Histopathological Study Of Myometrial Lesions In Hysterectomy Specimens.

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ABSTRACT
INTRODUCTION
Leiomyomas of the uterus are extremely common neoplasms. The overall incidence ranges between 4% and 11% and rises to nearly 40% in women's over the age of 50 years. Among smooth muscle lesions uterine leiomyomas (uterine fibroid) are most common followed by adenomyosis of myometrium
METHODOLOGY
This study consists of 517 hysterectomies cases collected over a period of 2 years from June 2008 to June 2010 (2 years prospective study). The material was obtained from the patients admitted to district hospital in a tertiary care teaching hospital. Detailed micro-anatomic features were studied and recorded
RESULTS AND OBSERVATION
During the two-year study period, out of 517 hysterectomy cases, the study includes histopathological proved 276 cases with myometrial lesions. Youngest was 20 years old and oldest was 65 years old. Menorrhagia was the commonest presenting symptom seen in 99 patients followed by dysmenorrhea in 49 patients, white discharge per vagina 33 patients and mass per vagina in 53patients . Histologically non-neoplastic lesions in the form of adenomyosis was seen in 52 uteri (18.84%). Pure leiomyoma was diagnosed in 156 specimens (56.18%), whereas other 67 leiomyomas were associated with adenomyosis (24.27%).
CONCLUSION
Histopathological study of myometrial lesions includes adenomyosis and variety of leiomyomas classified based on site, size and microscopic variants. Although benign and malignant lesions of are distinct and well studied, there are some benign lesions that often mimic cancer-causing diagnostic dilemma.

KEYWORDS- Leiomyoma, myometrium, adenomyosis, hysterectomy

INTRODUCTION

The reproductive life of a female leads to periodic changes in uterus throughout one's life. This results in benign and few malignant conditions. The most common benign condition affecting this organ arises from smooth muscle cells of myometrium. Most of these neoplasms will follow an entirely benign course, a small but significant minority will behave aggressively leading to metastatic disease or recurrence[1].

Myometrial lesions occur as a result of various changes in reproductive life of a woman. An endocrine imbalances, pregnancy, and neoplastic proliferation. Together the lesions that affect cervix, the corpus of the uterus and the endometrium account for most patient visits to gynecologic practices.

Leiomyomas of the uterus are extremely common neoplasms. The overall incidence ranges between 4% and 11% and rises to nearly 40% in women's over the age of 50 years. Among smooth muscle lesions uterine leiomyomas (uterine fibroid) are most common followed by adenomyosis of myometrium.

Histopathology assumes a paramount importance in the documentation of myometrial lesions, tumor and their grading accurately. The present study will be an effort to explore elucidate and document the lesions affecting the uterine musculature (myometrial lesions).

Present study analyzes the distribution of various types of myometrial lesion in the hysterectomy specimens received in our institution. And the study pattern of their occurrence in relation to age, parity, mode of presentation and histo-pathological features.

METHODOLOGY

This study consists of 517 hysterectomies cases collected over a period of 2 years from June 2008 to June 2010 (2 years prospective study). The material was obtained from the patients admitted to district hospital in a tertiary care teaching hospital.

Brief essential clinical history and findings were recorded from the patient's case papers. Following the receipt of surgical specimens in 10% formalin at the department of pathology, a detailed gross examination including size, shape, consistency, and external surface were recorded. Additional cuts were made depending on the size of the specimen and cut section morphology were recorded.

The tissue bits from representative area were taken for histopathological examination and paraffin blocks were prepared. Multiple sections of 5 microns thickness were cut and routinely stained with hematoxylin and eosin stain. Detailed micro-anatomic features were studied and recorded.

RESULTS

During the two-year study period, 2226 specimens were received for histopathological examination in the department, 517 were hysterectomy specimens which constituted 23.22% of the total surgical specimens. Out of 517 cases, the study includes histopathological proved 276 cases with myometrial lesions.

Patients who underwent hysterectomy with myometrial lesions were between 2nd and 8th decade of life. Youngest was 20 years old and oldest was 65 years old. Majority of the patients were between 31-40 years accounting for 46.00%, followed by 24.63% cases between 41-50 years age, 20.28% cases were between 21-30 years, 9.05% cases between 51-60 years, 0.36% of cases between 61-70 years.

The commonest clinical diagnosis in the present study was prolapse in 86 patients (30.79%) followed by dysfunctional uterine bleeding in 76 patients (27.53%). Fibroids in 60 patients (21.73%), PID in 53 patients (19.20%) and only 1 case each of adenomyosis.

In this study, menorrhagia was the commonest presenting symptom seen in 99 patients (36.00%), followed by dysmenorrhea in 49 patients (18.00%), in white discharge per vagina 33 patients (12.00%) and mass per vagina in 53patients (19.00%) other main clinical features observed were pain abdomen and mass per abdomen, etc.

Table 1 Clinical Features

Clinical features	No. of patients	Percentage
Menorrhagia	99	36.00
Dysmenorrhea	49	18.00
White discharge per vagina (WDPV)	33	12.00
Mass per vagina	53	19.00
Mass per abdomen	18	6.00
Pain in abdomen	18	6.00
Polymenorrhagia	3	1.00
Postmenopausal bleeding	3	1.00
Total	276	100.00

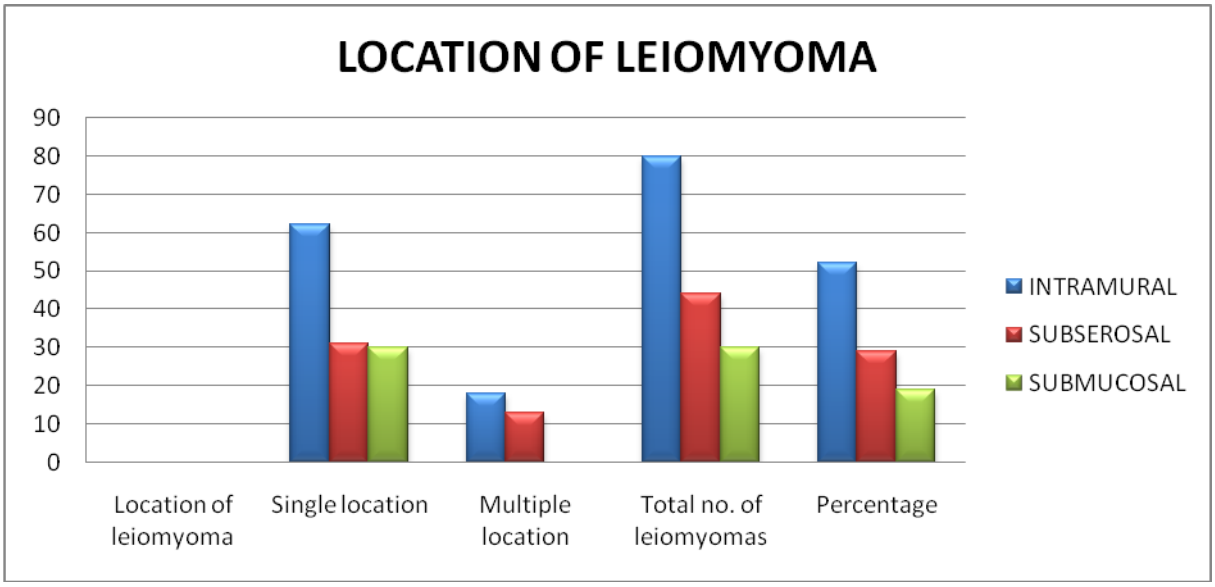
Of 276 patients studied, 274 patients (99.27%) were parous and only 2 patients (0.72%) were nullipara. Parity of the patients ranged from 1-8. Of the 276 myometrial specimens studied, 170 (60.00%) were normal size, 65(23.00%) were slightly enlarged, 19 (7.00%) were bulky and 22 (8.00%) were atrophic.

Among 276 uteri studied, the grey white whorled appearance was the commonest finding seen in 118(42.84%), well defined coarse trabecular appearance was seen in 84 (30.43%) specimens. Coarse trabecular and grey white whorled appearance was seen in 17 (6.15%) cases. However, in 56, the cut section morphology was unremarkable constituting 20.28%. Histologically non-neoplastic lesions in the form of adenomyosis was seen in 52 uteri (18.84%). In neoplastic lesions, pure leiomyoma was diagnosed in 156 specimens (56.18%), whereas other 67 leiomyomas were associated with adenomyosis (24.27%).

Table 2 Histopathological lesion

Histopathological lesion	No. of patients	Percentage
Adenomyosis	52	18.84
Benign leiomyoma	154	55.79
Leiomyomas with adenomyosis	67	24.29
Monckebergs medial sclerosis	2	0.72
Total	276	100

Number of leiomyomas observed in the present study varied from 1 to 6. Out of 156 cases of leiomyomas, 80 were intramural in location, of which 63 were single and 18 were multiple. 44 were sub-serosal in location, 31 cases were single and 13 were multiple in location. Rest 30 were sub mucosal which were single. Of 155 number of leiomyomas, 12(79.87%) were single and 31(20.12%) were multiple.



Sub-serosal leiomyomas varied from few mm to 16x14x12cm in size. Intramural leiomyomas varied from few mm to 10 cm in diameter. Sub-mucosal leiomyomas varied from few mm to 5 cm in diameter. In this study 107 cases (69.48%) showed features of leiomyoma consisting of anastomosing and whorled fascicles of fusiform cells of a relatively uniform size. These cells contain abundant eosinophilic and fibrillar cytoplasm with elongated nuclei having finely dispersed chromatin with occasional nucleoli and with rare mitotic figures. Associated secondary changes were seen in 47(30.51%) cases.

Degenerative changes were observed in 47 leiomyomas (30.51%). Among these 30 leiomyomas showed (64.00%), hyaline change, which constituted the most common degenerative change in the study observed in the study.

There were 5 types of variants of leiomyoma in the present study of the total 156 leiomyomas, which included following types of variants. cellular, epitheloid, schwannoma, myxoid, mitotically active & symplastic leiomyoma.

Table 3 Variants of leiomyoma

Variants of leiomyoma	No. of patients	Percentage
Cellular	81	52.25
Epitheloid	35	22.58
Schwannoma	11	7.18
Myxoid	09	5.80
Mitotically active	09	5.80
Symplastic	10	6.40
Total	155	100

Adenomyosis was found in 52 cases (18.84%) followed by 2 cases of Monckebergs medial sclerosis (0.72%).

Figure-1: Cut section of uterus showing submucosal leiomyomas

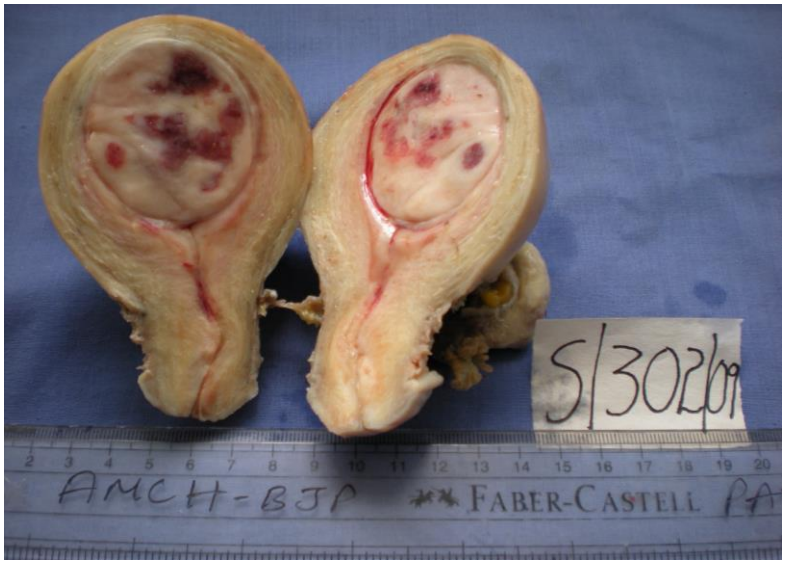


Figure-2: Cut section of uterus showing intramural leiomyoma

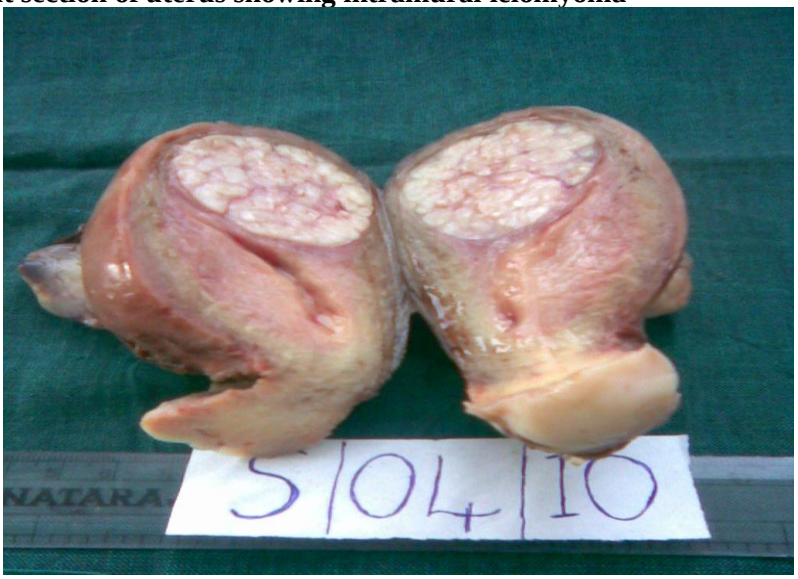


Figure 3: Cut section of uterus showing calcification

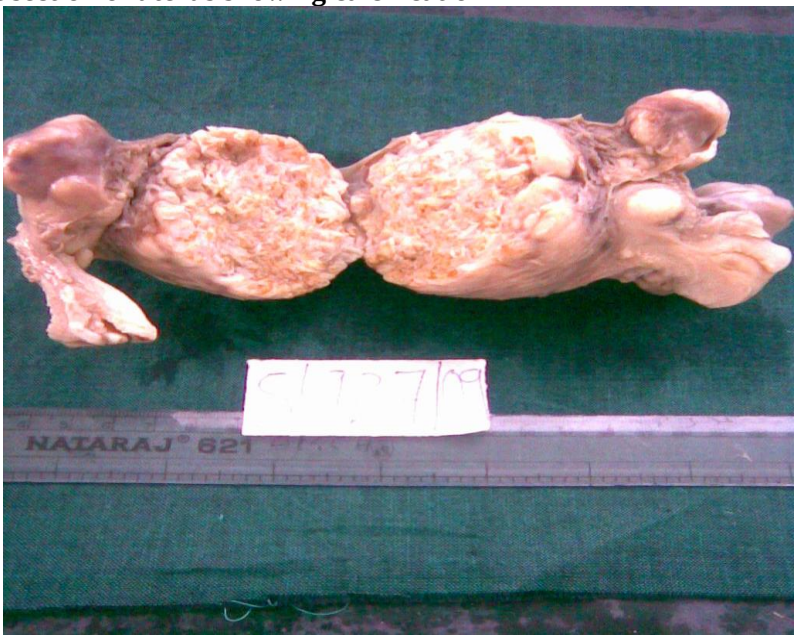


Figure-4: Gross section of uterus showing serosal leiomyoma

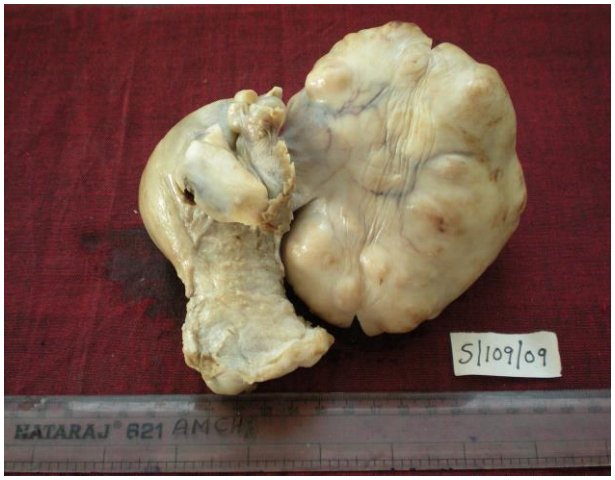


Figure-5:Microphotograph of leiomyoma with a foci of myxoid change low power veiw

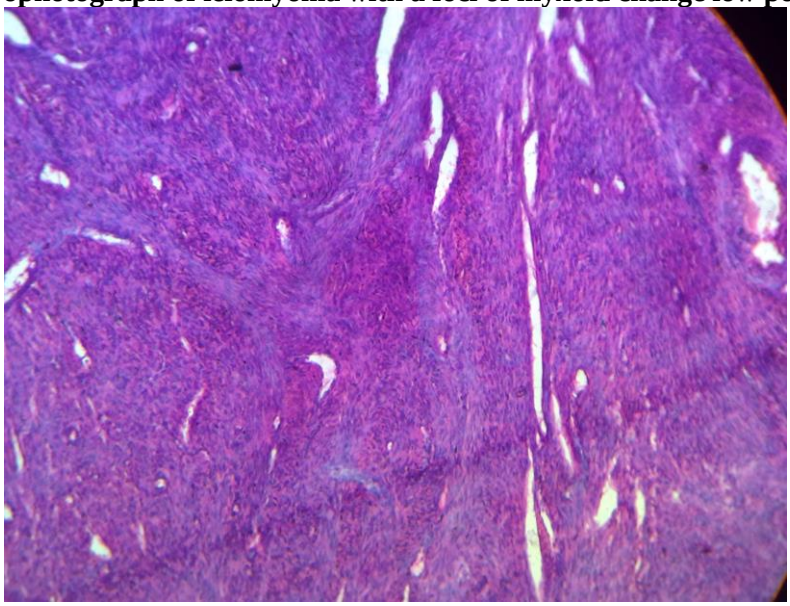


Figure-6: Microphotograph of Adenomyosis showing endometrial glands and stroma with in the myometrium low power

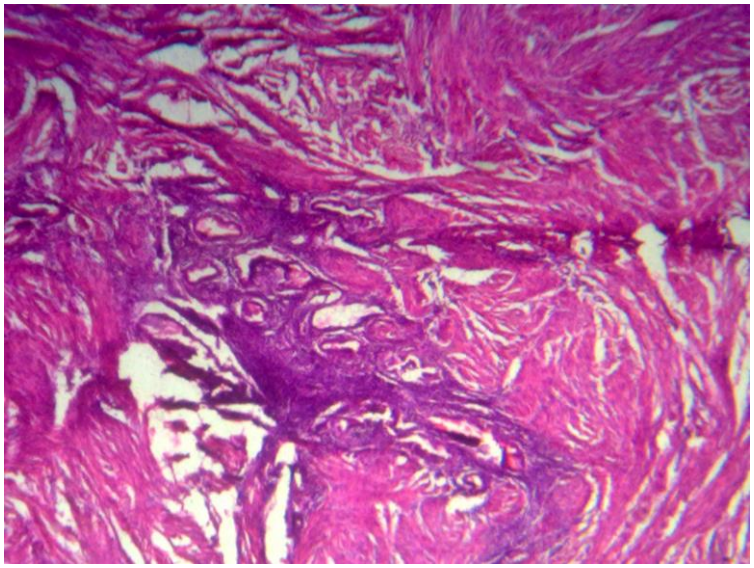


Figure-7: Microphotograph showing low power view of cellular leiomyoma

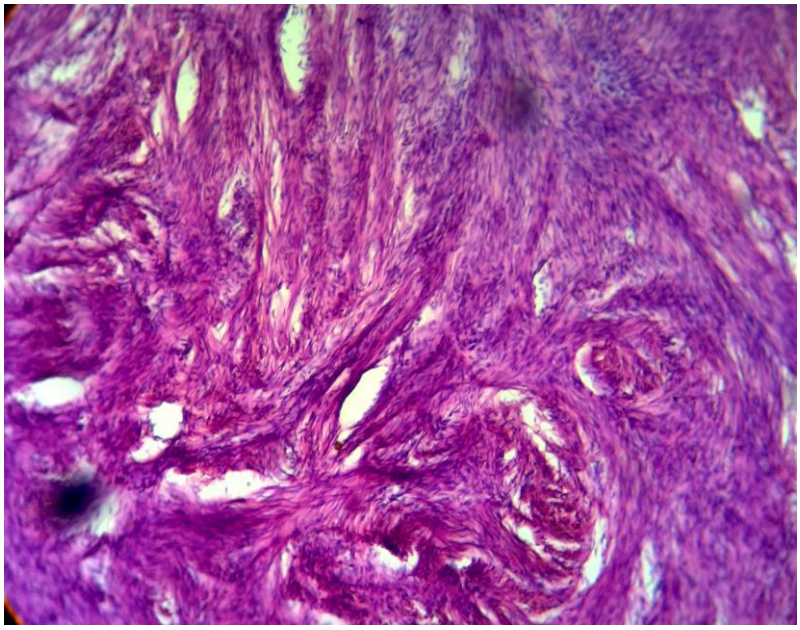
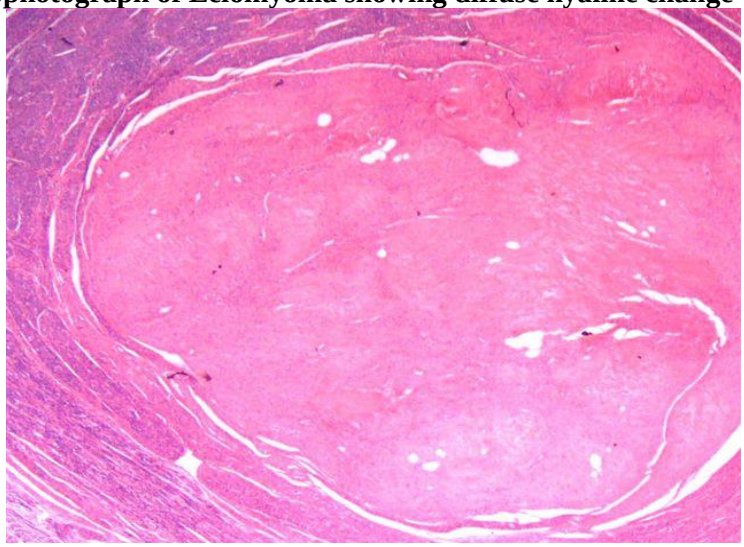


Figure-8: Microphotograph of Leiomyoma showing diffuse hyaline change



DISCUSSION

In the present study, histologically myometrial lesions were classified into non-neoplastic (19.56%) and neoplastic lesions (80.47%). Leiomyomas were the commonest benign neoplastic lesions diagnosed in 55.79% of the cases.

Leiomyomas are benign neoplasms commonly encountered in gynecological practice[2,3,4,5]. In the present study neoplastic lesions constituted 80.47% of the total number of specimen studied. Leiomyoma was the commonest finding (156 cases) constituting 56.18% of the total neoplastic lesions.

In the present study, all the benign tumors are encountered in the uterus were leiomyomas (55.79%). Percentage of leiomyomas (55.79%) in the present study is comparable with the study of Tiltman[6] (1980, 56%), and Cramer and Patel[7] (1990, 77%) noted highest incidence of leiomyomas.

Leiomyomas are usually found in reproductive age group[7,8,9]. In the present study, the highest incidence (46.00%) was observed between 31-40 years. This finding correlates well with the observations made by Reddy & Malathy[4] (1963; 50%) and Rosario Pinto studies[5].

Leiomyomas are believed to be common in nulliparous or relatively infertile women[10]. But in the present study, most were multiparous (99.27%) and 0.72% were nulliparous. Chhabra and

Jaiswal 74 (1996, 82%), Achari and Khanan 32 (1965, 87%) and Rosario Pinto 34 (1968, 76.8%) in their studies also noted highest incidence of leiomyomas in multiparous women and lowest incidence in nulliparous women. The clinical features of leiomyomas are variable, the vast majority being symptomless especially when small the symptomatology. The symptoms and severity usually depend on size, position and the number of leiomyomas present[2]. In the present study, highest number of patients with leiomyoma presented with menorrhagia 36% followed by dysmenorrhea 18.00%. Menorrhagia was the commonest clinical symptom noted by Rosario Pinto[5] (1968, 37.9%), whereas it is only about 16% in Bhaskar Reddy and Malathy[4].White discharge per vagina in the present study (12%) correlates with the Reddy and Malathy study[4].

In the present study, abnormal uterine bleeding in the form of menorrhagia, menorrhagia and polymenorrhagia was found in 37% of cases, which is comparable to the study conducted by Chhabra & Jaiswal[10](1996)

In the present study, the number of leiomyomas in a uterus varied from 1-6, whereas Rosario Pinto 5 (1968) noted a maximum number up to 14. In the present study, secondary changes were observed in the 30.51% of leiomyomas. Persaud and Arjoon[11] (1970) reported secondary changes in 65% of the leiomyomas and Reddy and Malathy[4] (1963) observed some form of secondary changes present in all leiomyomas (154 cases)[4,5,12].

In the present study, various types of degenerative changes were observed. Hyaline degenerative was the commonest secondary change which was seen in 30 leiomyomas and thus constituted 64%. Persaud and Arjoon[11] (1963), noted higher incidence of hyaline change,which is comparable with the present study.

Several histopathological variants of leiomyomas have been described in the literature, 5 variants encountered in the present study constituting cellular, epitheloid, symplastic, mitotically active & schwannoma

Cellular leiomyoma –The histological features of dense cellularity of cellular leiomyoma in the present study were similar to the features mentioned by various authors[6,7,8,,9]. The clinical features, size, location and microscopic features were similar to the study made by various authors

Epitheloid Leiomyoma: epitheloid leiomyoma with classical microscopic features with predominant clear cells and few cells with eosinophilic cytoplasm with mitosis 1-2/ 10 HPF. Similar features were described by various authors[7,13,6,9].

Symplastic Leiomyoma: showed Histologically pleomorphic cells bordered by spindle shaped cells and was admixed with multinucleated giant cells with mitosis 1-2/ 10 HPF. Similar features were described by various authors[7,8,9].

Myxoid variant: microscopically showed stellate shaped cells widely separated by extracellular material. Myxoid stroma is produced by myxoid degeneration of collagen surrounding the nodules of smooth muscle. Similar features were described by various authors[7,13,6,9].

Mitotically active variant: microscopically showed usual leiomyoma with increased mitotic index i.e. 5-20 MF/10HPF. They have pushing border compressing adjacent myometrium. Similar features were described by various authors[7,13,6,9].

Adenomyosis was the commonest associated pathology observed in the present study with an incidence of 18.84%, which is comparable to the study conducted by Carter JE, Kong I I[14] (23%).

Many articles from GBD study reflect the extent of problems discussed in this study[15-18]. Few of the related studies were reported by Gadge et. al.[19], Gaidhane et al [20] and Marfani et al [21]. Patwa et al reported on ultrasound and color doppler features of transitional cell carcinoma of the endometrium with pathological correlation[22]. Similar studies were reported by Shweta et al[23] and Wankhade et. al.[24]

In the present study, myometrium was unremarkable in 56 uteri (20.28%). However, 2 uteri over the age of 50 years, showed Monckeberg's sclerosis involving medium sized arteries of the myometrium which constituted 0.72%.[25,26]

CONCLUSION

Histopathological study of myometrial lesions includes adenomyosis and variety of leiomyomas classified based on site, size and microscopic variants. Although benign and malignant lesions of are distinct and well studied, there are some benign lesions that often mimic cancer-causing diagnostic dilemma. Therefore,if diagnosed with clinical ,radiological and histopathology ,proper diagnosis and treatment can be made.

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