

Cellular leiomyoma- a variant of leiomyoma: A case report and review of literature

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Abstract: Uterine leiomyomas are benign tumors commonly encountered in gynaecological practice. Growth of these tumors depends on estrogen and progesterone hormone. There are various histological types of leiomyoma. Cellular leiomyoma is one of the rare entities. Two differential diagnoses of cellular leiomyoma are leiomyosarcoma and endometrial stromal neoplasm. Here we reported a case of cellular leiomyoma in a 30 year old female. In conclusion Secondary changes and variations in morphology of leiomyoma especially increased cellularity, increased mitoses and nuclear atypia create diagnostic dilemma.

Keywords: Uterine leiomyoma, cellular leiomyoma.

INTRODUCTION

Secondary changes in leiomyomas are detectable in majority of cases [1]. In some cases morphological variations such as increased cellularity, increased mitoses and nuclear atypia create diagnostic difficulties for leiomyoma. Cellular leiomyoma is one of the morphological variant of leiomyoma having cellularity which is significantly higher than that of the surrounding myometrium with moderate to severe atypia but lacks tumor necrosis and has infrequent mitoses [2, 3]. Here we reported a case of cellular leiomyoma in a young female.

CASE REPORT

A 30 year old female presented to gynaecological department with complaints of irregular menstruation with mild lower abdominal pain from last 2 months. There was no history of any hormonal pills intake and use of contraceptive devices. She had 2 live children without any bad obstetric history. She had regular menstrual cycle of 3-5/28 days with average flow previously. There was no history of any abnormal discharge per vaginum.

Local abdominal examination was unremarkable. Her gynaecological examination revealed uniformly enlarged, non-tender uterus corresponding to 16 weeks size. Routine blood and biochemical examination did not show abnormal results except lower hemoglobin value (9.5 gm/dl). Ultrasonography (USG) abdomen revealed a heterogeneous hypo echoic intramural solid mass lesion

measuring 5.5x4.8 cm in posterior wall of uterine fundus showing peripheral vascularity. Bilateral tubes and ovaries were separately visualized and appeared normal. (Fig.1). A provisional diagnosis of uterine fibroid was made. Myomectomy was performed.

Received myomectomy specimen was well encapsulated. Cut section was grey white without any secondary changes. Representative sections examined from the mass showed increased cellularity revealing spindle cells with fusiform shape of nuclei and scant to moderate amount of cytoplasm. Few large thick walled muscular vessels were also identified favouring a diagnosis of cellular leiomyoma over stromal tumor. (Fig 2 & 3).

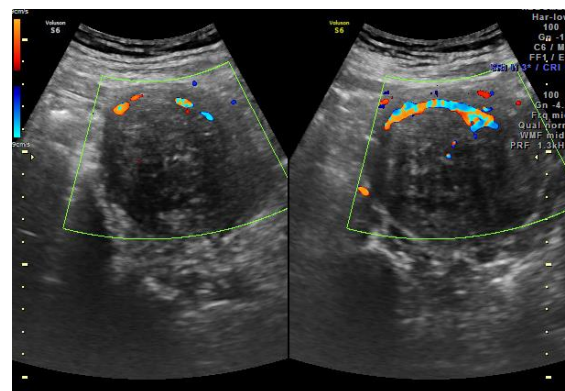


Fig. 1: Ultrasonography (USG) abdomen showed a mass of 5.5x4.8 cms in posterior wall of uterine fundus.

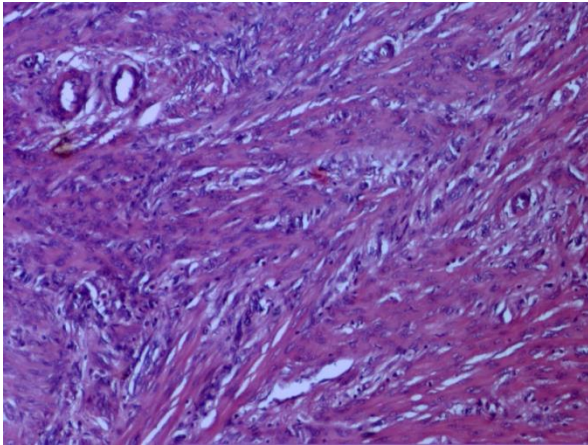


Fig.2: H& E section revealed increase cellularity, spindle cells with fusiform shape of nuclei and scant to moderate amount of cytoplasm.

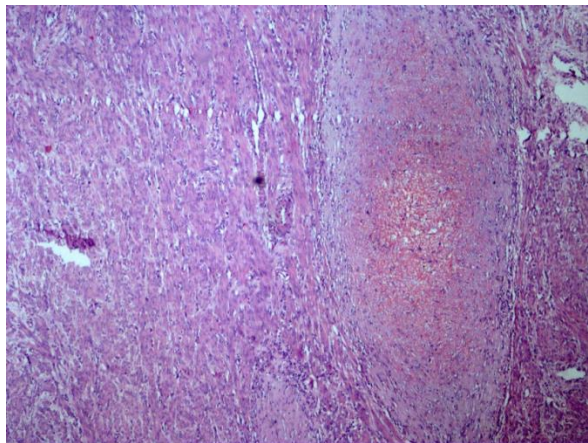


Fig. 3: H&E section showed few large thick walled muscular vessels along with features of cellular leiomyoma.

DISCUSSION

Leiomyomas are the most common benign neoplasms of uterus. Estrogen and progesterone hormones act as growth promoters of uterine leiomyoma. Transforming growth factor- β , basic fibroblast growth factor, epidermal growth factor, and insulin-like growth factor-I, are found to be elevated in leiomyomas. These growth factors may be the effectors of estrogen and progesterone dependent growth of these tumors [1, 2].

Nonrandom cytogenetic abnormalities have been found in about 40% of tumors examined. Translocation between chromosomes 12 and 14 (20%), deletion of chromosome 7 (17%) and aberrations of 6p21 (including deletions, inversions, translocations, and insertions) and trisomy 12 are known cytogenetic abnormalities in uterine leiomyomas. It has been also associated with complete loss of short arm of chromosome 1 [3, 4].

Secondary changes in leiomyomas are detectable in majority of cases [1]. These include hyaline changes, mucoid, myxoid or myxomatous changes, calcification, cystic changes and fatty metamorphosis. Various histological variants of leiomyomas identified in the literature include, cellular leiomyoma, apoplectic leiomyoma, leiomyoma with lymphoid infiltration, atypical (bizarre, symplastic or pleomorphic) leiomyoma, lipo leiomyoma, palisaded leiomyoma, epithelioid (clear cell) leiomyoma, cotyledonoid dissecting leiomyoma, parasitic leiomyoma, leiomyoma with skeletal muscle differentiation, diffuse leiomyomatosis, intravenous leiomyomatosis, benign metastasizing leiomyoma and mitotically active leiomyoma [1, 5].

WHO described the cellular leiomyomas as a variant of leiomyoma having cellularity which is significantly higher than that of the surrounding myometrium but with clinical behavior identical to usual leiomyomas. They lack tumor necrosis. But they have moderate to severe atypia and infrequent mitoses. Cellular leiomyomas without significant atypia, necrosis or high mitotic count carry a good prognosis similar to the usual leiomyoma [3].

Gross appearance of cellular leiomyomas may resemble typical leiomyomas but often have a fleshier sectioned surface. Microscopically, cellular leiomyomas almost always have low mitotic count (<5MF/HPF). Cellular leiomyomas are strong differential diagnosis of endometrial stromal tumors. Various histological features are helpful in the differential diagnosis of these two neoplasms. (Table 1) In young women wishing to retain their fertility or in older women with high surgical risk it is very important to differentiate the two tumors [6, 7]. To differentiate these two, imaging studies, hysteroscopy or repeat sampling should be considered before hysterectomy [8].

Table 1: Cellular leiomyomas vs endometrial stromal tumors

Histological features	Cellular leiomyomas	Endometrial stromal tumors
Fascicular growth pattern	Present	Absent
Reticulin fibers	Parallel the fascicles of cells	Surround individual tumor cells
Vessels	Vessels of large caliber with thick muscular walls	Small blood vessels
Desmin immunoreactivity	Present	Absent

CONCLUSION

To conclude, uterine leiomyomas are common benign tumors in gynaecological histopathology specimens. Secondary changes and variations in morphology especially increased cellularity, increased mitoses and nuclear atypia create diagnostic dilemma.

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