Case Report

Lipoleiomyoma of the uterus with coexisting leiomyoma showing hyaline change in a 60-year-old female: A rare case report

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ABSTRACT

Lipoleiomyoma is a rare benign lipomatous variant of uterine leiomyoma composed of mature adipose tissue admixed with smooth muscle fibers. It is predominantly seen in peri- and post-menopausal women and may clinically and radiologically mimic malignant pelvic neoplasms. We report a case of a 60-year-old post-menopausal female who presented with lower abdominal discomfort. Ultrasonography revealed a bulky post-menopausal uterus with a large heteroechoic lesion in the uterine cavity, suggestive of endometrial SOL. Magnetic resonance imaging of the pelvis demonstrated multiple submucosal leiomyomas with fatty degeneration and hemorrhagic changes. Total hysterectomy specimen on gross examination revealed two well-circumscribed intramural nodules with a characteristic yellow-white whorled appearance. Histopathological examination showed one leiomyoma with extensive mature adipose tissue consistent with lipoleiomyoma and another leiomyoma with hyaline degeneration. Lipoleiomyoma is an uncommon benign uterine neoplasm and should be considered in the differential diagnosis of fat-containing pelvic masses in post-menopausal women.

Key words: Hyaline degeneration, Leiomyoma, Lipoleiomyoma, Post-menopausal woman, Uterus

Lipoleiomyoma is a rare benign variant of uterine leiomyoma characterized by an admixture of mature adipocytes and smooth muscle cells. The incidence ranges from 0.03% to 0.2% of all uterine leiomyomas [1]. These tumors are predominantly encountered in peri- and post-menopausal women and are frequently associated with metabolic disorders, including obesity, diabetes mellitus, hypothyroidism, and hyperlipidemia [2]. The exact histogenesis remains uncertain. Various theories have been proposed, including fatty metaplasia of smooth muscle cells, misplaced embryonal fat cells, and differentiation from multipotential mesenchymal cells [3]. Clinically and radiologically, lipoleiomyoma may mimic ovarian teratoma, lipoma, liposarcoma, or degenerating leiomyoma. Histopathological examination remains the gold standard for definitive diagnosis [4,5].

We report a rare case of uterine lipoleiomyoma coexisting with leiomyoma showing hyaline degeneration in a 60-year-old post-menopausal female.

CASE REPORT

A 60-year-old P3L3 post-menopausal female presented with lower abdominal pain and abdominal discomfort. She denied any history of post-menopausal bleeding or other constitutional symptoms. Her past medical history was significant for hypertension and Type II diabetes mellitus, for which she was receiving regular medical treatment.

Abdominal examination revealed mild tenderness on deep palpation, with no evidence of guarding or rigidity.

Ultrasonography of the whole abdomen revealed a bulky post-menopausal uterus with a large, well-defined, heteroechoic space-occupying lesion measuring approximately 72 × 71 × 41 mm located in the middle of the uterus, suggestive of endometrial SOL. No adnexal mass or free fluid was noted. Magnetic resonance imaging (MRI) of the pelvis with contrast demonstrated a bulky anteverted and anteflexed uterus measuring 9.4 × 7.5 × 7.8 cm. Multiple well-defined T1 isointense and T2 hypo- to isointense endometrial/submucosal mass lesions were identified, showing peripheral and central T1 hyperintensities with signal drop on fat-suppressed imaging, suggestive of leiomyomas with fatty degeneration. The lesions showed hypoenhancement on post-contrast imaging with a few foci of internal hemorrhage on gradient recalled echo sequences. No restricted diffusion was observed on diffusion-weighted imaging. One lesion along the anterior myometrium measured 5.1 × 4.3 × 2.6 cm, whereas another lesion along the posterior myometrium measured 6.8 × 6.2 × 6.2 cm.

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A few hemorrhagic contents were also seen within the fundic endometrium. Both ovaries appeared normal. Based on clinical and radiological findings, a provisional diagnosis of leiomyoma was made, and the patient underwent hysterectomy.

A specimen was received in the Department of Histopathology for evaluation, consisting of a uterus with an attached cervix and separately received bilateral adnexa. On serial sectioning, two well-circumscribed intramural nodules were identified (Fig. 1). The first nodule, measuring 7 × 5 cm, showed a characteristic yellow-white whorled cut surface with soft yellow fatty areas admixed with firm white fasciculated areas. The second nodule, measuring 3.5 × 2 cm, displayed a gray-white whorled appearance with homogenous glistening areas. No areas of necrosis or hemorrhage were identified grossly.

Microscopic examination of the first nodule revealed a benign mesenchymal neoplasm composed of intersecting fascicles of bland spindle-shaped smooth muscle cells, admixed with abundant mature adipose tissue. The spindle cells had elongated, cigar-shaped nuclei with eosinophilic cytoplasm. No nuclear atypia, coagulative tumor cell necrosis, or increased mitotic activity was identified. The features were diagnostic of lipoleiomyoma (Fig. 2a). Sections from the second nodule revealed benign smooth muscle bundles arranged in intersecting fascicles with extensive hyalinization, consistent with leiomyoma with hyaline degeneration



Figure 1: Gross image of the uterus with cervix showing two nodules, the larger nodule displaying yellow-white whorled areas on the cut surface

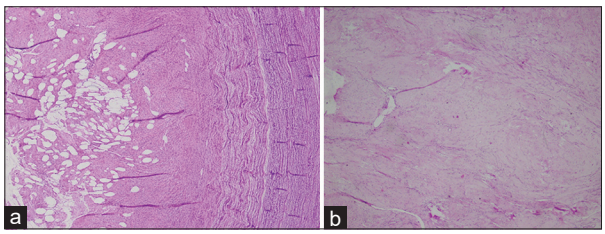


Figure 2: (a) Photomicrograph showing lipoleiomyoma with admixed smooth muscle bundles and mature adipocytes, with compressed uterine myometrium at the periphery. (H and E, ×4) (b) Photomicrograph showing a leiomyoma composed of intersecting fascicles of benign smooth muscle cells with extensive hyaline degeneration (H and E, ×4). H and E: Hematoxylin and Eosin

Table 1: Differential diagnosis of lipoleiomyoma and other fat-containing pelvic tumors

Feature	Lipoleiomyoma	Mature cystic teratoma	Pure lipoma	Angiomyolipoma	Atypical lipomatous tumor	Liposarcoma
Clinical	Peri/post-menopausal; pelvic pain or incidental	Younger women; adnexal mass	Incidental	Rare pelvic pain	Slowly enlarging mass	Progressive enlarging mass
Radiology	Fat-containing uterine lesion with signal drop on FS- magnetic resonance imaging	Cystic lesion with fat±calcification	Homogeneous fatty lesion	Fat with a vascular component	Fatty lesion with thick septa	Heterogeneous infiltrative mass
Gross	Yellow-white whorled mass	Hair, sebum, cartilage or teeth	Soft encapsulated yellow mass	Yellow vascular mass	Lobulated yellow mass	Variegated mass with hemorrhage and necrosis
Microscopy	Mature adipocytes with benign smooth muscle fascicles	Mature tissues from three germ layers	Mature adipocytes only	Fat, thick-walled vessels, smooth muscle	Atypical adipocytes/ stromal cells	Lipoblasts with marked atypia
Atypia/Lipoblasts	Absent	Absent	Absent	Absent	Mild atypia±lipoblasts	Present
Mitosis/Necrosis	Absent	Absent	Absent	Low	Low	Increased; necrosis common
Immunohistochemistry	SMA, Desmin (+)	Variable	S-100 (+)	HMB-45, Melan-A (+)	MDM2, CDK4 (+)	MDM2, CDK4 (+)
Behaviour	Benign	Benign	Benign	Benign	Locally aggressive	Malignant

(Fig. 2b). The endometrium showed cystic atrophy. Cervix revealed chronic cervicitis with squamous metaplasia. Bilateral ovaries and fallopian tubes were unremarkable. The final diagnosis was lipoleiomyoma of the uterus, leiomyoma with hyaline degeneration, endometrium showing cystic atrophy, and chronic cervicitis with squamous metaplasia.

The post-operative course was uneventful, and the patient was discharged on the 14th post-operative day without any significant complications. She has been on regular monthly follow-up for the past 3 months and remains asymptomatic with no evidence of any post-operative morbidity.

DISCUSSION

Lipoleiomyoma is an uncommon benign uterine neoplasm typically occurring in post-menopausal women [4]. Histologically, it consists of variable proportions of mature adipocytes and benign smooth muscle fibers. Most patients are asymptomatic; however, some may present with symptoms similar to conventional leiomyomas, including pelvic pain, abdominal mass, abnormal uterine bleeding, or pressure symptoms.

Radiologically, the presence of fat within the lesion may suggest the diagnosis. MRI is particularly useful because the adipose component demonstrates a characteristic signal drop on fat-suppressed sequences [6].

The differential diagnosis includes mature cystic teratoma, pure lipoma, angiomyolipoma, atypical lipomatous tumor, and liposarcoma [7]. Histopathological examination remains essential for confirmation (Table 1).

Degenerative changes are common in leiomyomas, with hyaline degeneration being the most frequent type [8]. Coexistence of lipoleiomyoma with another leiomyoma showing hyaline degeneration is relatively uncommon. The prognosis of lipoleiomyoma is excellent, and surgical excision is curative.

CONCLUSION

Lipoleiomyoma is a rare benign lipomatous variant of uterine leiomyoma that should be considered in the differential diagnosis of fat-containing uterine masses in post-menopausal women. Correlation of radiological findings with histopathology is important for accurate diagnosis and exclusion of malignant neoplasms. The present case is noteworthy because of the coexistence of lipoleiomyoma with leiomyoma showing hyaline degeneration in a 60-year-old post-menopausal female.

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