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Original research article

Spectrum of uterine smooth muscle tumours in tertiary care center

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Abstract

Background: Most myometrial tumours continue to be a major cause of morbidity. They are leading indication for hysterectomy in pre-menopausal women.Benign leiomyomas are the most common tumours in women.

Aim: To study spectrum of uterine smooth muscle tumours in tertiary care centre.

Objectives: The purpose of this study was to evaluate the frequency of uterine smooth muscle tumours, Its variants and detailed histo-morphological features of the tumours.

Material and Methods: uterine leiomyomas for a period of two years were studied.

Results: Out of 321 cases only one case of leiomyosarcoma was reported. Conclusion; subtypes of leiomyomas have to be differentiated from leiomyosarcoma as the prognosis is different.

Keywords: Leiomyoma, leiomyosarcoma

Introduction

Smooth muscle tumours were the most frequent mesenchymal tumours of the uterus. [1]. The majority of the uterine smooth muscle tumours are readily classifiable as benign or malignant based on their gross and microscopic appearances. However, when unusual features are seen in some leiomyoma variants, the differential diagnosis with leiomyosarcoma and also with non smooth muscle tumours may become challenging. The pattern of growth, histological appearances, associations with vessels provide the basis for the classification of most benign smooth muscle tumours of uterus [2]. However diagnostic dilemmas were encountered with leiomyoma variants because of their wide spectrum of gross and microscopic appearance often causing concern for malignancy.

Materials and Methods

In this study, we performed retrospective analysis of hysterectomy and myomectomy specimens. That were received in our pathology department, over a period of 2 years (June2020 to May 2022) with regarding patient age consideration.

Results

During this 2 year study period, Histopathological examination of hysterectomy and myomectomy specimens -321 specimens shows uterine smooth muscle tumours. Most of the patients were in premenopausal age group.

UTERINE SMOOTH MUSCLE TUMOR	NUMBER OF CASES	AGE DISTRIBUTION
BENIGN LEIOMYOMAS	**320**	**30 – 45**
STUMP	00	O
MALIGNANT LEIOMYOSARCOMA	01	46

Leiomyoma variants are as follows:

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LEIOMYOMA VARIANTS	NUMBER OF CASES	PERCENTAGE
TYPICAL LEIOMYOMA	311	97.5%
CELLULAR LEIOMYOMA	03	1%
LEIOMYOMA WITH BIZARRE NUCLEI	02	0.6%
LIPOLEIOMYOMA	02	0.6%
ANGIOLIPOLEIOMYOMA	01	0.3%

Figures

Cellular leiomyoma

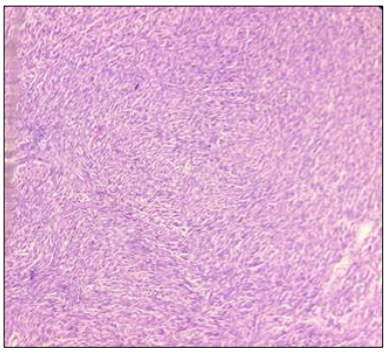

Fig 1: H&E 100x showing increased cellularity compared tosurrounding myometrium

Leiomyoma with bizarre nuclei

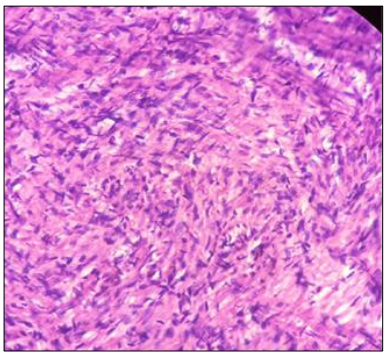

Fig 2: H&E 100x, showing atypical spindle cells in fascicles and bundles with moderate eosinophilic cytoplasm.

Lipoleiomyoma

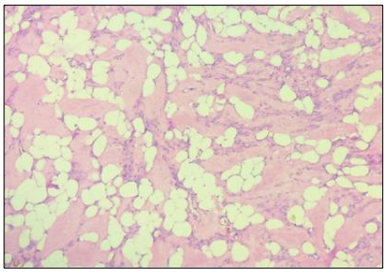

Fig 3: H&E, 100x showing adipocytes scattered within a Leiomyoma.

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Angiolipoleiomyoma

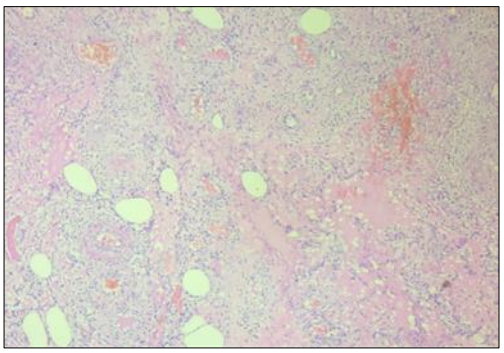

Fig 4: H&E, 100x showing Interlacing fascicles of spindle cells swirling around thick walled blood vessels.

Gross features of leiomyosarcoma. A Large fleshy mass .C/s: areas of haemorrhage and necrosis

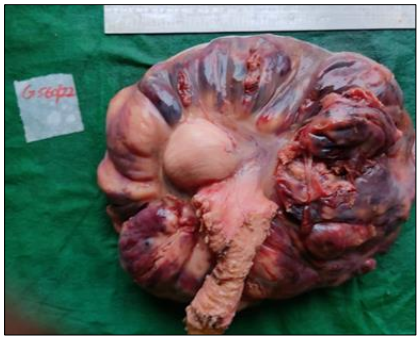

Fig 5

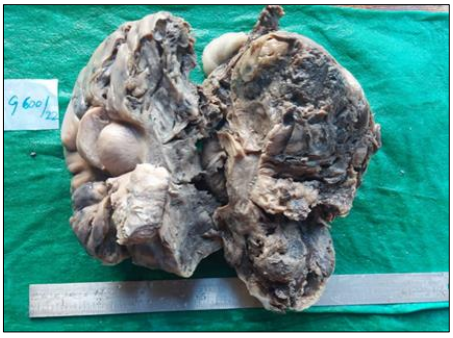

Fig 6

Leiomyosarcoma

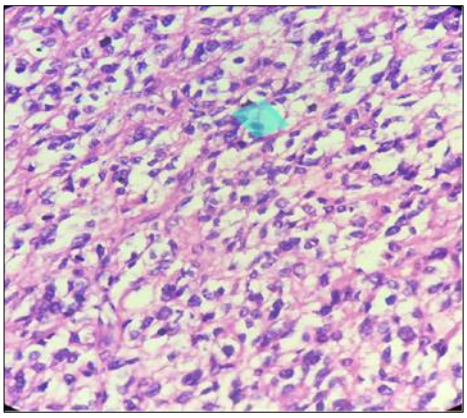

Fig 7: H&E, 100x, showing Fascicles of spindle cells with abundant cytoplasm. Moderate to severe nuclear atypia.

Discussion

In the present study, Histologically myometrial lesions were classified into: non –neoplastic (99.6%)and neoplastic (0.4%.). In the present study, the mean age of diagnosis was around 30-45 years,as incidence rates among leiomyomas increased with increasing age which correlated with Lynn M Marshall ScD [17] Most of the patients were asymptomatic and some had clinical presentation ranging from menorrhagia, pain abdomen and mass per abdomen. Present study, noted highest incidence of benign leiomyomas as comparable with study of Tiltman (1980) [5] and Cramer and patel (1990) [10]. Leiomyomas are usually found in reproductive age group. Highest incidence was observed between 30-40 years.This finding correlates well with the observations made by Reddy and Malathy (1963) and Rosario pinto studies. A cellular leiomyoma is one in which the cellularity is significantly greater than the surrounding myometrium. [1, 9]. We reported three cases (1%) of cellular leiomyoma. Microscopically it shows- Increased cellularity compared tosurrounding myometrium. Fascicular growth pattern withspindle shaped cells. Thick walled vessels. No- Necrosis, Atypia, Mitotic figures. (Fig-1).The isolated finding of hypercellularity may suggest a diagnosis of leiomyosarcoma, but cellular leiomyoma lacks tumor cell necrosis, Has few mitotic figures and lacks the moderate to severe cytological atypia seen in

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leiomyosarcoma [5, 6, 7, 9]. We reported two cases of leiomyoma with bizzare nuclei/ atypical leiomyoma. Microscopically it shows - Atypical spindle cells in fascicles and bundles with moderate eosinophilic cytoplasm. Variation in size and shape of hyperchromatic nuclei. Few mitotic figures. (Fig-2). As an isolated finding - cytological atypia, an unreliable criterion for the diagnosis of clinically malignant uterine smooth muscle tumours because it can be seen in clinically benign smooth muscle neoplasm [8]. In the present study we diagnosed two cases (0.6%) of lipoleiomyoma. Microscopicaly it shows- Adipocytes are found scattered in typical leiomyoma.(Fig-3). According to Willen *et al.* [15] the incidence of lipoleiomyoma was 0.03- 0.2% however, Akbulut *et al.* [16] reported a higher incidence of 2.9%.Several types of differentiation have been identified in leiomyomas, but most common is fatty differention. Extremely rare and unique variant of lipoma according to Garima and Mohantistudy [12] we also reported one case of an angiolipoleiomyoma. (fig4). In the present study, Leiomyosarcoma constituted 1% of uterine malignancy with an average age of 46years which correlated with previous study conducted by Van Den Haak *et al*, [14]. Grossly the tumor is large fleshy with variegated appearance. (fig 5, 6). Microscopically it shows - Fascicles of spindle cells with abundant cytoplasm. Moderate to severe nuclear atypia.Tumor cell necrosis.Mitotic index >10MF/10HPF. (Fig-7).

Conclusion

Most subtypes of leiomyoma were chiefly of clinical interest in that they mimic malignancy in one or more respects. Though the frequency with which they occur remains less, their correct diagnosis was essential. They need to be differentiated from malignant myometrial neoplasms as most of these variants carry good prognosis and of less clinical significance.

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