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RESEARCH ARTICLE

CLINICOPATHOLOGICAL STUDY OF UTERINE LEIOMYOMAS IN HYSTERECTOMY SPECIMENS; A RETROSEPTIVE STUDY.

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Abstract

Introduction: Leiomyomas are the commonly encountered benign uterine neoplasms in women of reproductive age group accounting for 5-20%. We reported 100 cases of women who underwent who hysterectomy for uterine leiomyomas which was diagnosed by clinically and sonologically.

Methods: This is a retrospective study of 100 cases who underwent hysterectomy for uterine leiomyomas which was diagnosed by clinically and sonologically between March 2016 to March 2017. Women who underwent hysterectomy with an indication other than for uterine leiomyomas were excluded in the study. Data including age, parity, symptoms and clinical indication for hysterectomy were collected. Hysterectomy specimens clinically diagnosed as uterine leiomyomas were subjected to histopathological examination. **Results:** Age range of the patients with leiomyoma was 24-50 years. Majority of the patients were between 41-50 years (51% cases). Menorrhagia was the commonest symptom constituting 38% cases and fibroid uterus was the most common clinical diagnosis provided (54%). Most common location of leiomyoma's was intramural (66.66%) followed by subserosal (20.37%) 59% leiomyoma's were single and 41% were multiple. Degenerative changes were observed in 16.46% cases, amongst which hyaline change was the most common (6.33%). Histopathological patterns showed proliferative endometrium in 66% and cystic granular hyperplasia in least of 2% Cystic ovaries were seen in 11% of the patients, adenomyosis in 19%.

Conclusion: Fibromyoma is the most common benign tumor commonly affects the women of child-bearing age, mostly in the third decade. The most common presentation is menstrual disturbances. Intramural fibroid is the most common variety. The proliferative endometrium, followed by secretory endometrium was commonly reported.

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Introduction:-

Leiomyomas also known as fibromyomas, fibroids or myomas are the commonly encountered benign uterine neoplasms in women of reproductive age group. They accounts for 5-20% of all women in reproductive age group (Crum C P, 2004). 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 (Ackerman,2011). The unopposed estrogenic stimulation manifests commonly as endometrial proliferative phase or hyperplasia (Witherspoon T J, 1993). Fibroids are usually asymptomatic, however depending on their size, location and hormonal effects, the commonest clinical manifestations are presented as menorrhagia, dysmenorrhoea, pain abdomen, mass abdomen and sometimes mass effects (Begum S, 2004). 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 (Frances Jr H,1995).

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%(Samaila Modupeola OA,2009). 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 (Zaloudek CJ, 2011).

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 (Graves, E j, 1990). In India it accounts for only 6% of major surgeries (Singh A, 2008). Hysterectomy rate varies from place to place depending upon patient and clinician related factors (Rather GR, 2013). 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 (Nousheen F, 2004) With accurate selection of patients the morbidity and mortality of hysterectomy is low (Abdulla LS, 2006). Prevalence of uterine pathology varies from place to place.

Objectives:-

1. To find out the most common indication for hysterectomy among rural patients.
2. To analyse various features of clinical and histopathological changes in hysterectomy specimens with uterine leiomyomas

Methods:-

The present study was conducted in the Dept. of Obstetrics & Gynaecology and Department of pathology, Sri Devraj Urs Medical College, Kolar, Karnataka, India over a period of one year from March 2016 to March 2017. A total of 100 hysterectomy specimens with or without salphingo-oophorectomy diagnosed clinical and radiologically as uterine leiomyomas were subjected to examination. Patients clinical data was retrieved with respect to age, parity, clinical manifestation, sonographic findings and basis of diagnosis. Women who underwent hysterectomy with an indication other than for uterine leiomyomas were excluded in the study. 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 (H&E). Data including age, parity, symptoms and clinical indication for hysterectomy were collected. Hysterectomy specimens clinically diagnosed as uterine leiomyomas were subjected to histopathological examination and relevant clinical data were analysed.

Results:-

The most common indication of hysterectomy between the study period was uterine fibroid being 56% followed by pelvic organ prolapse constituting 26%.

Table no. 1:- Common indication of hysterectomy.

SL.NO.	Common indication of hysterectomy	Percentage
1.	Uterine fibroid	54%
2.	Pelvic organ prolapse	26%
3.	Pelvic inflammatory disease	11%
4.	Others	9%

Age:

Table 2: Age wise distribution of the patients with leiomyoma.

SL.NO.	AGE RANGES (IN YEARS)	NO. OF CASES (N=100)	PERCENTAGES (%)
1.	21 TO 30	4	4%
2.	31 TO 40	45	45%
3.	41 TO 50	51	51%
4.	> 50	—	—

Age range of the patients with leiomyoma was 24-50years. Majority of the patients were between 41-50 years (51% cases)

Parity:

Table.no. 3: Parity of the patients with leiomyoma.

SL.NO	PARITY OF PATIENTS WITH LEIOMYOMA	NO. OF CASES (N=100)	PERCENTAGES (%)
1.	Nulliparous	3	3%
2.	Primipara	10	10%
3.	Multipara	87	87%

In this study, majority of leiomyomas were diagnosed in multiparous women. Out of 100 patients with leiomyomas, 87 (87%) were parous, which includes 14 cases of uniparous patients and only 3 was nulliparous (3%).

Clinical presentation:-

Menorrhagia was the commonest symptom constituting 38% cases, followed by pain in abdomen in 22% cases and dysmenorrhea in 20 cases (Table 4). Clinical diagnosis by the concerned physician was fibroid uterus in 54% cases, utero-vaginal prolapse in 26% cases, and pelvic inflammatory disease in 11% cases.

Table 4:- Chief complaints of the patients with uterine leiomyoma.

SL.NO	CHIEF COMPLAINT	NO. OF CASES (N=100)	PERCENTAGES (%)
1.	Menorrhagia	38	38%
2.	Pain in abdomen	22	22%
3.	Dysmenorrhea	20	20%
4.	White discharge	10	10%
5.	Mass per vaginum	4	4%
6.	Infertility	4	4%
7.	Asymptomatic	2	2%

Table 5:- Location and number of leiomyoma's in uterus.

Sl.no.	Location of leiomyoma's in uterus	No. Of cases (n=100)	Percentages (%)
1.	INTRAMURAL	67	67%
2.	SUBSEROUS	20	20%
3.	SUBMUCOUS	11	11%
4.	BROAD LIGAMENT	2	2%

Most common site of leiomyomas was intramural (67%) followed by subserosal leiomyomas (20%), submucosal leiomyomas constituted 11% cases while broad ligament leiomyomas constituted 2% cases.

In the present study, out of 100 cases of leiomyomas, 59(59%) were single and 41(41%) were multiple (Table no. 6).

Table.no.6:- Number of leiomyoma's in the uterus.

SL.NO	NO. OF LEIOMYOMAS'S IN UTERUS	NO. OF CASES (N=100)	PERCENTAGES (%)
1.	SINGLE	59	59%
2.	MULTIPLE	41	41%

Table 7:- Various pathological changes seen in uterine leiomyomas.

SL.NO.	ENDOMETRIAL PATTERN	NO. OF CASES (N=100)	PERCENTAGES (%)
1.	Proliferative	66	66%
2.	Secretory	16	16%
3.	Hyperplasia	9	9%
4.	Atrophic	7	7%
5.	Cystic glandular hyperplasia	2	2%

In our study proliferative endometrial pattern is seen in most of the cases constituting 66% followed by secretory endometrium contributing 16%, the least is seen in cystic glandular hyperplasia in only 2 cases.

Types of leiomyomas: in our study, we observed 66 cases of typical leiomyomas (66%), followed by leiomyoma variants in 18 cases (18%) and degenerative changes in 16 cases (16 %).

Degenerative changes were observed in 16 leiomyomas (16%). Among these, 6 leiomyomas (6%) showed hyaline change which constituted the most common degenerative change observed in this study, 4 leiomyomas (4 %) showed myxoid change, 4 cases (4%) showed calcification, 2 cases (2%) showed cystic. No cases demonstrated carneous (red) degeneration in our study.

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 (Nausheen F, 2004). 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 {(Gupta S,2006), (Rani S. V. R, 2013)} Of these benign lesions, leiomyoma followed by adenomyosis are the commonest indication for hysterectomy (Ashraf T, 1997).

The ages of the patients ranged from 24 to 50 years. Highest numbers of patients included in this study were between 41-50 years (51%). These findings were similar to that observed by Gupta et al (51.40%), Rather et al (47.27%), Vaidya et al (45.63%) and Rizvi et al (44.56%) {(Gupta G , 2009), (Rather GM, 2013), (Vaidya S, 2015), (Rizvi G, 2013)} In other studies, 31-40 years age group was mainly affected like in Karthikeyan et al (46.15%), Gowri et al (41.3%) { (Karthikeyan TM,2015), (Gowri M,2013)}

In this study, menorrhagia was the commonest presenting symptom seen in 38% cases, followed by dysmenorrhea in 20 % 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%) {(Sarfraz. R, 2010) (Karthikeyan TM,2015) (Rather GM, 2013) (Gowri M,2013), (Manjula. K. 2011)}.

In the present study, out of 100 cases of leiomyomas,59 (59%) were single and 41(41%) were multiple. In a study by Sarfraz et al (2010) multiple leiomyomas were seen in 60.87% cases. (Sarfraz.R, 2010). Abraham and Saldanha 20 observed solitary leiomyoma in 42.5% cases and multiple leiomyomas in 57.5%.

The most common site of leiomyomas in our study was intramural (67%) followed by subserosal leiomyomas (20%), sub mucosal leiomyomas (11%) and broad ligament leiomyomas (2%). 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. (Jung. Jk, 1998). Intramural leiomyomas were also the commonest types in studies by Gowri et al (48%) and Rosario et al (52%) (Rosario YP, 1968). Abraham and Saldanha observed intramural fibroids in 61.5% cases, subserosal leiomyomas in 9% cases and submucosal leiomyomas in 5% cases (Abraham J,2013).

In the present study, degenerative changes were observed in 16 leiomyomas (16%). Among these, 6% showed hyaline change which constituted the most common degenerative change observed in this study, 4% showed myxoid change, 4% 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%) (Jung. Jk, 1998).

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 (Gowri M,2013).

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 (Abraham J,2013).

In the present study proliferative phase accounted for 66% 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 alS, 1993), Sanyal et al (Sanyal. MK, 1981) ,Chethana M et al (Chethana, M, 2013). In the present study atrophic endometrium were 7% similar to studies by Denligdish et al (Denligdish.L, 1970), Chethana M et al and (Chethana.M, 2013) 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.

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 secretory endometrium was commonly reported. The presence of proliferative endometrium, adenomyosis, and cystic ovaries all are indicative of hyperestrogenic state associated with development of fibroids.

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