Section: OBGY

Original Research Article

EPIDEMIOLOGICAL AND CLINICOPATHOLOGICAL STUDY OF FIBROID UTERUS

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ABSTRACT

Background: Fibroids, also called leiomyomas, myomas, leiomyofibromas, fibroleiomyomas, or fibromas, are benign tumors that arise from the myometrium's smooth muscles and the uterine connective tissues that support them. Fibroids, the most common benign tumor in women, affect 40 to 50% of women over the age of 35 and are usually detected in the middle and later stages of the menstrual cycle. According to estimates, 40% of women over 50 who are menstruation experience it. Uterine fibroids' symptoms are frequently signs that a hysterectomy is necessary. Numerous people have more than one fibroid. There are no symptoms in 50% of uterine fibroids patients.
Objectives: 1. To observe and study the epidemiology of uterine fibroids. 2. To study and compare the clinic-pathological spectrum in cases of fibroid uterus and to know their pattern of presentation
Methods: Study Design: Cross sectional study. **Study place:** Department of Obstetrics & Gynecology, GITAM medical college, Visakhapatnam. **Study Duration:** September 2022 to July 2024. **Study population:** All the patients who were undergoing surgical management after diagnosis with uterine fibroids in GITAM. **Study sample:** 165
Result: majority of patients (44.2%) are between the ages of 41 to 50 years,74.5% of patients had menstrual disturbances, 20.6% of patients had dysmenorrhea, 12.7% of patients had white discharge per vagina, 35.1% of patients had abdominal pain, 12.7% of patients had mass per abdomen, 1.2% of patients had mass per vagina, 17.6% of patients had urinary problems, 13.3% of patients had infertility, 4.8% of patients had other symptoms.74.5% of patients had menstrual disturbances of which 56.9% of patients had menorrhagia, 9.7% of patients had metorrhagia, 13% of patients had polymenorrhagia, 18.7% of patients had polymenorrhoea and 1.6% of cases had postmenopasual bleeding. majority of patients (47.8%) underwent TAH followed by 33.9% of patients underwent TAH with BSO, 11.5% of patients underwent myomectomy, and 6.7% of cases underwent TAH WITH USO. majority of patients (61.8%) had intramural type of fibroid followed by 15.6% of patients had multiple fibroids, 10.3% of patients had submucous fibroids, 4.8% of patients had cervical fibroids, and subserous fibroids each and 2.4% of women had broad ligament fibroids. majority of patients (69.7%) had proliferative endometrium, majority of patients (72.7%) had chronic cervicitis.
Conclusions: There is a higher prevalence of uterine fibroids among women of reproductive age, particularly in their 4th and 5th decade, with rare occurrence before puberty and cessation of growth after menopause, Intramural fibroids were the most frequently encountered type, Microscopic

examination revealed that proliferative and simple hyperplastic endometrium were the most common findings.
Keywords: leiomyomas, Myomectomy, hysterectomy, TAH, TAH+BSO, TAH+USO.

INTRODUCTION

Fibroids, also called leiomyomas, myomas, leiomyofibromas, fibroleiomyomas, or fibromas, are benign tumors that arise from the myometrium's smooth muscles and the uterine connective tissues that support them. Fibroids, the most common benign tumor in women, affect 40 to 50% of women over the age of 35 and are usually detected in the middle and later stages of the menstrual cycle. According to estimates, 40% of women over 50 who are menstruation experience it. Uterine fibroids' symptoms are frequently signs that a hysterectomy is necessary. Numerous people have more than one fibroid. There are no symptoms in 50% of uterine fibroids patients.[1] The majority of fibroids are believed to grow slowly and be asymptomatic, but the number, extent, and location of the tumor are thought to influence the symptomatology.[2]

Their wide range of clinical symptoms, which include irregular menstruation, infertility, and pelvic pain, place a heavy financial strain on society and jeopardize women's health.

They are especially significant since they contribute significantly to anemia in emerging nations like India. Thus, many non-surgical methods are necessary for fibroid prevention and growth restriction.[3] To treat fibroids, a variety of surgical and medical treatments are employed. Hypo-estrogenic medications are used in medical therapy to temporarily reduce size and relieve discomfort. Myomectomy and hysterectomy come under surgical management. One of the most common reasons for hysterectomy in India and around the world nowadays is uterine fibroids.[4,5]

An increasingly popular alternative treatment for symptomatic fibroids is trans-catheter embolization of the uterine arteries. Most patients find it to be quite effective and well-tolerated.

The most notable is that uterine artery embolization is uterine sparing and minimally invasive, with a brief recovery period.[6,7] With a high frequency between the ages of 41 and 50, uterine fibroids and adenomyosis were the most prevalent benign disorders of the uterus. Since histology is the only source of ultimate diagnosis, every material from a hysterectomy should undergo a histopathological examination.[8]

The current study was conducted at the Department of Obstetrics and Gynecology in GITAM, Visakhapatnam, to assess the epidemiological, clinical, and pathological spectrum among women with uterine fibroids. Additionally, the study aimed to identify the manner of therapy, pattern of presentation, and associated diseases.

Aim and Objectives

Aim: To study the epidemiological and clinic-pathological profile of fibroid uterus in our area

Objectives

1. To observe and study the epidemiology of uterine fibroids
2. To study and compare the clinic-pathological spectrum in cases of fibroid uterus and to know their pattern of presentation.

MATERIALS AND METHODS

Study Design: Cross sectional study

Study Setting: Department of Obstetrics & Gynecology, GITAM medical college, Visakhapatnam, India.

Study Duration: September 2022 to July 2024

Study Population: All the patients who were undergoing surgical management after diagnosis with uterine fibroids in GITAM.

Sample size: 165

Inclusion Criteria

1. All women with fibroid uterus attending OBG OPD and underwent surgical management

Exclusion Criteria

1. Women of less than 20years
2. Not willing to participate.

Approval for the Study

Written approval from Institutional Ethics committee was obtained beforehand. Written approval of OBGY and other related department was obtained. After obtaining informed verbal consent from all patients coming to our institute during study period according to exclusion and inclusion criteria admitted to OBGY ward of tertiary care centre such cases were included in the study.

Methodology

Selected patients attended the gynecology outpatient department. Clinical complaints most frequently related with intramural fibroids in women were abdominal bulk and abdominal pain. The sociodemographic profile was assessed. These patients' case files were located, and pertinent data was taken out of them using a data collection form created especially for the investigation. Sociodemographic information, clinical presentation and results, management strategy, surgical results, and treatment outcome were among the information that was gathered.

The sample was sent for endometrial and myometrial histopathology analysis. Atrophic patterns, secretory hyperplasia, proliferative

hyperplasia, and cystic glandular hyperplasia can all be seen in histology. Myoma may coexist with certain histological abnormalities, such as pelvic inflammatory disease, adenomyosis, endometriosis, cystic ovaries, and chronic cervicitis.

Data Entry and Analysis

Mean and standard deviation were employed in descriptive analysis for quantitative data, and frequency and proportion were utilized for categorical variables. Furthermore, appropriate diagrams including pie charts, bar charts, and box plots were used to illustrate the data. Within each category of the explanatory variable, all quantitative variables were examined visually by histogram analysis, and the Shapiro- Wilk test was used to determine normality. Software called SPSS V25 was used for statistical analysis. A P value of less than 0.05 was deemed significant.

RESULTS

Majority of patients (46.7%) had parity 3 followed by 32.1% of patients had parity 2, 16.4% of patients had parity 1 and 4.8% of patients were nulliparous women. majority of women (61.8%) had a duration of more than 20 years followed by 22.9% of women had 15 to 19 years, 12.7% of women had duration of 10 to 14 years, 1.9% had duration of 5 to 9 years and one patient had duration of 0 to 4 years of last childbirth. The mean duration of last childbirth in women of present study was 18.56 ± 4.48 years with minimum duration of 3 years and maximum duration of 28 years.

Table 1: Distribution of age among the study population (n=165)

Age group (years)	Sample size (n)	%
21 – 30	9	5.5
31 – 40	66	40.0
41 – 50	73	44.2
51 – 60	17	10.3
Total	165	100.0
Mean ± SD	42.44 ± 6.89 years	
Range	25 – 60 years	

In present study, the majority of patients (44.2%) are between the ages of 41 to 50 years followed by 40% are between the ages of 31 to 40 years, 10.3% are between the ages of 51 to 60 years and 5.5% are between the ages of 21 to 30 years. The mean age of 42.44 ± 6.89 years and a range of 25 years to 60 years.

Table 2: Distribution of symptoms among the study population (n=165)

Symptoms	Sample size (n)	%
Menstrual disturbances	123	74.5
Dysmenorrhea	34	20.6
White discharge	21	12.7
Abdominal pain	58	35.1
Mass per abdomen	21	12.7
Mass per vagina	2	1.2
Urinary symptoms	29	17.6
Infertility	22	13.3
Asymptomatic	1	0.6
Others	8	4.8

In present study, 74.5% of patients had menstrual disturbances, 20.6% of patients had dysmenorrhea, 12.7% of patients had white discharge per vagina, 35.1% of patients had abdominal pain, 12.7% of patients had mass per abdomen, 1.2% of patients had mass per vagina, 17.6% of patients had urinary problems, 13.3% of patients had infertility, 4.8% of patients had other symptoms such as vomiting, post coital bleeding, swelling of lower limbs, fever and abdominal discomfort and one patient was asymptomatic.

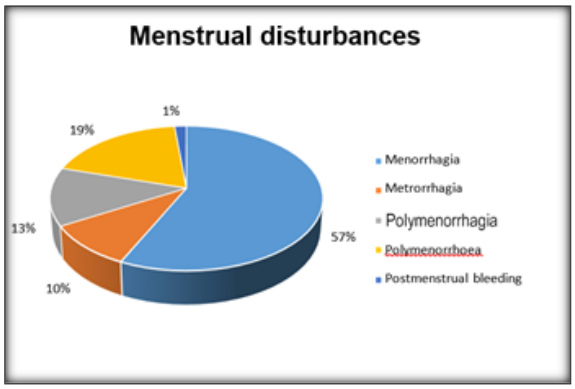

Chart 1: Pie chart showing distribution of menstrual disturbances among the study population

In present study, 74.5% of patients had menstrual disturbances of which 56.9% of patients had menorrhagia, 9.7% of patients had metorrhagia, 13% of patients had polymenorrhagia, 18.7% of patients had polymenorrhoea and 1.6% of cases had postmenopasual bleeding.

Table 3: Distribution of various surgeries done among the study population (n=165)

Surgical procedure	Sample size (n)	%
TAH	79	47.8
TAH+BSO	56	33.9
TAH+USO	11	6.7
Myomectomy	19	11.5
Total	**165**	**100.0**

In the present study, majority of patients (47.8%) underwent TAH followed by 33.9% of patients underwent TAH with BSO, 11.5% of patients underwent myomectomy, and 6.7% of cases underwent TAH WITH USO.

Table 4: Distribution of different types of uterine fibroids among the study population (n=165)

Type of fibroid	Sample size (n)	%
Subserous	8	4.8
Intramural	102	61.8
Submucous	17	10.3
Broad ligament	4	2.4
Cervical	8	4.8
Multiple	26	15.6
Total	**165**	**100.0**

In present study, majority of patients (61.8%) had intramural type of fibroid followed by 15.6% of patients had multiple fibroids, 10.3% of patients had submucous fibroids, 4.8% of patients had cervical fibroids, and subserous fibroids each and 2.4% of women had broad ligament fibroids.
In present study, majority of patients (40%) had myxoid degeneration followed by 28.6% of patients had calcareous degeneration and one patient each had hyaline degeneration, and cystic degeneration.

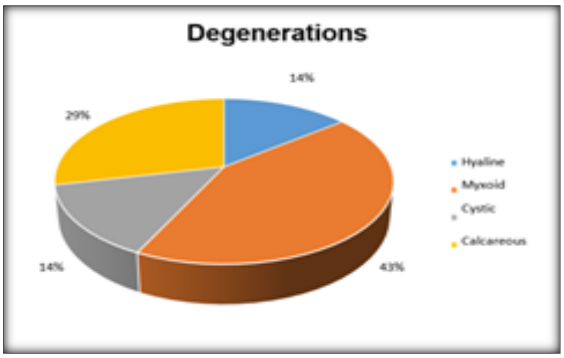

Chart 2: Pie chart showing distribution of degenerations among the study populations

Table 5: Distribution of endometrial histopathological patterns among the study population (n=165)

Endometrial HPE findings	Sample size (n)	%
Proliferative	115	69.7
Secretory	16	9.7
Simple hyperplasia	8	4.8
Cystic glandular hyperplasia	3	1.8
Atrophic	13	7.9
Unknown	10	6.1
Total	**165**	**100.0**

In present study, majority of patients (69.7%) had proliferative endometrium followed by 9.7% of patients had secretory endometrium, 7.9% of patients had atrophic endometrium, 6.1% of cases had unknown pathological findings 4.8% of patients had simple hyperplasia of endometrium and 1.8% of patients had cystic glandular hyperplasia of endometrium.

Table 6: Distribution of histopathological abnormalities associated with pelvic pathology among study population (n=165)

Associated pelvic pathology	Sample size (n)	%
Cystic ovaries	12	7.3
Chronic cervicitis	120	72.7
Adenomyosis	23	13.9
Endometritis	2	1.2

Pelvic inflammatory disease	8	4.8

In present study, majority of patients (72.7%) had chronic cervicitis followed by 13.9% of patients had adenomyosis, 7.3% of patients had cystic ovaries, 4.8% of cases had pelvic inflammatory diseases and 1.2% of patients had endometritis.

DISCUSSIONS

During a period of two years, a prospective observational study was conducted at GITAM Medical College's Department of Obstetrics and Gynecology. The study included 165 patients diagnosed with uterine fibroids that met the specified inclusion and exclusion criteria and underwent hysterectomy, following informed consent.

In the current study, the largest proportion of patients (44.2%) were aged between 41 and 50 years, followed by 40% of patients aged 31 to 40 years. Additionally, 10.3% of patients were aged 51 to 60 years, and 5.5% were aged 21 to 30 years. The mean age of the patients was 42.44 ± 6.89 years, with an age range spanning from 25 to 60 years. In the research carried out by Jalandhara J *et al.*[9] indicated that majority of cases belong to age group of 30 to 40 years with mean age of 38.5 years. Similarly, in an analysis carried out by Mangala G *et al.* [10] indicated that majority of cases belong to age group of 31 to 40 years with a range of 26 to 59 years which was same with current study. Whereas in research carried out by Kaushal A *et al.*[11] demonstrated majority of patients belong to age group of 50 to 60 years and in research performed by Priyadarshini *et al.*[12] shown that majority of cases belong to age group of 41 to 50 years with a range of 24 to 50 years.

Table 7: Comparison of present study with previous study

Study	Nulliparous	Primi para	Multipara
Present study	4.8%	16.4%	78.8%
Mangala G *et al.*	1.3%	3.8%	94.9%
Priyadarshini *et al.*	3%	10%	87%
Kaur M *et al.*	2.31%	-	97.69%
Kavya K *et al.*	6%	-	94%

In present study, 74.5% of patients had menstrual disturbances, 20.6% of patients had dysmenorrhea, 12.7% of patients had white discharge per vagina, 35.1% of patients had abdominal pain, 12.7% of patients had mass per abdomen, 1.2% of patients had mass per vagina, 17.6% of patients had urinary problems, 13.3% of patients had infertility, 4.8% of patients had other symptoms such as vomiting, post coital bleeding, swelling of lower limbs, fever and abdominal discomfort and one patient was asymptomatic.

In a analysis carried out by Mangala G et al.[10] indicated that 49.03% of women had menstrual disturbances, 20.07% of women had dysmenorrhea, 30.5% of women had abdominal pain and 0.4% of women had urinary symptoms. In a analysis carried out by Dayal S et al.[13] indicated that majority of women (70%) showed menstrual disturbances, 19% of women had pain abdomen, 18% of women had mass per abdomen and 1% of women had other symptoms such as vomiting, fever etc. In a analysis carried out by Lahori M et al.[14] indicated that majority of cases (43.03%) showed menstrual disturbances, 17.72% of cases had dysmenorrhea, 2.53% cases had vaginal white discharge, 18.99% cases had pain abdomen, 16.46% cases had mass per vaginum and 1.27% cases had infertility. In an analysis carried out by Kulkarni et al.[15] indicated that 76% of cases had menstrual disturbances, 20% of cases had dysmenorrhea, 12% cases had leucorrhea, 33% cases had abdominal pain, 13% cases had mass per abdomen, 2% cases had mass per vaginum, 15% cases had urinary symptoms and infertility each and 2% cases were asymptomatic. Similarly in an analysis carried out by Kaushal A et al.[11] shown that 71.6% cases had menstrual disturbances, 18.3% cases had dysmenorrhea, 39.4% cases had abdominal pain, 15.6% cases had urinary symptoms and 11.9% cases had infertility.

In present study, 74.5% of patients had menstrual disturbances of which 56.9% of patients had menorrhagia, 9.7% of patients had metrorrhagia, 13% of patients had polymenorrhagia, 18.7% of patients had polymenorrhoea and 1.6% of cases had postmenstrual bleeding. In a analysis performed by Kavya K et al.[16] showed similar findings of current study with 84.3% cases had menorrhagia, 15.6% cases had metrorrhagia, 4.6% cases had polymenorrhagia, 12.5% cases had polymenorrhoea and 1.3% cases had postmenopausal bleeding.

Also, in an analysis performed by Dayal S et al.[13] shown that 71.4% of women had menorrhagia, 21.4% cases had metrorrhagia and 28.6% cases had polymenorrhagia. In an analysis performed by Lahori M et al.[14] shown that 88.2% of cases had menorrhagia and 11.8% cases had postmenopausal bleeding. 54% of cases had menorrhagia in a analysis performed by Kulkarni et al.[15]

In present study, majority of patients (47.8%) underwent TAH followed by 33.9% of patients

underwent TAH with BSO, 11.5% of patients underwent myomectomy, and 6.7% of cases underwent TAH with USO.

Table 8: Comparison of various surgeries done with previous study

Surgical procedure	Present study	Kulkarni *et al.*	Mangala G *et al.*	Kavya K *et al.*
TAH	47.8%	50%	14.7%	41%
TAH with BSO	33.9%	22%	85.3%	28%
TAH with USO	6.7%	18%	-	4%
Myomectomy	11.5%	8%	-	7.5%

In present study, majority of patients (61.8%) had intramural type of fibroid followed by 15.6% of patients had multiple fibroids, 10.3% of patients had submucous fibroids, 4.8 % of patients had cervical fibroids, and subserous fibroids each and 2.4% of women had broad ligament fibroids. In research performed by Jalandhar J et al,[9] demonstrated 20% cases had subserous type of fibroid, 60% cases had intramural type, 16% cases had adenomyosis and 4% cases had submucous type of fibroid uterus. In research performed by Mangala G et al,[10] demonstrated 16% cases had subserous uterine fibroid, 48% cases had intramural type, 3% cases had submucous and 33% cases had multiple uterine fibroids.

In research performed by Dayal S et al,[13] demonstrated majority of cases had intramural type of fibroids (60%) followed by 20% with subserous type, 8% with submucous type, 2% cases had cervical fibroids and 54% cases had multiple fibroids. 58.7% cases had intramural type, 19.3% cases had subserous, 17.4% had adenomyosis and 4.6% cases had submucous type of uterine fibroids in research performed by Kaushal A et al,[11] In research performed by Priyadarshini et al,[12] indicated that 67% cases had intramural type, 20% cases had subserous type, 11% cases had submucous and 2% cases had broad ligament fibroids. The majority of cases (56.86%) showed intramural type of fibroids in research performed by Lahori M et al,[14]

In present study, majority of patients (40%) had myxoid degeneration followed by 28.6% of patients had calcareous degeneration and one patient each had hyaline degeneration, and cystic degeneration. In research performed by Mangala G et al,[10] indicated that 76.4% of cases had no degenerations whereas 16.9% cases had hyaline degeneration, 3.5% cases had cystic degenerations, 1.6% cases had myxoid degenerations, 0.8% cases had hemorrhage and 0.4% cases each had calcareous and red degenerations.

Also, in an analysis performed by Kavya K et al,[16] indicated that 93% cases had no degenerations whereas 3% of cases had myxoid degenerations, 2% cases had hyaline degenerations and 1% cases had cystic and calcareous degenerations each. Majority of cases had hyaline degenerations in studies done by Dayal S et al,[13] (22%), Lahori M et al,[14] (6.33%), Kaushal A et al.[11] (20.2%) and Priyadarshini et al,[12] (6%) whereas majority cases had myxoid degenerations in an analysis carried out by Kulkarni K et al,[15] (3%).

In present study, majority of patients (69.7%) had proliferative endometrium followed by 9.7% of patients had secretory endometrium, 7.9% of patients had atrophic endometrium, 6.1% of cases had unknown pathological findings 4.8% of patients had simple hyperplasia of endometrium and 1.8% of patients had cystic glandular hyperplasia of endometrium.

In a analysis carried out by Jalandhara J et al,[9] indicated that 96% of cases had proliferative endometrium, 4% cases had secretory and hyperplastic endometrium each. In an analysis carried out by Mangala G et al,[10] indicated that 46.3% cases had proliferative, 22.8% cases had hyperplastic, 13.9% cases had secretory endometrium, 7.7% cases had cystic glandular hyperplasia, 5.1% cases had atrophic endometrium and 4.2% cases had proliferative adenomyomatous polyp.

Also, in an analysis carried out by Kavya K et al,[16] indicated that 66.6% cases had proliferative, 12% cases had secretory, 4.3% cases had hyperplastic and 8.7% cases had atrophic endometrium. Most cases had proliferative endometrium in studies done by Kulkarni K et al,[15] (66.3%), Kaushal A et al,[12] (70.6%).

In the present study, majority of patients (72.7%) had chronic cervicitis followed by 13.9% of patients had adenomyosis, 7.3% of patients had cystic ovaries, 4.8% of cases had pelvic inflammatory diseases and 1.2% of patients had endometritis. The majority of cases had chronic cervicitis in studies done by Kavya K et al,[16] (85%), Kulkarni K et al,[15] (85%), Kaushal A et al,[12] (77.1%) Other pelvic pathology found in these studies was cystic ovaries, adenomyosis, endometritis and pelvic inflammatory disease.

CONCLUSION

There is a higher prevalence of uterine fibroids among women of reproductive age, particularly in their 4th and 5th decade, with rare occurrence before puberty and cessation of growth after menopause. The prevalence of asymptomatic patients was minimal (0.6%), and infertility was observed in

13.3% of cases. Intramural fibroids were the most frequently encountered type, followed by combinations leading to multiple fibroids, submucosal fibroids, and subserosal fibroids. Microscopic examination revealed that proliferative and simple hyperplastic endometrium was the most common findings.

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