 4th decade. The mean age being 42 years. The youngest patient in our study was 26 years old, and the oldest was 58 years old.

Though leiomyoma is a disease of low parity, in our study we have noted it to be more common in multiparous women.

There is a long period of secondary infertility before the symptoms could develop, i.e. the interval between last delivery and development of symptoms in most of the cases is significantly long, which in 46% of the cases was 16 -20 years back, and in 25% of the cases it was more than 20 years back. There

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are just 2% cases with last child birth less than 5 years.

Table 2: Interval between sterilization and development of symptoms

Period since sterilization in years	Percentage of patients
<5	2
6-10	3
11-15	15
16-20	33
>20	17
Not tubectomised	29

Mean age of the sterilization - 23.48 ± 4.84. Minimum - 3 years. Maximum - 28 years
Early age at marriage and early sterilization also play a role. The mean age at which the patients were sterilized was 23 years. In 33% of the patients the duration between sterilization and development of symptoms was 16-20 years.

Table 3: Incidence of various symptoms in combination in the present study

Symptoms	Percentage
Menstrual disturbances	65
Dysmenorrhea	14
White discharge	6
Pain abdomen	41
Mass/abdomen	8
Mass/vagina	1
Urinary symptoms	2
Bowel disturbances	1
Infertility	0
Dyspareunia	1
Others	3

Dysmenorrhea was seen in 14% of the cases. Spasmodic dysmenorrhea occurs in intramural and submucous fibroid. Congestive dysmenorrhea results from increased vascularity in the pelvis, due to associated pelvic pathology.
White discharge per vaginum was seen in 6% of the cases, which was most commonly associated with chronic cervicitis, also seen in cases of fibroid polyp and prolapse. Pain abdomen was seen in 41% of the cases, in most of the cases pain was associated with cystic ovaries, in others pain was due to endometriosis, PID, urinary tract infection or cholelithiasis. Presence of a mass was complained in 8% of the cases. Urinary problems were noticed in 2% of the cases, which was typically associated with cervical fibroid / broad ligament fibroid.
None of the patients presented with infertility as the chief complaint. 1% of the patients presented with bowel discomfort. Other symptoms like vomiting, fever, postcoital bleeding, swelling of lower limbs, mass per vaginum & abdominal discomfort were observed in 3% of the cases. Anemia was seen in 50% of the cases, of which 40% were severely anemic, 30% were moderately anemic & another 30% had mild anemia.
All the patients were hospitalized, after detailed examination and investigations, the patients were treated for anemia and other medical disorders. Patients underwent surgery or were treated medically with progesterone therapy for 6months or levonorgestrel intrauterine contraceptive device. The type of surgery was chosen depending on the age of the patient, parity, associated adnexal and pelvic pathology.
In the present study it was noted that most of the patients presented with menstrual disturbances, among which menorrhagia was comparatively more, though statistically not significant. Menstrual disturbances was the most common modality of presentation (65%), amongst which Heavy menstrual bleeding (83.4%) was seen most commonly, typically associated with intramural & submucous fibroids, in cases with a subserous fibroid, menorrhagia was due to associated endometrial hyperplasia. Metrorrhagia was found in 7.81% of the cases and polymenorrhagia in 6.25%. Only one case of postmenopausal bleeding was found.

Table 4: Incidence of various management done

Type of operation	Percentage
Total abdominal hysterectomy	43
Total abdominal hysterectomy with bilateral salpingo-oophorectomy	11
Total abdominal hysterectomy with unilateral salpingo-oophorectomy	24
Myomectomy	1
Total abdominal hysterectomy with bilateral salpingectomy	2

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Total abdominal hysterectomy with unilateral salpingectomy	2
Subtotal hysterectomy	1
Medical management with progesterone	6
Levonorgestrel intrauterine contraceptive device	10

43% patients underwent total abdominal hysterectomy (TAH), 24% TAH with unilateral salpingo-oophorectomy, 11% underwent TAH with bilateral salpingo-oophorectomy, 1% underwent myomectomy, 2% underwent TAH with bilateral salpingectomy 2% underwent TAH with unilateral salpingectomy, 6% cases resolved with medical management, 10% cases were inserted with levonorgestrel eluting IUS, 1% cases underwent subtotal hysterectomy.
Myomectomy was performed in young & nulliparous women, to conserve the fertility, the results of myomectomy could not be evaluated as the study duration is short. Subtotal hysterectomy had to be done in a case due to dense adhesions between bladder and uterus.
The size of the specimen was noted, following which the specimen was dissected in the center and at the cornual ends, to look for the situation, type and number of fibroids.

Table 5: Size of fibroid uterus in studied cases

Size of the uterus	Percentage
<16weeks	76
16-20weeks	22
>20weeks	2

In our series it was noted that the size of the fibroid uterus varied from a few centimetres to 24 weeks of gravid uterus. It is seen that, about 76% were of the size of 16 weeks gravid uterus, 22% were of the size between 16-20 weeks, and huge fibroids of >20 weeks were encountered in 2% of the patients.

Table 6: Incidence of various types of leiomyomas

Type of fibroid	Percentage
Subserous	11
Intramural	79
Submucous	15
Broadligament	2
Cervical	7

All the leiomyomata were corporeal, no extrauterine fibroids were encountered. Among the uterine about 93.75% were in the body & 7% were cervical, intramural fibroid were the commonest variety comprising about 79% of the cases, 15% submucous, 11% subserous, 2% were broad ligament fibroids, all were pseudo broad ligament fibroids.
Cystic and hyaline degeneration were the most common with an incidence of 2% each. All the other degenerations were not found in the present study.

Table 7: Incidence of histopathological pattern of endometrium

Endometrial pattern	Percentage
Proliferative	49
Secretory	13
Hyperplasia	13
Simple Proliferative Glandular Hyperplasia	25

Histopathological pattern of endometrium was studied. It showed proliferative endometrium in 49%, secretory changes were noted in 13%, endometrial hyperplasia was seen in 13% cases, simple proliferative glandular hyperplasia was seen in 25%.

Table 8: Histopathological abnormalities in combination associated with myoma

Associated pelvic pathology	Percentage
Cysticovaries	6
Chronic cervicitis	85
Adenomyosis	8
Pelvic inflammatory	4
Fibroidpolyp	5
LSIL	1
Granulosa cell tumor	1

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The associated pathology in the adnexa and other pelvic structures was studied, which showed cystic ovaries in 6% of the cases. A variety of cysts were noted like, simple serous cyst, follicular cyst, serous/papillary cystadenoma, dermoid cyst, corpus luteal cyst. Adenomyosis was found in 8% of the cases, chronic cervicitis was seen in 85% of the cases and PID in 4% of the cases. Fibroid polyp was seen in 5% cases, 1% had a Granulosa cell tumor and 1% had Low grade squamous intra epithelial neoplasia.

Overt hypothyroidism was found in 6% cases and 1% case had subclinical hyperthyroidism. While 3% cases had chronic hypertension 3% cases were diagnosed as a part of the work up to surgery or during the course of treatment. Diabetes controlled with oral hypoglycemic agents was seen in 1% case.

Discussion

Women in the reproductive age range were included as study participants in our study. The incidence of myoma was comparable among groups, as seen in table 1. It was discovered that the incidence rates for the age groups of 31 to 40 was 42%, and the incidence rates for the 41 to 50 age groups were 46%. The effects of oestrogen and progesterone, which are demonstrated by the myoma's regression after menopause, are potential reasons [13, 14].

The incidence of leiomyoma is highest in the 4th decade, with not a significant difference between the incidence in 3rd decade. Similarly, the incidence of leiomyoma was highest among the multiparous group in the studies done by Maitri *et al*. [14]. Though the literature states that, leiomyoma is a disease of low parity. This is probably due to early age at marriage, and long gap between the last child birth and development of symptoms.

It is widely established that myoma risk is inversely correlated with parity and that the frequency of term pregnancies reduces myoma risk. It's possible that both hormonal and non-hormonal mechanisms contribute to this connection. Parity indicates that term pregnancies and reduced menstrual cycles affect levels of oestrogen receptors, growth factors, and ovarian hormones as well as uterine tissue. Myomas are more common in nulliparous women as a result, while being overweight or obese may diminish their inverse relationship with parity [15].

This study had thoroughly examined the self-reported bleeding and pain symptoms of women who have been given a uterine fibroids diagnosis. However, it must be kept in mind when interpreting the study's findings that diagnosed women in the study population really represent cases that received more clinical attention due to their symptoms, whereas asymptomatic myomas frequently go misdiagnosed. The findings indicated that compared to women without uterine fibroids, those who had been diagnosed with uterine fibroids had heavy and protracted bleeding more frequently.Besides, diagnosed women indicated more often to have unpredictable and irregular bleedings, also described as frequent periods that appear more often than just every 24 days or bleedings between periods. These findings are consistent with previous studies [16, 17, 18]. While the association between uterine bleeding symptoms and myomas is long known, the pathomechanism is not understood yet. Possible causes are venous ectasia resulting from mechanical compression of veins by myomas, or altered function, expression or storage of vasoactive growth factors produced by myomas.

The results of this study reveal that, in addition to uterine bleeding symptoms, women with uterine fibroids experience various gynaecological discomfort symptoms more frequently than women without a uterine fibroids diagnosis. The following pain symptoms were more frequently reported by women with uterine fibroids: pressure on the bladder, chronic pelvic discomfort, and pain at various menstrual cycle stages. Among addition, unpleasant sexual encounters are more common in myoma-affected women. Women with uterine fibroids reported more frequently having various pain symptoms than women without a diagnosis, even after controlling for age and co-morbidities.

According to an Italian study, women with uterine fibroids were more likely to report moderate or severe dyspareunia and moderate or severe non-cyclic pelvic pain than women without uterine fibroids, but not moderate to severe dysmenorrhea, in a population of people who did not seek medical attention [19]. The results of the studies on discomfort during sexual contact vary: While Ertunc *et al*. discovered that there may be a possible impairment, primarily due to pain during sexual activity, in women with myomas, Ferrero *et al*. observed that women with uterine fibroids do not have an elevated prevalence or severity of profound dyspareunia [20, 21].

Compared to the statistics from the study conducted by Maitri *et al*. [14], it has been seen that the number of TAH with unilateral salpingo oophorectomy have increased. Also, the usage of LNG IUCD has risen and has proven to be both efficient and acceptable to the patients. Few cases have resolved with usage of progesterone for 6 months.

The histological pattern of endometrium observed was proliferative type in 49% of the cases, these results are comparable to that quoted by other authors. The incidence of simple proliferative glandular hyperplasia was very high in our study which is contrary to the incidence quoted by the other studies. This indicates the hyperestrogenic states associated with fibroids, endometrium was secretory in 13% of the cases.

In our research, we discovered that intramural myomas were the most prevalent (79%) form.

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Additionally, this is supported by various literary works. This is further confirmed by the fact that most myomas are accidentally detected and asymptomatic. Submucosal and sub-serosal myomas frequently exhibited the symptoms. Submucosal ones typically manifest as menstruation problems, whereas sub-serosal ones do so as symptoms of an abdominal lump or pressure.
The association with cystic ovaries and adenomyosis also indicate hyperestrogenism. The incidence of cystic and hyaline degeneration was 2% each which is similar to the other studies. Other degenerations were not found.

Conclusion

In conclusion the emerging drugs like SERMs and SPRMs must be available throughout the tertiary centres as most of the patients are from low socioeconomic background and cannot afford the drugs. LNG IUS also continues to be out of reach for most of these women as it needs regular follow up. The concerned authorities must educate the women from rural background regarding the need for routine gynaecological visits starting from the 3rd decade. All these measures will bring down the hysterectomy rate and ensure greater compliance with medical management.

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