

ORIGINAL RESEARCH

A PROSPECTIVE STUDY OF ENDOMETRIUM IN LEIOMYOMA UTERUS

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ABSTRACT

Background: Leiomyoma (fibroid) is the commonest neoplasm accounting for 75% of benign tumours affecting women in reproductive age group. They are dependent upon the steroid hormones for their growth and maintenance. As the endometrium and leiomyoma (fibroid), are both steroid hormone dependent, we studied the corresponding histological changes in endometrium in cases of uterine leiomyoma.

Materials and Methods: The study included 100 hysterectomy cases where leiomyoma/leiomyomas were present. Brief clinical history regarding age, clinical presentation, parity was obtained. The specimens were fixed in 10% formalin; tissue bits from representative areas were taken and stained with Haematoxylin and Eosin.

Results: The commonest age group was 4th decade (54%). The commonest clinical presentation or chief complaint in current study is menorrhagia (46% cases). Majority of the women in the study were multiparous (89%) and the most common type of leiomyoma encountered in the study, based on location, was intramural type (62% cases). Proliferative pattern of endometrium (62%) is the most common pattern associated with leiomyomatous uteri in this study.

Conclusion: Uterine fibroids (leiomyomas) are the most common benign gynecological tumors in women of reproductive age globally. Endometrium and leiomyoma (fibroid), are both dependent on steroid hormones for the growth and maintenance. Histopathological diagnosis is the mainstay to identify the uterine leiomyoma, though some amount of clue may be obtained from the endometrial curettings.

Keywords: Hysterectomy, leiomyoma, endometrium, steroid hormones.

INTRODUCTION

The uterus has two major components: the myometrium and the endometrium. The myometrium is composed of tightly interwoven bundles of smooth muscle and the endometrium, is composed of glands embedded in a cellular stroma. The endometrium undergoes dynamic physiologic and morphologic changes during the menstrual cycle in response to sex steroid hormones.^[1] Within the diverse benign lesions of Myometrium, leiomyoma (fibroid) is the commonest neoplasm accounting for 75% of benign tumours affecting women in reproductive age group.^[2,3] They are dependent upon the steroid hormones for their growth and maintenance and are the major cause for hysterectomy all over the globe. They are mostly asymptomatic but may present with menstrual disturbances, which are mostly due to the hyper-oestrogenic status associated with these tumours.^[4] As the endometrium and leiomyoma (fibroid), are both steroid hormone dependent, we studied the corresponding histological changes in endometrium in cases of uterine leiomyoma.

MATERIALS & METHODS

The current study, a prospective study, was conducted in a tertiary care hospital in a rural area, near Vijayawada Andhrapradesh. The study included 100 hysterectomy cases where leiomyoma/leiomyomas were present. All hysterectomy specimens with leiomyomas were included and myomectomy specimens, endometrial biopsies, endometrial curettages were excluded from the study.

Brief clinical history regarding age, clinical presentation and parity was obtained. The hysterectomy specimens received were cut into two halves and were fixed in 10% formalin for 12-24 hours. Gross examination was performed with respect to size of uterus, location of fibroids and endometrial thickness. Tissue bits from representative areas of the fibroids and a minimum of two tissue bits from either side of the endometrium were taken. Sections were stained with Haematoxylin and Eosin (H&E).

RESULTS

In this study, the age of the patients ranged from 21-80 years. The commonest age group, where leiomyoma/leiomyomas were seen, is 4th decade accounting for 54% of cases and 31-50 years age group together constituted majority of cases, i.e 81%. The commonest clinical presentation or chief complaint in our study is menorrhagia which constitutes 46% cases, followed by dysmenorrhoea, 24%. Majority of the women in the study were multiparous, accounting for 89% compared to primipara and nullipara. (8 and 3 cases respectively). It was observed that the most common type of leiomyoma encountered in the study, based on location, was intramural type 62%, followed by multiple fibroids observed in 15%. Submucosal and suberosal fibroids are seen in 12 and 11 cases respectively. Endometrium showed proliferative pattern in 62 cases (62%), followed by secretory pattern (22%) in 22 cases. Atrophic endometrium (9%), disordered proliferative pattern (5%) and endometrial hyperplasia (2%) were the other changes observed in endometrium.

Table - 1: Age distribution of leiomyoma

Age group	Frequency	Percentage (%)
21-30	2	2
31-40	54	54
41-50	27	27
51-60	12	12
61-80	5	5
Total	100	100%

Table-2: Common clinical presentation in uterine leiomyoma

Chief complaints	Number of cases	Percentage (%)
Menorrhagia	46	46
Dysmenorrhea	24	24
Asymptomatic	15	15
Pain abdomen	10	10
Post-menopausal bleeding	5	5
Total	100	100

Table-3: Histopathological pattern of endometrium in uterine leiomyoma

Endometrial pattern	Number of cases	Percentage (%)
Proliferative endometrium	62	62
Secretory endometrium	22	22
Atrophic endometrium	9	9
Disordered proliferative endometrium	5	5
Endometrial hyperplasia	2	2
Total	100	100

Table -4: Leiomyoma based on location in uterus

Location	Number	Percentage (%)
Submucous	12	12
Intramural	62	62
Subserous	11	11
Multiple	15	15

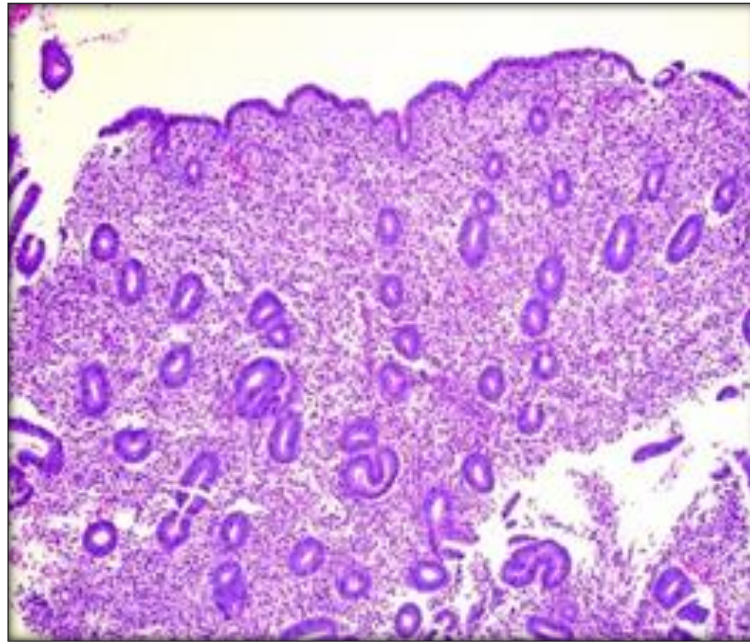


Figure 1: Proliferative endometrium (H&E, 10X)



Figure 2: Disordered proliferative endometrium (H&E, 40X)

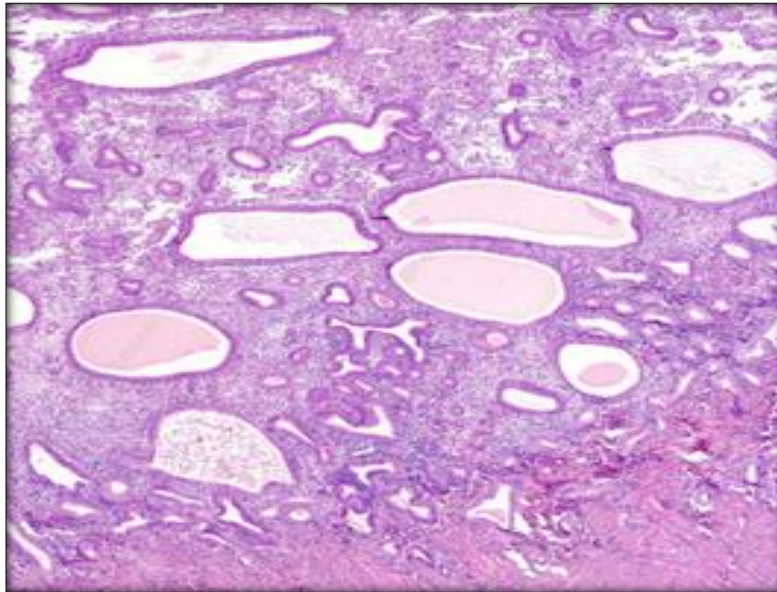


Figure 3: Simple hyperplasia /Non atypical endometrial hyperplasia (H&E, 10X)

DISCUSSION

Uterine fibroids (leiomyomas) are the most common benign gynecological tumors in women of reproductive age globally. They cause variety of symptoms such as heavy menstrual bleeding, leading to severe anemia, pelvic pain/pressure, infertility, and other debilitating morbidities. Leiomyomas are believed to be monoclonal tumors arising from the myometrium, and recent studies have demonstrated that fibroids actively influence the endometrium. In this study, leiomyomas were found to have higher incidence in reproductive and perimenopausal age group most common being 4th decade accounting for 54% of cases and 31-50 years age groups together constituted majority of cases, i.e 81% which is in concordance with study by Kulkarni, Maitri Raghavendra et al,^[5] and Usha et al,^[6] where highest incidence is seen in 3rd decade.

Studies have shown that the risk of uterine leiomyomata is lower in women who have ever given birth compared to nulliparous women, and the risk tends to decrease with increasing parity.^[7] This is due to the reduced exposure to unopposed estrogens during pregnancy in contrast to nulliparous women. But majority of leiomyomas were seen in multiparous women in this study, similar to studies done by Kulkarni, Maitri Raghavendra et al.^[5] Rosario Pinto,^[8] Chhabra et al.^[9] Studies have shown that fibroid growth is regulated both by estrogen and progesterone hormones. Further, progesterone is known as the hormone of pregnancy. This provides a probable explanation for the increased incidence of fibroids among the multiparous women, who acquire increased levels of estrogen, progesterone and their receptors, ER and PR. Another explanation could be the early age at marriage and longer gap between the last child birth and development of symptoms which may be the cause for such high incidence in multiparous women. Fibroids can present with a variety of complaints such as excessive uterine bleeding/menorrhagia, dysmenorrhea, mass per abdomen, infertility based on its location and post-menopausal bleeding in elderly women. The commonest clinical presentation or chief complaint in the present study is menorrhagia which constitutes 46% cases, followed by dysmenorrhoea, 24% cases which is in

concordance with studies done by Khan, et al., Mannem Chethana et al., Karthikeyan et al.^[10] Dysregulation of the vascularity along with a number of growth factors in these uteri is said to be responsible for this symptom.^[11] In the present study, majority of leiomyomas were intramural type accounting for 62%, followed by multiple fibroids observed in 15%. Submucosal and suberosal fibroids are seen in 12 and 11 cases respectively. Studies done by Rosario Pinto., Khan, et al. and Chethana also reported intramural leiomyomas as the commonest type of leiomyomas observed.

In the present study of 100 cases of uterine leiomyoma, proliferative endometrium was the most common endometrial pattern associated with leiomyoma which is seen in 62% cases followed by secretory pattern and atrophic pattern observed in 22% and 9% cases respectively. Gowri et al described proliferative endometrium in 46.30% cases followed by secretory endometrium in 13.90% cases followed by atrophic endometrium in 7.70% cases. Study done by Sushma et al,^[12] also showed proliferative endometrium to be the most common endometrial pattern in 63.10% cases, secretory endometrium in 26.2% cases and atrophic endometrium in 7.73% cases.

CONCLUSION

This study was conducted to study the clinico-pathological profile of patients with uterine leiomyoma and to characterize the gross and histopathological features of endometrium in these uteri. Uterine leiomyoma was commonly seen in reproductive age group and perimenopausal females. Majority of the patients presented with menorrhagia, dysmenorrhea and pain abdomen. Most common type of fibroid was intramural type and commonest endometrial pattern associated with leiomyoma was proliferative pattern suggesting the role of hyper-estrogenic state. Histopathological diagnosis is the mainstay to identify the uterine leiomyoma, though some amount of clue may be obtained from the endometrial curettings.

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