PREMENOPAUSAL AND POSTMENOPAUSAL UTERINE LIPOLEIOMYOMA; A REPORT OF TWO CASES

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Abstract

Background & Objective: Uterine lipoleiomyoma are extremely rare variants of leiomyoma. Postmenopausal women frequently develop these types of tumors. but we also have a case of pre-menopausal woman. Ultrasound and CT scan findings may be nonspecific, but The use of MRI prior to surgery can be beneficial in detecting fatty tissue in the lesion. Diagnosis is usually confirmed postoperatively through histopathological examination.

Methods: Two cases were reported. A 60 years old postmenopausal woman with mass in the abdomen presented at Jinnah Hospital Lahore with differential diagnosis of Ovarian teratoma, Leiomyoma sarcoma, non-teratomatous lipomatous ovarian tumor, pelvic sarcoma, and lipomatous malignancy. Another case was reported involving a premenopausal woman who was 53 years old and presented with pelvic pain, irregular bleeding and a mass in the lower abdomen.

Result: Postoperative excision biopsy report showed a rare pathology of Lipoleiomyoma.

Conclusions: Lipoleiomyomas are clinically rare with most common occurrence in uterine corpus. They have excellent prognosis and but a long-term follow- up of patients is required to observe its potential for coexisting malignancies and metabolic disorders.

Keywords: Lipoleiomyoma, Fat cells, Premenopausal case, Postmenupausal case, MRI

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Lipoleiomyoma is a rare benign variant of leiomyoma with an incidence varying from 0.03% to 0.2%[1,2] They consist of mixture of smooth muscles, mature adipocytes and fibrous tissue.[3] In past regarded as lipomatous degeneration, adipose metaplasia, fatty metamorphosis, etc. but now regarded as Distinct True Neoplasia. Classically they are found in the uterus (subserosal, intramural, submucosal) with few case reports describing tumors in extra uterine locations such as cervix, intra-abdominal, ovary, broad ligament, retro-peritoneum and pre-peritoneal.[4,5] The clinical presentation of these tumors can vary based on their location; intra-abdominal tumors can cause symptoms due to mass effects. These tumors are typically found in postmenopausal women in their 60s and 70s, although they have also been reported in premenopausal women.[6] While the exact cause of fibroids is yet to be determined, there is evidence suggesting that the involvement of growth factors and estradiol is linked to their development.[7] Among the potential causes of lipoleiomyoma, the most likely one includes fatty meta-morphogenesis in smooth muscle cells of leiomyomas.[8]

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CLINICAL PRESENTATIONS

Case 1

A 60-year-old woman, gravida 4 para 4 presented to gynae OPD with complaints of pain in her lower abdomen with feeling of mass and heaviness. She had back pain for 3-4 months and it got severe about 1 month ago. She menopaused at the age of 58. Under examination, there was mass in the lower abdomen on

the right side. It had firm consistency with no discharge. Ultrasound was done and it was found that the mass was in the right broad ligament with no abnormality in the uterus. The uterus was smaller than normal. The mass was also attached to the uterus (outer wall) and the ovary, but it was separately distinguished. There were no signs of inflammation outside. Laboratory tests were done and the CBC was normal. Ovarian tumor was suspected but CA-125 was done and it showed normal range. Differential diagnosis included: Ovarian teratoma, Leiomyoma sarcoma, non-teratomatous lipomatous ovarian tumor, pelvic sarcoma, and lipomatous malignancy. Taking consent from the patient, staging laprotomy was done. The uterus was removed, measuring 8 × 8 × 4cm, and the cervix measured 2 × 2 × 1cm. The mass removed consisted of 2 nodular masses with measurements of 22 × 20 × 14 cm and 14 × 14 × 5 cm (Figure 2). The ovary was attached to the mass but was identified separately. The operation was done successfully and the vitals were all normal. Follow up for the women was taken for 3 to 4 months, and it showed no complications.

The nodular masses were taken to the pathology department. On gross examination, it was pale yellow with firm architecture. No necrosis, hemorrhage in the cystic area was found. Under histopathology report, it showed a group of adipocytes with interlacing bundles of spindle cells and nuclei were elongated with no pleomorphism. The mitosis figures were greater than 0.3 per high power field.

Case 2

Another case described a 53-year-old premenopausal woman gravida 5 para 4 presented with pain in her lower abdomen and pelvis, irregular bleeding, feeling heaviness which gradually worsened. Under examination, there was a mass present on the lower side of the abdomen. An ultrasound was done, showing a mass in the broad ligament of the uterus which was not attached to either the ovary or the uterus wall. There was no sign of inflammation outside. Laboratory tests were done. Both CBC was normal and CA-125 were normal. The differential diagnosis were ovarian teratoma, lipomatous sarcoma, non-teratomatous lipomatous ovarian tumor, pelvic sarcoma, and lipomatous malignancy. After taking consent from the patient, the surgery was done. mass was removed, measuring 17 × 16 × 13 cm (Figure 1). The operation was done successfully. Follow-up of the patient was taken for 3 to 4 months showing no complications. The mass was taken to the pathology department. On gross examination, the mass had vas-cularity but no haemorrhage. Under histopathology examination, it showed groups of adipocytes with inter-lacing bundles of spindle cells and nuclei were elon-gated. The mitotic figures were less than 3-7 per high power field.

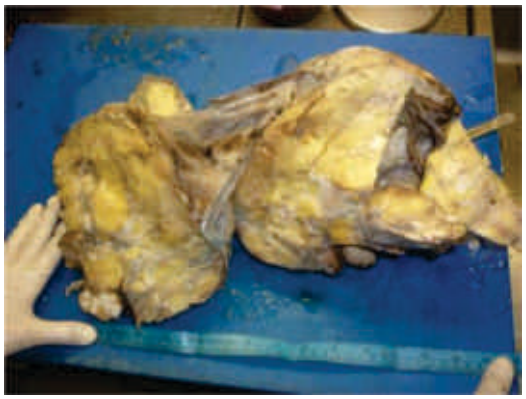

Figure 1: *Gross appearance of a lipoleiomyoma measuring 17×16× 3 cm in a 53-year-old premenopausal woman*

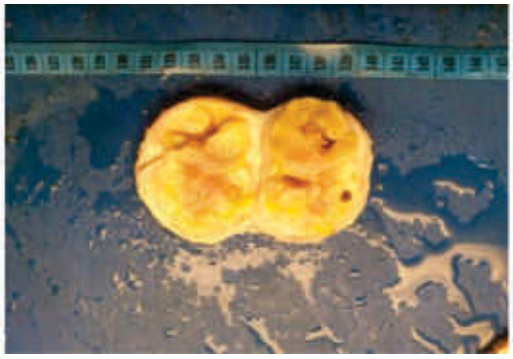

Figure 2: *Gross appearance of lipoleiomyoma in a 60-year-old post menopausal woman consisting of 2 nodular masses with measurements of 22×20×14 cm and 14 × 14 × 5 cm*

DISCUSSION

The lipomatous tumors of the uterus are highly uncommon entity and can be subdivided into three groups: pure lipomas made up of mature fat cells enclosed in a capsule, lipomas containing various mesodermal components (lipoleiomyomas, angiomyolipomas, and fibromyolipomas), and the rare malignant liposarcoma.[9]

Typically found in postmenopausal women who are overweight, uterine lipoleiomyoma is generally asymptomatic.[10] Similar to leiomyomas, lipoleiomyoma can cause symptoms such as an abnormal palpable mass, uterine bleeding, pelvic discomfort, urinary frequency and incontinence in patients. Imaging diagnosis is an important tool in diagnosis. In identifying the fatty nature of the lesion, magnetic resonance imaging (MRI) can be more informative than ultrasound and CT scans, which may yield nonspecific findings. While MRI is the recommended imaging technique for identifying lipoleiomyoma, the majority of cases are diagnosed by histopathology following surgery.[12] Several theories have been suggested regarding the formation of lipoleiomyoma, such as metaplasia of connective tissue or smooth muscles into fat cells, differentiation of embryonic fat cells that were misplaced, migration of pluripotent cell along the uterine vessels and nerves, and degeneration of connective tissue or infiltration of fats.

According to a study[13], the immuno-reactivity of fat cells with S-100,actin,desmin and vimentin provides evidence in favor of the hypothesis that smooth muscle cells can directly transform into fat cells. Cytogenetic investigations[14] of uterine lipoleiomyoma have revealed a pathogenic origin that closely resembles that of a typical leiomyoma. According to some researchers the development of uterine lipoleiomyoma may be influenced by a hyperestrogenic state resulting from metabolic disorders such as post-menopausal changes in lipid metabolism, hyperlipidemia, diabetes mellitus, hypothyroidism and toxemia during pregnancy. While lipoleiomyoma is commonly observed in older post-menopausal women[19], we report a case in a pre-meno-pausal patient. This observation could lend support to the theory that hormonal factors may contribute to the development of these rare tumors. Additional research is needed to clarify the potential contribution of hormonal factors and to improve our understanding of the pathophysiology of these uncommon tumors. Despite being a rare tumor, lipoleiomyoma is generally considered benign and does not pose a risk of local recurrence or distant metastasis after surgical removal.[15] But, malignant transformation is also demonstrated by reporting a lipoleiomyoma arising from leiomyoma.[16] Distinguishing a lipoleiomyoma from a cystic ovarian teratoma can be difficult, especially when the lipoleiomyoma is located near the ovary on the posterior wall of the uterus[18], as the latter is the most common pelvic fatty tumor in females[17].

It is crucial to accurately identify these tumors as their management can vary significantly. While isolated lipomatous tumors like lipoleiomyoma are typically benign and do not affect mortality, they may not require surgery if asymptomatic. In our patients, total hysterectomy was done in first case and myomectomy in second case and no evidence of malignancy in the female reproductive system was found. In view of complex histogenesis, consideration of malignancies and metabolic disorders in patients of uterine lipoleiomyoma, a much larger numbers of case studies with to elucidate the histogenesis of these tumors, immunohistochemical analysis and long-term follow-up may be necessary. Therefore, it is crucial for medical professionals to be knowledgeable about this pathology since its clinical manifestation resembles that of leiomyoma, but it exhibits distinctive radiological, histological and immunohistochemical features. Physicians should keep this rare condition in mind while considering differential diagnoses.

CONCLUSION

A rare benign lipomatous tumor, lipoleiomyoma; most commonly occuring in uterine corpus. Despite the potential usefulness of MRI for preoperative diagnosis, histopathological examination remains the mainstay for diagnosing most cases of lipoleiomyoma. It

has a favorable prognosis, doesn't affect mortality and if it's not causing any symptoms, surgery is not required. Therefore, it's crucial to keep it in mind while making a differential diagnosis. Histogenesis is controversial. A thorough clinical and pathological evaluation, as well as mandatory follow-up, are necessary in cases of lipomatous uterine tumors with coexisting metabolic disorders and gynecological malignancies. Knowledge of the tumor's characteristics on imaging can contribute to improve preoperative diagnosis and management.

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