

A Clinico-Pathological Study of Leiomyoma of Uterus

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Abstract

Background: Leiomyoma of the uterus forms the most common type of benign tumor of the uterus and also most common pelvic tumor in women. The symptomatology continues to be variable. Surgery has for long been the main mode of therapy for the myomas. For women who wish to retain their uterus for future pregnancies or other reasons myomectomy is known. Recent trend has been towards non surgical approaches like GnRH hormone analogues or agonists, RU486 or selective uterine artery embolization, Laparoscopic cryoablation, radio frequency thermal ablation. **Methods:** A clinical study of 200 cases of fibroid uterus was made in Jawaharlal Nehru medical college and Hospital, Bhagalpur. Study duration of two years. The cases were selected by random allocation and detailed examination. **Conclusion:** Leiomyoma is the most common benign tumor of the pelvis commonly affecting women of childbearing age, most common in 3rd decade, most common in multipara. Most common presentation of leiomyoma is menstrual disturbances. Intramural is the most common variety, proliferative and hyperplastic endometrium was commonly reported.

Keywords: Leiomyoma, adenomyosis, endometrium, menorrhagia.

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I. Introduction

Leiomyoma of uterus forms the most common type of benign tumor of uterus, and also most common pelvic tumor in women. It occurs one in every four or five women of reproductive age. Unfortunately symptomatology continues to be variable. It is believed that symptomatology depends on number, size and location of tumor, although most leiomyomas are believed to be asymptomatic and progress slowly. Due to their wide spectrum of clinical symptoms like menstrual irregularities, pelvic pain, infertility they represent tremendous public health burden on women and economic costs to the society. They assume importance particularly in our country as they are an important cause for anaemia. So strategies are needed to prevent the formation, to limit the growth and to treat non surgically.

Surgery has for long been the main mode of therapy for the myomas. For women who have completed childbearing, hysterectomy forms an attractive option as it eliminates both symptoms and chances of recurrence. For women who wish to retain the uterus for future pregnancies or other reasons myomectomy is known. Recent trend has been, towards non - surgical approaches like GnRH hormone analogs/agonists, RU 486, or selective uterine artery embolization, laparoscopic cryoablation, radiofrequency thermal ablation, magnetic resonance guided ultrasound.

Objectives

Pathological correlation, with type of fibroid endometrial and ovarian changes, Associated conditions Medical and Surgical.

II. Review of Literature

Fibroids are the most common benign tumours of the female genital tract in the reproductive age group. The incidence is around 5-20%. These tumours develop in high proportion of women by 4th decade > 45% Although being most common tumor, the aetiology still remains a speculation. Genetic and hormonal factors have been implicated. Although estrogens, growth hormone and possibly human placental lactose have been implicated the role of estrogens in their growth is impressive. Studies using glucose-6 phosphate dehydrogenase isoenzyme suggest that each apparently arise from a single cell within the myometrium. number of studies has appeared in the literature examining the basic biology of these benign tumours. These studies have not only led to better understanding of how the ovarian steroids influence the

growth of leiomyomas, but also have identified a number of growth factors that appears to have an important role in the growth of these tumours. Biochemical and molecular studies have shown that leiomyomas have significantly increased levels of both estrogens and progesterone receptors when compared to normal myometrium.²⁵ Increased expression of enzyme aromatase P450 that allows cells to synthesize their own endogenous estradiol. Estradiol stimulates proliferation of uterine smooth muscle cells (SMCs). The SMCs show higher mitotic activity and decreased apoptosis. Leiomyomas have increased levels of expression of bcl2 protein that prevents apoptosis. Production of bcl₂ was significantly increased by progesterone. Many cytogenetic, molecular and epidemiologic studies have suggested strong genetic component to fibroid pathogenesis and pathobiology. Approximately 40% of fibroids have non random chromosomal abnormalities. Six main cytogenetic subgroups including translocation between chromosome 12 and 14, trisomy 12, rearrangements of short arm of chromosome 6 and long arm of chromosome 10 deletions of chromosome 3 and 7. Rien et al. found that tumours with chromosome 07 deletions are smaller than tumours with chromosome 12 rearrangements (12%) than intramural (35%) or subserosal (29%) tumours. No correlation is found between chromosomal abnormality and patient age and parity. As many as 95% of myomas are corporeal in origin, only 5% are cervical. Corporeal fibroids are interstitial, subserous/submucous depending on the site of origin and direction in which they grow. To begin with most of them are intramural, which is commonest variety and later on become either submucous (second most common variety) or subserous. Cervical fibroids arise from portio vaginalis where it is easily diagnosed or from supravaginal cervix. Operation of choice for all cases when myomectomy is contraindicated. A multiparous woman or woman over 40, with symptomatic myomas requires hysterectomy. With associated adnexal lesion, ovarian neoplasms or when uncontrollable haemorrhage occurs during myomectomy one is justified in doing a hysterectomy. Total hysterectomy is preferred against subtotal hysterectomy because of the danger of cervical stump carcinoma. (1.1%) and recurrence of fibroids in the cervical stump. Only indication for subtotal hysterectomy today is sudden deterioration of patients' general condition during the operation. Question of conserving ovaries is a matter of concern in women after the age of 40-45. Since there is a risk of developing cancer of ovary in older age group. If the ovaries are diseased, oophorectomy is necessary even in young women. Has very little place if any, in the management of the myomas. It is essentially adopted for myomas with a uterus at the most of 10-12 weeks gravid uterus size, associated prolapse with cystocele or rectocele is the next indication. But negative adnexal pathology is a must for vaginal hysterectomy. Mortality for hysterectomy is in the range of 0.2-0.3%. Post operative complications as shock, infection, low grade pyrexia due to the presence of blood in peritoneal cavity. Thrombosis and embolism, intestinal obstruction obstruction and paralytic ileus are same for both hysterectomies. The first report of laparoscopic myomectomy appeared in 1979. Since then numerous advances have been made, making the operation technically easier, laparoscopic approaches involve laparoscopic myomectomy, laparoscopic assisted myomectomy and laparoscopic myolysis and cryomyolysis.

III. Material And Methods

A clinical study of 200 cases of fibroid uterus was made in the Jawaharlal Nehru medical college and Hospital Bhagalpur, Bihar. Study duration of Two years. The cases are selected by random allocation. On admission, a detailed history, clinical examination and investigations were made. The following points were noted in the history. Age and Socio-economic status of the patient, History of presenting complaints was taken in detail; noting down the following: Menstrual disorder (detailed menstrual history is taken) Menorrhagia/ Metrorrhagia/Polymenorrhagia/Dysmenorrhagia/Post menopausal bleeding, White discharge per vagina -amount, duration, whether blood stained, Bladder and bowel symptoms: like frequency, retention, dysuria and dyspepsia, Mass per abdomen - when she noticed the mass, rate of growth, presence of pain and type of pain. Menstrual history: The following points were noted: Age of menarche, 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. Clinical Examination. Under general examination : importance was given to following points: Evidence of anaemia Presence of oedema of feet, Blood pressure and examination of cardiac and respiratory system. Size of uterus, number and situation of fibroids, condition of tubes and ovaries were noted. In cases posted for myomectomy, tubal patency was tested utilising methylene blue. The ovaries were conserved in cases of hysterectomies unless associated with pathology and in elderly patients. The removed 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 endometrial, myometrium.

IV. Results

Leiomyoma is the most common benign tumor of the pelvis. It accounts to maximum gynaecology admissions in our institute, and forms the most common indication for hysterectomy. 200 cases were

selected for the study.

Incidence of Leiomyoma in relation to age

Age (in years)	Percentage
21-30	10
31-40	55
41-50	32
50+	3

$\chi^2 = 66.3; p = 0.000$

From the table 1 it is evident that, leiomyomas are most commonly seen in the women of child bearing age, most commonly occurring in the 3rd decade. The mean age being 39 years. The youngest patient in our study was 24 years old, and the oldest was 55 years old. Though Leiomyoma is a disease of low parity, in our study we have noted it to be common in multiparous women,

Incidence of Leiomyoma In Relation To Parity

Parity	Percentage
Nulliparous	6
Para 1	15
Para 2	35
Para 3	44

Dysmenorrhea was seen in 20% of the cases. Spasmodic dysmenorrhoea occurs in intramural and submucous fibroid. Congestive dysmenorrhoea results from increased vascularity in the pelvis, due to associated pelvic pathology, White discharge per vaginam was seen in 12 % 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 33 % 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 13% of the cases. Urinary problems were noticed in 15% of the cases, which typically associated with cervical fibroid / broad ligament fibroid. Primary infertility was observed in 15% of the patients, whether infertility is due to fibroid or is an associated symptom is not clear . Associated male factor for infertility. was found only in 1 patient. None of the patients presented with bowel discomfort. Other symptoms like vomiting, fever, post coital bleeding, swelling of lower limbs, mass per vaginam & abdominal discomfort were observed in 5% of the cases. Anaemia was seen 40% of the cases, of which 40% were severely anaemic, 30% were moderately anaemic & another 30% had mild anaemia.

Distribution of menstrual symptoms

Distribution of menstrual symptoms	Percentage	χ^2	p-value
Menorrhagia	84.3	13.474	0.000
Metrorrhagia	15.6	1.263	0.000
Polymenorrhagia	4.6	64.47	0.000
Polymenorrhoea	12.5	47.37	0.000
PMB	1.3	72.05	0.000

it is noted that most of the patients presented with menstrual disturbances among which menorrhagia was comparatively more, though statistically not significant. Menstrual disturbances was most common modality of presentation (76%). amongst which menorrhagia (54%) 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 10% of the cases and polymenorrhagia in 11% only one case of postmenopausal bleeding was found in this case there was associated adenomyosis also.

V. Discussion

The incidence of leiomyoma is highest in the 3rd decade, this is similar to the incidence quoted by other investigators, like Bhashkar Reddy 1963, Usha et al 1992, indicating that Leiomyoma is a disease

seen in women of child bearing age, they are rarely found before puberty, and cease to grow after menopause. Similarly the incidence of Leiomyoma was highest among the multiparous group in most of the studies, as depicted in the table below. 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.

Incidence of Leiomyoma in relation to parity

Parity	Present series %	Bhaskar Reddy (1963)%	Shaw (1971)%	Usha et al.(1992)%
Nulliparous	6	45	40	6.84
Para 1 and 2	50		20	33.15
Para 3 and above	44	46.5	40	31.05

The analysis of symptoms shows that the menstrual complaints were predominant among all the study groups with comparable results. Other complaints like pain/ abdomen, and mass/abdomen were also found. The incidence of urinary complaints was highest in our series (15%). Primary infertility due to fibroid has been ascribed to 15-16% of the patients by different authors. But western authors like Khand and Vilos have reported an infertility rate of 1-3% associated with fibroids.

Size of fibroid uterus in studied cases

Size in weeks	Present series %	Pinto (1966) %	Chhabra et al % (1993)
<16	68	53.5	(<12wks) 76
16-20	23	44.6	(12-20 wks) 51
>20	9	21	16.2

Different authors have quoted varying incidence of the size of fibroids, this depends on the stage at which the patients present. About 60% were intramural fibroids, which is the most common variety. Similar results were obtained by other authors like Usha et al (77%). Chhabra et al (47%) and Shaw (73%). About 15% of the cases had multiple fibroids in our series. Though the incidence of cervical fibroid has been quoted as very low, 4% (Shaw), 0.6% (Tiltman), the incidence in our study is comparatively high 6%. The histological pattern of endometrium observed was proliferative type in 66.3%, these results are comparable to that quoted by other authors like, Madhu Udawat (68%), Chhabra et al (40%). This indicates the hyper estrogenic states associated with fibroids, endometrial was secretory in 12% of the cases.

Histopathological abnormality associated with pelvic pathology in myoma

Co-existent conditions	Present series %	Old statistics %	Madhu udawat % (1988)
Cystic ovaries	8	22	14
Chronic cervicitis	85	80	80
Adenomyosis	16	35	15

The association with cystic ovaries and adenomyosis also indicate hyperestrogenism. Only 2% had hyaline degenerations, the presence of hyaline degeneration depends on the size of the specimen and the number of samples from each sample studies.

VI. Conclusion

Leiomyoma (Fibromyoma) most common benign tumor of the pelvis. The trends in the age incidence have remained the same, the occurrence of fibroid is rare before 20 years of age, and they cease to grow after menopause, thereby commonly affecting women of child bearing age, most common in third decade. Though fibroid is a disease of low parity, it was most commonly seen in multipara, a significantly long period of interval following last child birth predisposed to the development of the fibroids.

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