



ORIGINAL RESEARCH PAPER

Histopathology

UTERINE LIPOLEIOMYOMA-A RARE BENIGN NEOPLASM: A CASE REPORT.

KEY WORDS: Uterine lipoleiomyoma, Leiomyoma variant, Adipocytes, Smooth muscle, S100, H-caldesmon

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ABSTRACT

Uterine Lipoleiomyoma is a rare benign variant of uterine leiomyoma characterized by the presence of mature adipose tissue admixed with smooth muscle cells and fibrous tissue. The reported incidence ranges from 0.03% to 0.2% of all uterine tumors. These tumors predominantly occur in obese peri- or post-menopausal women and are most commonly located intramurally within the uterine corpus. Clinically, uterine Lipoleiomyomas present with symptoms similar to conventional leiomyomas or may remain asymptomatic and are often detected incidentally on imaging or histopathological examination. We report a case of uterine lipoleiomyoma in a 52-year-old female who presented with uterine prolapse. Radiological evaluation revealed a bulky uterus with a fat-containing lesion arising from the uterine corpus. Total abdominal hysterectomy was performed, and histopathological examination revealed an intimate admixture of benign smooth muscle cells and mature adipocytes. Immunohistochemistry demonstrated positivity for S100 in the adipocytic component and H-caldesmon/Desmin in the smooth muscle component, confirming the diagnosis. Awareness of this rare benign entity and its characteristic histopathological features is essential to ensure accurate diagnosis and avoid unnecessary aggressive management.

INTRODUCTION

Uterine lipoleiomyoma is an uncommon benign mesenchymal tumor of the uterus and is regarded as a rare histological variant of uterine leiomyoma. It is characterized by a variable admixture of mature adipocytes, smooth muscle cells, and fibrous tissue. The incidence of uterine lipoleiomyoma is reported to be between 0.03% and 0.2% of all uterine tumors, making it an infrequently encountered pathological entity. Because of its rarity and overlapping clinical features with conventional leiomyomas, lipoleiomyoma is often under-recognized or misdiagnosed.

Lipoleiomyomas predominantly occur in peri-menopausal and post-menopausal women, with most cases reported in the fifth to sixth decade of life. Several studies have observed an association between lipoleiomyoma and obesity, metabolic disorders, and estrogen imbalance, suggesting that altered lipid metabolism may play a role in tumor development. These tumors are most commonly located intramurally within the uterine corpus, although rare cases arising in the cervix or extra-uterine locations have been described.

Clinically, uterine lipoleiomyomas present with symptoms similar to those of conventional leiomyomas, including abnormal uterine bleeding, pelvic pain, mass effect, or pressure symptoms. However, many cases remain asymptomatic and are detected incidentally during radiological investigations or on histopathological examination of hysterectomy specimens performed for other indications. Radiologically, these tumors appear as fat-containing uterine masses, which necessitates differentiation from other pelvic lipomatous lesions such as ovarian teratoma, lipoma, angiomyolipoma, or liposarcoma.

Definitive diagnosis of uterine lipoleiomyoma relies on histopathological examination, supported by immunohistochemistry. Awareness of this entity is crucial for pathologists and clinicians to avoid overdiagnosis and unnecessary aggressive surgical management, as lipoleiomyoma is a benign tumor with an excellent prognosis.

CASE REPORT

A 52-year-old female patient presented to the Department of Obstetrics and Gynaecology with complaints of uterine prolapse. The patient was peri-menopausal and had a body mass index (BMI) of 31.7 kg/m², consistent with obesity. There was no significant past medical history or family history of gynecological malignancy. Clinical examination revealed a second-degree uterovaginal prolapse.

Ultrasonography of the pelvis demonstrated a bulky uterus with features suggestive of uterine prolapse. Imaging further revealed a fat-containing lesion arising from the uterine corpus, raising the possibility of a lipomatous uterine tumor. Based on the clinical and radiological findings, the patient was planned for surgical management.

The patient underwent total abdominal hysterectomy with bilateral appendages. The hysterectomy specimen was received in the Department of Pathology with a provisional diagnosis of abnormal uterine bleeding with leiomyoma.

MATERIALS AND METHODS

The hysterectomy specimen was fixed in 10% neutral buffered formalin. Gross examination was performed, and representative sections were taken from the cervix, endometrium, and the intramural mass. Routine tissue processing was carried out, and paraffin-embedded sections were prepared. Sections were stained with Hematoxylin and Eosin (H&E) for histopathological evaluation.

Immunohistochemical analysis was performed to confirm the diagnosis. Antibodies used included S100 for adipocytic differentiation and H-caldesmon and Desmin for smooth muscle differentiation.

RESULTS

Gross Findings

The hysterectomy specimen with bilateral appendages measured approximately 24 × 22 × 15 cm. On cut section, a large, well-circumscribed, solid intramural mass measuring

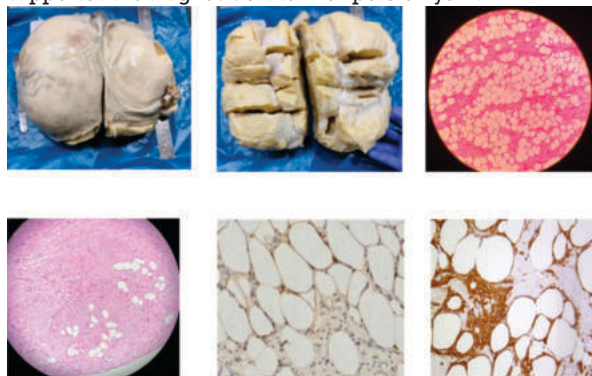
20.5 × 18.5 cm was identified within the uterine corpus. The mass was grey-yellow in appearance and occupied the endometrial cavity, causing its obliteration. The cut surface suggested a mixture of fatty and smooth muscle components.

Histopathological Findings

Microscopic examination of sections from the mass revealed a well-circumscribed lesion composed of an intimate admixture of benign smooth muscle cells and mature adipocytes. The smooth muscle cells were arranged in interlacing fascicles and appeared bland with elongated nuclei and eosinophilic cytoplasm. There was no evidence of nuclear atypia, pleomorphism, or increased mitotic activity. Mitotic figures were absent. The adipocytic component consisted of mature adipocytes with clear cytoplasm and peripherally displaced nuclei. No areas of necrosis, hemorrhage, or malignant transformation were identified.

Immunohistochemistry

Immunohistochemical staining showed strong positivity for S100 protein in the adipocytic component, confirming adipose tissue differentiation. The smooth muscle component showed positivity for H-caldesmon and Desmin, confirming smooth muscle origin. These immunohistochemical findings supported the diagnosis of uterine lipoleiomyoma.



DISCUSSION

Uterine lipoleiomyoma is a rare benign tumor that represents a distinct histological variant of uterine leiomyoma. The tumor is characterized by the presence of mature adipocytes admixed with smooth muscle cells and fibrous tissue. Since its first description, several hypotheses have been proposed regarding its pathogenesis, including fatty metamorphosis of smooth muscle cells, metaplasia of pluripotent mesenchymal cells, or differentiation of adipocytes under the influence of hormonal and metabolic factors.

The majority of reported cases occur in obese peri- or post-menopausal women, suggesting a possible association with estrogen imbalance and altered lipid metabolism. In the present case, the patient was 52 years old and obese, supporting the observations reported in the literature.

Clinically, uterine lipoleiomyomas resemble conventional leiomyomas and may present with abnormal uterine bleeding, pelvic pain, or pressure symptoms. However, many cases are asymptomatic and are discovered incidentally. In the present case, the patient presented with uterine prolapse, and the lipoleiomyoma was detected during radiological evaluation and confirmed on histopathology.

Radiological imaging plays an important role in preoperative diagnosis, as the presence of fat within a uterine lesion is suggestive of lipoleiomyoma. However, differentiation from other fat-containing pelvic tumors is essential. Histopathological examination remains the gold standard for diagnosis. The absence of cellular atypia, necrosis, and mitotic activity distinguishes lipoleiomyoma from malignant tumors such as liposarcoma.

Immunohistochemistry serves as a valuable adjunct in

confirming the diagnosis. Positivity for S100 in adipocytes and smooth muscle markers such as Desmin and H-caldesmon in spindle cells confirms the biphasic nature of the tumor. As lipoleiomyoma is a benign entity, management is similar to that of leiomyoma, and surgical intervention is reserved for symptomatic cases.

CONCLUSION

Uterine lipoleiomyoma is a rare benign variant of uterine leiomyoma with characteristic histopathological and immunohistochemical features. Recognition of this entity is important to ensure accurate diagnosis and to avoid unnecessary aggressive treatment. This case highlights the importance of considering lipoleiomyoma in the differential diagnosis of uterine fat-containing lesions, particularly in obese peri- or post-menopausal women.

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