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Uterine Lipoleiomyoma Presenting with Hematuria in a Postmenopausal Woman: A Case Report and Review of Literature

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Abstract: ***Lipoleiomyoma of the uterus is a rare benign mesenchymal tumor composed of an admixture of mature adipocytes and smooth muscle cells, predominantly seen in postmenopausal women. Most cases are asymptomatic or present with symptoms similar to conventional leiomyoma. Incidence is 0.03-0.4% .We report a rare case of uterine lipoleiomyoma in a 66-year-old postmenopausal woman who presented with hematuria, an unusual presenting complaint, along with multiple metabolic comorbidities. The diagnosis was established postoperatively on histopathological examination following total abdominal hysterectomy with bilateral salpingo-oophorectomy. This case highlights the diagnostic challenges and the importance of histopathology in confirming uterine lipoleiomyoma.***

Keywords: Lipoleiomyoma, Uterus, Postmenopausal, Hematuria, Leiomyoma

1. Introduction

Uterine lipoleiomyoma is an uncommon benign variant of leiomyoma characterized by the presence of mature adipose tissue intermingled with smooth muscle cells. The reported incidence ranges from 0.03% to 0.25%. These tumors are typically seen in postmenopausal women and are often associated with metabolic disorders such as diabetes mellitus, hypothyroidism, and hyperlipidemia. Preoperative diagnosis is difficult as imaging findings are often nonspecific, and definitive diagnosis is usually made on histopathological examination. We present a case of uterine lipoleiomyoma in an postmenopausal woman with an unusual presentation.

2. Case Report

A 66-year-old woman, presented with complaints of blood in urine for one month. She was apparently asymptomatic prior to the onset of symptoms. There was no history of postmenopausal bleeding, pain abdomen, burning micturition, bowel or bladder complaints, weight loss, easy fatigability, or palpitations.

Menstrual and Obstetric History
She attained menopause 15 years ago. Prior to menopause, she had irregular menstrual cycles and a history of intermittent oral contraceptive pill usage for cycle regulation. She had been married for 45 years and had a history of twin vaginal delivery.

Past Medical History
She was a known case of coronary artery disease with triple vessel disease and had undergone coronary artery bypass grafting in 2019 (three grafts). She was on regular treatment with aspirin, clopidogrel, and atorvastatin. She was also a known case of type 2 diabetes mellitus since 2022, on oral hypoglycemic agents. She had a history of hypothyroidism diagnosed in 2022 and had been on levothyroxine. There was no history of hypertension, tuberculosis, epilepsy, or prior blood transfusions.

3. Examination Findings

On general examination, HT-148 cm, WT-86kg, BMI-39.26.her blood pressure was 140/80 mmHg, pulse rate 104 beats per minute, respiratory rate 18 cycles per minute, and oxygen saturation 98% on room air.

Systemic examination revealed normal cardiovascular and respiratory findings. Abdominal examination was soft and non-tender. Per speculum examination showed an atrophic vagina and a healthy cervix; Pap smear was taken. Per vaginal examination revealed that the uterine size could not be adequately assessed due to obesity.

Investigations
Ultrasonography revealed a bulky uterus with a large, well-defined, homogeneously hyperechoic space-occupying lesion measuring 5.7 × 6.6 cm in the uterine body, suggestive of lipoleiomyoma. Ovaries and adnexa were not visualized. Additionally, right nephrolithiasis was noted measuring 9X7mm.

Based on clinical and radiological findings, a diagnosis of uterine lipoleiomyoma with right nephrolithiasis in a patient with diabetes mellitus and status post coronary artery bypass grafting was made.

Management
The patient was planned for total abdominal hysterectomy with bilateral salpingo-oophorectomy after appropriate preoperative evaluation and optimization.

Intraoperative Findings
Intraoperatively, the uterus was bulky, corresponding to 6–8 weeks gestational size. Both fallopian tubes and ovaries were atrophic. Cut section of the uterus revealed a well-circumscribed intramural mass measuring 7 × 7 cm. The endometrium was atrophic. Estimated blood loss was approximately 500 ml.

Figure 1: Gross specimen showed yellow white tumor mass in uterine myometrium

Histopathological Findings

Histopathological examination revealed a well-circumscribed neoplasm composed of spindle cells arranged in fascicles along with mature adipocytes. The spindle cells showed bland nuclear morphology with mild nuclear atypia, fine chromatin, inconspicuous nucleoli, and moderate eosinophilic cytoplasm. These spindle cells were interspersed between benign mature adipocytes. Features were consistent with a diagnosis of uterine lipoleiomyoma.

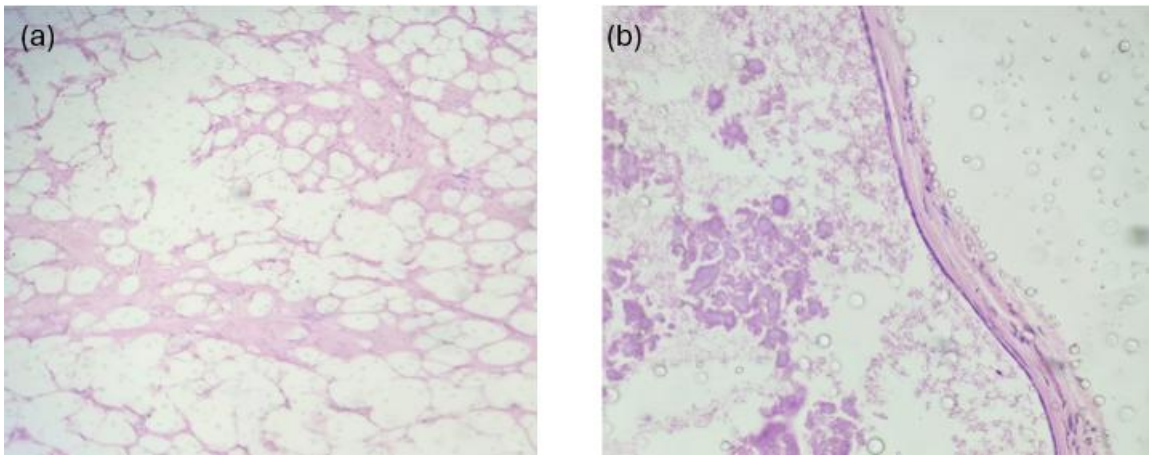

Figure 2: Microscopic findings- (a) histological examination of biggest nodule showing a mixture of mature adipocytes. (b)- spindle shaped smooth muscle cells in a whorled pattern with admixed adipocytes

4. Discussion

Lipoleiomyoma is a rare benign lipomatous tumor of the uterus, regarded as a variant of conventional leiomyoma, characterized histologically by an admixture of mature adipocytes and smooth muscle cells. The reported incidence ranges between 0.03% and 0.25%, making it an uncommon pathological finding in routine gynecological practice. These tumors predominantly occur in peri- and postmenopausal women, typically in the fifth to seventh decades of life, and are frequently associated with metabolic and endocrine abnormalities such as obesity, diabetes mellitus, hypothyroidism, hyperlipidemia, and hypertension. The present case fits well within this demographic profile, as the patient was a 66-year-old postmenopausal woman with diabetes mellitus and a history of hypothyroidism.

The exact histogenesis of uterine lipoleiomyoma remains uncertain and has been the subject of debate. Several theories have been proposed, including adipose metaplasia of smooth muscle cells, differentiation of pluripotent mesenchymal cells, fatty infiltration or degeneration of connective tissue, and misplaced embryonic fat cells. Immunohistochemical studies in previous reports demonstrating expression of smooth muscle markers such as desmin and smooth muscle actin in adipocytes lend support to the theory of metaplastic transformation of smooth muscle cells into adipocytes. Estrogen deficiency in postmenopausal women has also been implicated in abnormal lipid metabolism within smooth muscle cells, contributing to the development and continued growth of these tumors even after menopause.

Clinically, most lipoleiomyomas are asymptomatic and are often detected incidentally during imaging or surgery performed for other indications. When symptomatic, they usually present with features similar to conventional leiomyomas, such as pelvic pain, abdominal distension, urinary frequency, constipation, or abnormal uterine bleeding. Presentation with hematuria, as seen in the present case, is extremely unusual and has rarely been reported. In this patient, hematuria was likely multifactorial, possibly related to associated right nephrolithiasis, with the uterine lipoleiomyoma being an incidental but significant finding. Nevertheless, large uterine masses can cause pressure effects on adjacent pelvic organs, including the urinary tract, and should be considered in the differential diagnosis of unexplained urinary symptoms in postmenopausal women.

Radiological diagnosis of lipoleiomyoma can be challenging. On ultrasonography, these tumors typically appear as well-defined, homogeneously hyperechoic masses with minimal or absent vascularity on color Doppler imaging. Computed

tomography usually demonstrates a well-circumscribed uterine mass containing fat density, while magnetic resonance imaging is considered the most specific modality, showing high signal intensity on T1-weighted images with signal suppression on fat-suppressed sequences.However small lesions cannot be diagnosed pre operatively.

Despite these characteristic features, preoperative diagnosis is often missed, and most cases are diagnosed definitively only after histopathological examination, as occurred in the present case.

Grossly, lipoleiomyomas appear as well-circumscribed, yellow to gray-white masses within the myometrium. Histopathologically, they are composed of bland spindle-shaped smooth muscle cells arranged in fascicles interspersed with mature adipocytes, without significant mitotic activity, lipoblasts, or necrosis. The absence of marked nuclear atypia, increased mitotic figures, and infiltrative margins helps distinguish lipoleiomyoma from malignant lipomatous tumors such as liposarcoma. Although malignant transformation is exceedingly rare, isolated cases of liposarcoma arising in lipoleiomyoma have been reported, underscoring the importance of thorough histopathological evaluation and adequate sampling.

Management of uterine lipoleiomyoma depends on the patient's age, symptoms, size and location of the tumor, and suspicion of malignancy. Asymptomatic small lesions may be managed conservatively with regular follow-up. Surgical intervention is recommended in symptomatic patients, rapidly enlarging masses, or when malignancy cannot be excluded. In postmenopausal women, total abdominal hysterectomy with or without bilateral salpingo-oophorectomy is often preferred, providing definitive treatment and excluding coexistent gynecological malignancy. The prognosis following surgical management is excellent, with minimal risk of recurrence.

This case emphasizes the need to consider uterine lipoleiomyoma in the differential diagnosis of uterine masses in postmenopausal women, particularly those with associated metabolic disorders. Awareness of this rare entity can aid clinicians and radiologists in appropriate preoperative assessment and counseling, while histopathological examination remains the gold standard for diagnosis.

5. Conclusion

Uterine lipoleiomyoma is a rare benign tumor predominantly affecting postmenopausal /premenopausal women and often associated with metabolic disorders. Preoperative diagnosis is challenging, and histopathological examination remains the gold standard for diagnosis. Awareness of this entity is essential to avoid misdiagnosis and overtreatment. Surgical management offers excellent outcomes.

Declaration of Patient Consent
The authors certify that appropriate patient consent was obtained for reporting clinical information. Patient identity has been concealed.

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Nil.

Conflicts of Interest
There are no conflicts of interest.

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