Original Research Article

Status of Clinico-pathological Study of Uterine Leiomyomas in Hysterectomy Specimens in a Tertiary Care Teaching Hospital

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Abstract

Background: Uterus is the vital reproductive organ of female which is hormone responsive. Myometrium is the thick, smooth muscle coat of the uterus underneath the endometrium and is covered by the peritoneum derived serosa. **Subjects and Methods:** Total of sixty-seven hysterectomy specimens with or without salphingo-oophorectomy diagnosed clinical and radiologically as uterine leiomyomas were subjected to examination. Brief patient's clinical data was retrieved with respect to age, parity, clinical manifestation, sonographic findings and basis of diagnosis. **Results:** The most common indication of hysterectomy between the study period was uterine fibroid being 53.7% followed by pelvic organ prolapse constituting 28.4%. Majority of leiomyomas were diagnosed in multiparous women. Out of 67 patients with leiomyomas, 58 (86.6%) were multiparous, which includes 7(10.4%) cases of uniparous patients and only 2 was nulliparous (3.0%). **Conclusion:** Fibromyoma is the most common benign tumor of the pelvis. It commonly affects the women of child-bearing age, mostly in the third decade. The most common mode of presentation is menstrual disturbances. Intramural fibroid is the most common variety. The proliferative endometrium, followed by secretary endometrium was commonly reported.

Keywords: Endometrial Changes, Leiomyomas, Hysterectomy.

Introduction

Leiomyomas synonymously called as fibromyomas, fibroids or myomas are the commonly encountered benign uterine neoplasms in women of reproductive age group accounting for 5-20%.[1] They need hormonal milieu for their growth and maintenance as evidenced by the molecular studies that leiomyomas which exhibit more estrogen receptors than the normal myometrium.[2] The unopposed estrogenic stimulation manifests commonly as endometrial proliferative phase or hyperplasia.[3]Fibroids are usually asymptomatic, however depending on their size, location and hormonal effects, the commonest clinical manifestations are presented as menorrhagia, dysmenorrhea, pain abdomen, mass abdomen and sometimes mass effects.[4] The symptomatic leiomyomas may need urgent attention either by myomectomy in younger women who desirous for retention of childbearing function. However, in elderly women hysterectomy still remains the traditional modality of treatment.[5] Fibroids grossly, are well-circumscribed, firm, gray-white bulging masses (varying in size from barely visible nodules to large tumors that fill the pelvis) that can be easily shelled out from the myometrium. They have a whorled appearance on cut surface with cells arranged in crisscrossing fascicles on microscopy. The gross appearances are often altered by secondary or degenerative changes. Hyaline degeneration/necrosis is present in more than 60%, particularly in postmenopausal women, and cystic degeneration, myxoid change, fatty degeneration and calcification each occur in about 4%.[6] After menopause or delivery, leiomyomas can undergo atrophy with significant shrinkage and fibrosis. Red degeneration is associated with pregnancy and contraceptive use and is due to tumor vessel thrombosis.[7]

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Worldwide women suffer from gynaecologic and obstetric disorders that require hysterectomy as a treatment modality. Hysterectomy is surgical removal of uterus. a total hysterectomy applies to removal of uterus and cervix. when bilateral adnexae are also removed it is called total hysterectomy with bilateral salpingo-oophorectomy. Radical hysterectomy is more extensive procedure including removal of uterus, cervix, surrounding tissues, upper vagina and pelvic lymph nodes. Hysterectomy is one of the most commonly performed surgeries in the world.[8] In India it accounts for only 6% of major surgeries.[9] Hysterectomy rate varies from place to place depending upon patient and clinician related factors.[10] There has been a remarkable improvement in conservative management of uterine lesions; still hysterectomy remains the most preferred modality of treatment for pelvic pathologies like fibroid, adenomyosis, pelvic inflammatory disease and malignant disorder.[11] With accurate selection of patients the morbidity and mortality of hysterectomy is low.[12] Aim of the present study was to status of clinico-pathological study of uterine Leiomyomas in hysterectomy specimens in a tertiary care teaching hospital.

Subjects and methods

This present study was conducted in the Department of Pathology, MGM Medical College, Jamshedpur in collaboration with Obstetrics & Gynaecology during the period from July 2016 to July 2017. Total of sixty-seven hysterectomy specimens with or without salphingo-oophorectomy diagnosed clinical and radiologically as uterine leiomyomas were subjected to examination. Brief patient's clinical data was retrieved with respect to age, parity, clinical manifestation, sonographic findings and basis of diagnosis. On receipt of surgical specimen, they were fixed in 10% neutral buffered formalin for 24-48 hours. A detailed gross examination of uterus, cervix with or without bilateral adnexae were carried out. Well circumscribed grey to tan lesions with whorled appearance was considered as leiomyoma and details related to its location, number and secondary changes noted. A minimum of two sections from cervix, endomyometrium and one section each of fallopian tubes and ovaries were taken. And

representative additional sections from leiomyomas and other abnormal areas were also taken, processed and paraffin embedded. The blocks were sectioned and stained with hematoxylin eosin. A detailed microscopic histopathological examination pertaining to endometrial glandular and stromal changes, myometrial and leiomyomatous secondary changes, tubal and ovarian findings were noted to arrive at final diagnosis. Diagnosis of adenomyosis was considered when endometrial gland and stroma was noted within one low power field from endomyometrial junction. Specimens having more than one pathological change, all findings were cumulatively considered and included for further appropriate diagnosis. The findings were noted in pretested semi-structured proforma. Data analysis was performed with Microsoft Excel.

Observation and results

This present study was carried out in the department of pathology, MGM Medical College, Jamshedpur. Sixty-seven hysterectomy specimens with uterine leiomyomas were studied. The most common indication of hysterectomy between the study period was uterine fibroid being 53.7% followed by pelvic organ prolapse constituting 28.4% in fig.1. Age range of the patients with leiomyoma was 25-65years. Majority of the patients were between 35-45 years (49.3% cases) in fig.2.

In this study, majority of leiomyomas were diagnosed in multiparous women. Out of 67 patients with leiomyomas, 58 (86.6%) were multiparous, which includes 7(10.4%) cases of uniparous patients and only 2 was nulliparous (3.0%) in table-1.

Menorrhagia was the commonest symptom constituting 26(38.8%) cases, followed by pain in abdomen in 15(22.4%) cases and dysmenorrhea in 13(19.4%) cases in fig.-3. Clinical diagnosis by the concerned physician was fibroid uterus in 36 (53.7%) cases, utero-vaginal prolapse in 19 (28.4%) cases, and pelvic inflammatory disease in 08 (11.9%) cases.

Most common site of leiomyomas was intramural 45(67.2%) followed by subserosal leiomyomas 13(19.4%), submucosal leiomyomas constituted 07(10.4%) cases while broad ligament leiomyomas constituted 02(3.0%)cases. In the present study, out of 67 cases of leiomyomas, 41(61.2%) were single and 26(38.8%) were multiple. (Fig.4).

In our study proliferative endometrial pattern is seen in most of the cases constituting 44(65.7%) followed by secretory endometrium contributing 11(16.4%), the least is seen in cystic glandular hyperplasia in only 02(3.0%) cases. Types of leiomyomas: in our study, we observed 44 cases of typical leiomyomas (65.7%), followed by leiomyoma variants in 12 cases (17.9%) and degenerative changes in 11 cases (16.4 %). Degenerative changes were observed in 11 leiomyomas (16.4%). Among these, 4leiomyomas (6.0%) showed hyaline change which constituted the most common degenerative change observed in this study, 3 leiomyomas (4.5 %) showed myxoid change, 3 cases (4.5%) showed calcification, 1 case (1.4%) showed cystic. No cases demonstrated carneous (red) degeneration in our study.

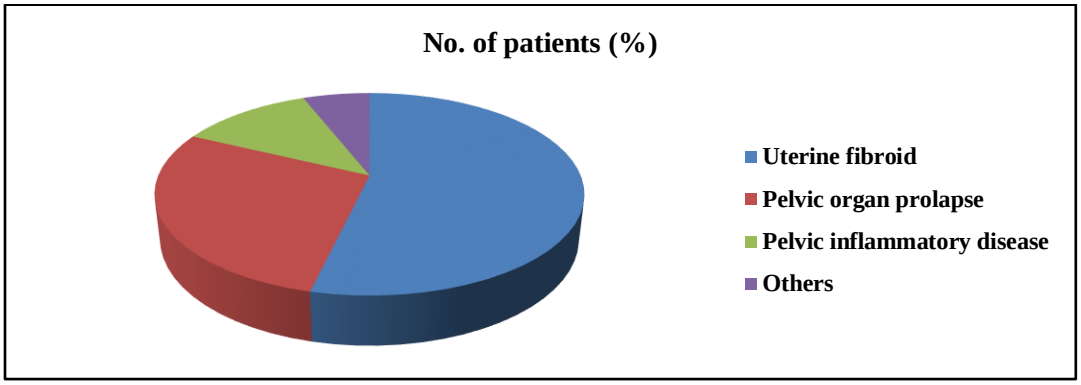

Fig 1: Shows the Common indication of hysterectomy.

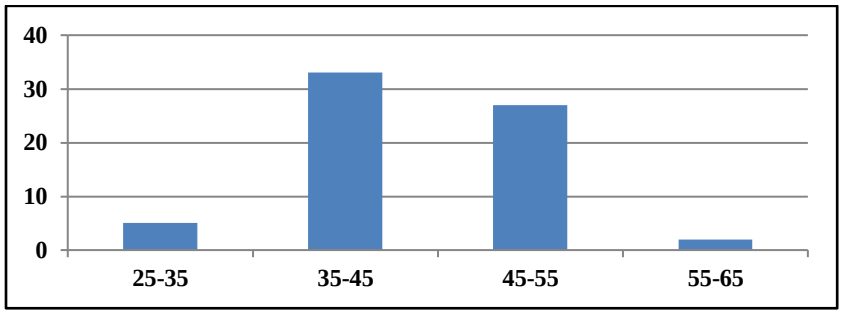

Fig 2: Shows the Age wise distribution of the patients with leiomyoma.

Table 1: Shows the Parity of the patients with leiomyoma.

Parity of patients with leiomyoma	No. of patients (%)
Nulliparous	02 (3.0%)
Primipara	07 (10.4%)
Multipara	58 (86.6%)

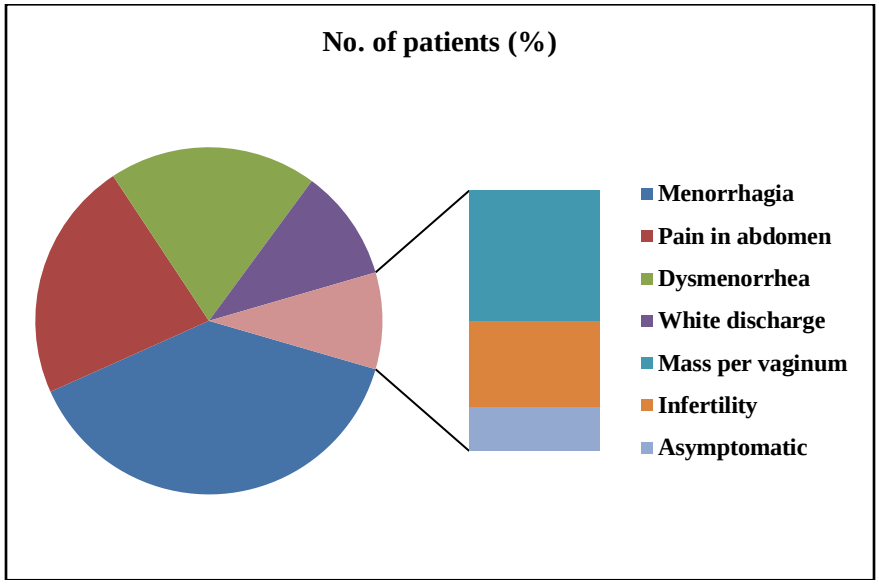

Fig 3: Shows the Chief complaints of the patients with uterine leiomyoma.

Table 2: Shows the Location and number of leiomyoma's in uterus.

Location of leiomyoma's in uterus	No. of patients (%)
Intramural	45 (67.2%)
Subserous	13 (19.4%)
Submucous	07 (10.4%)
Broad ligament	02 (3.0%)

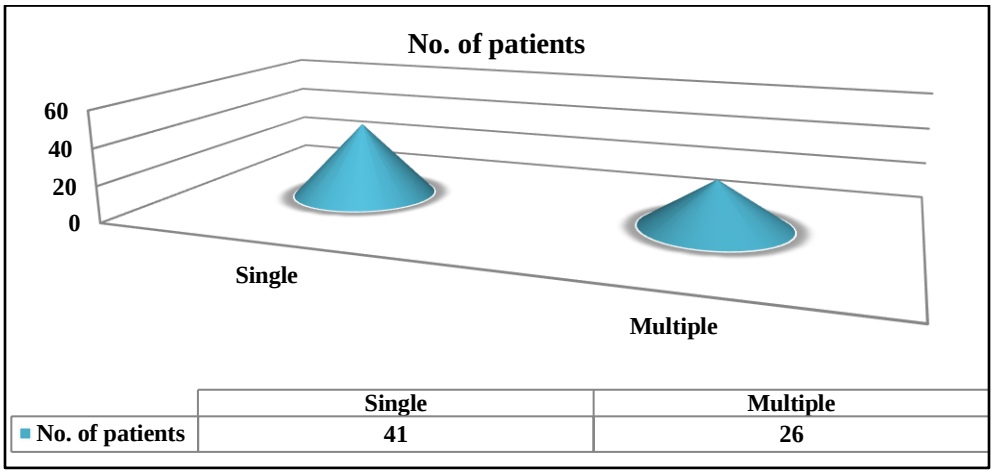

Fig 4: Shows the Number of leiomyoma's in the uterus

Table 3: Shows the Various pathological changes seen in uterine leiomyomas.

Endometrial pattern	No. of patients (%)
Proliferative	44 (65.7%)
Secretory	11 (16.4%)
Hyperplasia	06 (9.0%)
Atrophic	04 (6.0%)
Cystic glandular hyperplasia	02 (3.0%)

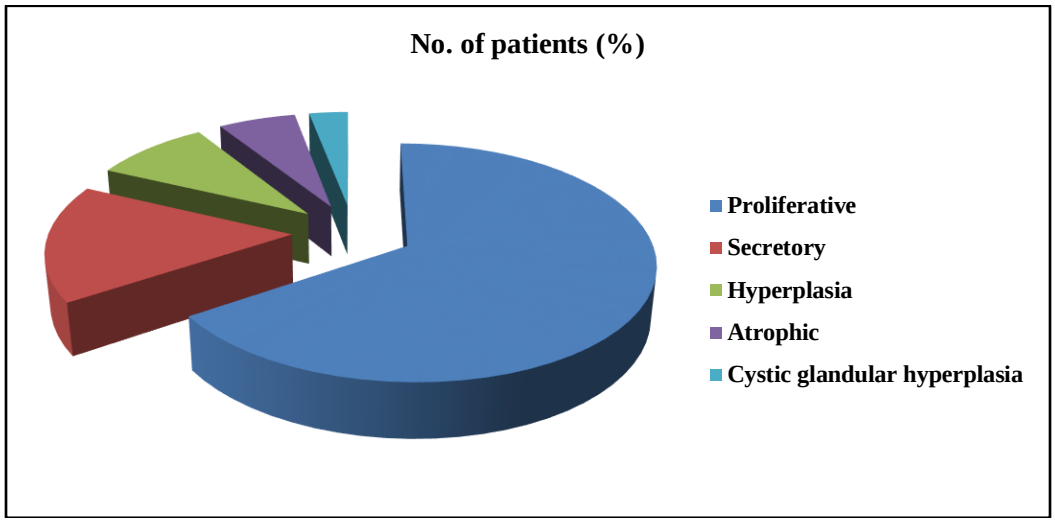

Fig 5: Shows the Various pathological changes seen in uterine leiomyomas.

Discussion

The major gynaecological surgery done throughout the world is hysterectomy. Charles Clay was the first to perform subtotal and total hysterectomy in Manchester, England in 1843 and 1929 respectively .[11]Hysterectomy is a successful procedure done in terms of symptom relief, patient satisfaction and definitive cure in many disease.Benign conditions like leiomyoma, dysfunction uterine bleeding, adenomyosis, pelvis inflammatory disease, endometriosis, pelvic organ prolapse which account for major hysterectomies and rest for malignancy [13,14] Of these benign lesions, leiomyoma followed by adenomyosis are the commonest indication for hysterectomy.[15] The ages of the patients ranged from 25 to 65 years. Highest numbers of patients included in this study were between 35-45 years 33(49.3%). These findings were similar to studies by Ashraf T et al[15], and Begum S et al[16] whereas in contrast Hafiz R et al[17] observed that affected females were a decade lesser 20-40 years of age possibly since they included only menorrhagic patients with fibroid. Multiparous women (94.9%) were found to have leiomyomas more frequently then nulliparous (1.3%) analogous to study by Begum S et al.[16], in contrast to a study by Derek LJ et al.[18] who observed fibroids are more common in nulliparous or infertile patients since he included more of asymptomatic infertile patients with fibroids. In this study, menorrhagia was the commonest presenting symptom seen in 26(38.8%) cases, followed by pain in abdomen in 15(22.4%) cases and dysmenorrhea in 13(19.4%) cases. Menorrhagia was also the presenting complaint in studies by Sarfraz (68%), Karthikeyan (62.5%), Rather (35.43%), Gowri (49.03%) and Manjula K (35.4%) [19-23] In the present study, out of 67 cases of leiomyomas, 41(61.2%) were single and 26(38.8%) were multiple. In a study by Sarfraz et al (2010) multiple leiomyomas were seen in 60.87% cases.[19] Abraham and Saldanha observed solitary leiomyoma in 42.5% cases and multiple leiomyomas in 57.5%. The most common site of leiomyomas in our study was intramural 45(67.2%) followed by subserosal leiomyomas 13(19.4%), submucosal leiomyomas constituted 07(10.4%) cases while broad ligament leiomyomas constituted 02(3.0%) cases. Jung et al observed intramural fibroids in 55.7% cases, subserous fibroids in 16.3% cases, 15.6%, and submucosal fibroids in 12.4% cases respectively.[24] Intramural leiomyomas were also the commonest types in studies by Gowri et al (48%) and Rosario et al (52%).[25] Abraham and Saldanha observed intramural fibroids in 61.5% cases, subserosal leiomyomas in 9% cases and submucosal leiomyomas in 5% cases.[26] In the present study proliferative phase accounted for 65.7% were the commonest endometrial changes seen in association with uterine leiomyomas possibly due to hyper-estrogenic status in accordance with the study by, Purandare et al S, 1993), Sanyal et al[27], Chethana M et al[28]. In the present study atrophic endometrium were 6.0% similar to studies by Denligdish et al[29], Chethana M et al[28] and described these endometrial changes of normal, hyperplasia and atrophy may be possible due to irregular secretion of estrogens and mechanical effects of fibroid on endometrium. In the present study, degenerative changes were observed in 11 leiomyomas (16.4%). Among these, 6.0% showed hyaline change which constituted the most common degenerative change observed in this study, 4.5% showed myxoid change,4.5% showed calcification, and none of them have demonstrated red (carneous) degeneration. Jung at al found secondary (degenerative) changes in 9.2% cases and the most common change was hyaline degeneration (5.7%).[24] Gowri et al reported secondary changes in 22.6% cases with hyalinization (16.9%) being the commonest secondary degenerative changes followed cystic (3.5%) and myxoid (1.6%) change.[22] Abraham and Saldanha observed secondary changes 22.2% cases; among these 49% showed hyaline change, 4.9% showed myxoid change, 4.9% showed calcification, 3.35 showed red degeneration and 4.9% showed hydropic changes. [26]

Conclusion

In conclusion, fibromyoma is the most common benign tumor of the pelvis. It commonly affects the women of child-bearing age, mostly in the third decade. The most common mode of presentation is menstrual disturbances. Intramural fibroid is the most common variety. The proliferative endometrium, followed by secretary endometrium was commonly reported. The presence of proliferative endometrium, adenomyosis, and cystic ovaries all are indicative of hyperestrogenic state associated with development of fibroids. Therefore, histopathology is mandatory for confirmed diagnosis and ensuring optimal management.

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