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Case Report

Multiple lipoleiomyoma of the uterine cervix in premenopausal woman: a case report

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ABSTRACT

Leiomyoma is a most frequently occurring benign mesenchymal tumor of monoclonal origin arising from the smooth muscle cells of the uterus. There are different subtypes of leiomyoma based on their morphological features. Lipoleiomyoma is a rare distinct variant of leiomyoma with a heterogenous cut surface comprising soft yellow areas of fatty tissue intermixed with firm rubbery areas of smooth muscle tissue. We report a case of a 35-year-old multipara premenopausal woman who presented with abdominal distension and chronic pelvic pain. Clinical examination gave an initial impression of a teratoma. Multiple large heterogenic cervical masses of varying sizes were noted on ultrasonography. Histopathological examination of the surgical resection specimen revealed multiple mature lipoleiomyomas. This case report is unique due to its occurrence in premenopausal women and its location in the cervix.

Keywords: Lipoleiomyoma, Leiomyoma, Fibroid, Uterus

INTRODUCTION

Lipoleiomyoma is an uncommon variant of the most frequently occurring benign mesenchymal neoplasm of the uterine leiomyoma.[1] The neoplasm has an estimated incidence rate ranging between 0.03% and 0.2%.[1,2] However their location in the cervix is unusual. Clinically, most of the patients report no symptoms and usually do not require intervention. Palpable pelvic mass, abdominal pain, abnormal uterine bleeding, frequent micturition, menstrual irregularities, and infertility are commonly described clinical manifestations in symptomatic patients.[3] Larger tumors may require surgical therapy.[1] Uterine lipoleiomyoma is seen more often in perimenopausal or postmenopausal obese women.[4] Even though these tumors are benign, instances of uterine lipoleiomyomas coexisting with other metabolic disorders, aberrant estrogen levels, and other gynaecological malignancies have been published in the literature.[4] Although there are several ongoing studies, the exact histogenesis is still a matter of debate.

A detailed history, clinical examination, radio imaging studies, histology, and immunohistochemistry are the main tools used in the diagnosis of lipoleiomyoma. The microscopic examination may reveal a benign mesenchymal lesion composed of smooth muscle and fibroadipose tissue. This paper presents the case of a 35-year-old female diagnosed with lipoleiomyoma of the cervix.

CASE REPORT

A 35-year-old female gravida 2, para 2 presented with 4 weeks of pelvic pain, frequent micturition, per vaginal bleeding and abdominal distension. Routine haematological and serological examinations were within normal range. The report of serum biomarkers was not

available till the time of surgery. Multiple heterogeneous hypoechoic pelvic masses imposing a mass effect on the uterus were discovered by pelvic ultrasonography. Computed tomography revealed multiple hyperechoic masses on the posterior wall of the cervix resembling fibroids. No further radiological work-up was done. The patient had undergone open cystectomy of the left ovarian cyst and laparoscopic cholecystectomy for gallstone. HPE report of the same was not available. No malignancy or atypia was reported on the patient's cervical pap smear and endometrial biopsy. Intra-operation abdominopelvic examination revealed multiple large fibroids on the posterior wall of the cervix. Surgical excision of the same was done, and the specimen was sent to our lab for histopathologic evaluation. Multiple soft tissue masses were received with the largest size being 22×14×4 cm. On gross examination, the masses were tan, and white in appearance with heterogeneous patches. The tumor had a grey-white, whorled appearance with occasional yellowish and myxoid-like areas on the cut surface. However, no haemorrhage or necrosis was noted. The uterine surface was unremarkable. No polyp or tumor was noted within the endometrial cavity. Microscopy of the larger masses revealed tumor composed of intersecting bundles of spindle-shaped smooth muscle cells with bland morphology displaying minimal nuclear atypia admixed with the lobules of mature adipocytes suggesting a pathological diagnosis of lipoleiomyoma. No necrosis or mitosis was seen. Other smaller masses displayed typical features of leiomyoma. Bilateral ovaries showed cystic follicles. Endometrium showed glands and stroma in the secretory phase. The myometrium and fallopian tube displayed unremarkable histology.

Figure 1: Cut surface of the tumor showing yellowish-white areas.

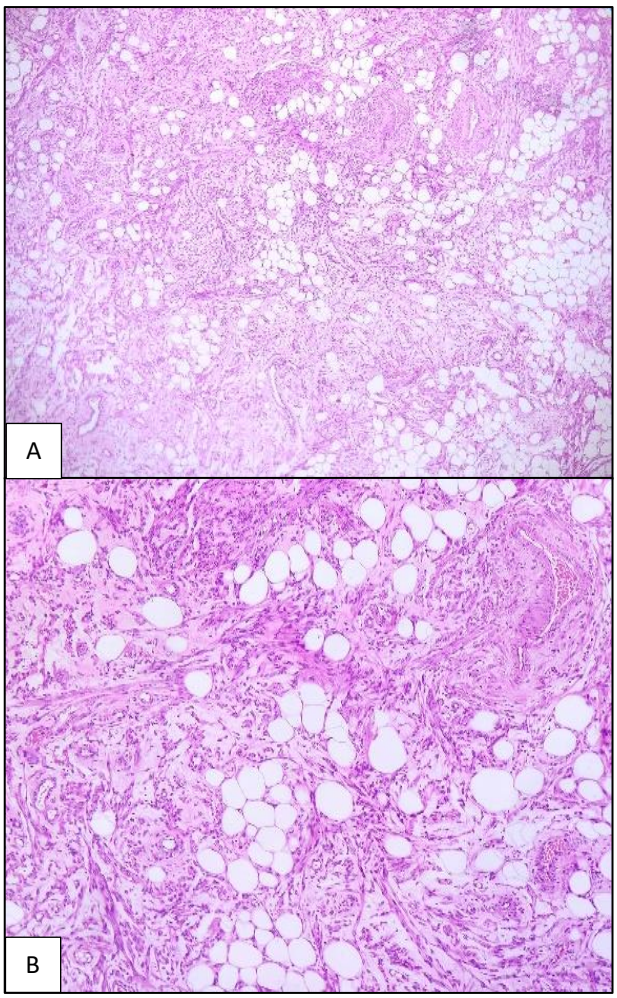

Figure 2: (A) Fascicles of smooth muscle cells admixed with lobules of mature adipocytes (H and E, 100x); (B) The smooth muscle spindle cells with bland morphology displaying minimal nuclear atypia (H and E, 200x).

DISCUSSION

Uterine lipoleiomyomas are a rare subset of uterine leiomyoma which has been reported as the most frequently occurring benign pelvic mass. Their location in the cervix is infrequent.[1-4] It was first reported by Meis and Enzinger in 1991 as the uterine counterpart of myolipoma of soft tissue.[5] Although several theories have been put up, their pathophysiology is still unknown. Fatty infiltration, degeneration, the iatrogenic introduction of adipose tissue to the myometrium, and metaplastic transformation of uterine smooth muscle cells into adipose cells, in addition to the transformation of undifferentiated mesenchymal cells, are a few of the examples of theories described previously.[6] Hormonal stimulation especially, estrogen, growth hormone and progesterone, has been suggested as a possible cause of the transformation of smooth muscle cells.[1] Alteration in lipid metabolism and other non-lipid mechanisms happening during menopause might play a significant role in the development of lipomatous changes in leiomyoma. Several lipid metabolism disorders or other associated conditions, which especially originated from

estrogen deficiency as can be observed in peri- or postmenopausal, reasonably promote the abnormal intracellular storage of lipids.[7] A retrospective study by Akbulut et al on 76 cases is the largest study ever conducted on lipoleiomyoma. The study found that 53 patients of LL had different types of lesions associated with hyper-estrogenic status such as adenomyosis, endometriosis, endometrial hyperplasia, polyps, complex atypical endometrial hyperplasia, and gynecologic carcinomas. They suggested estrogenic manifestation as an important factor in the development of lipoleiomyoma.[4] No such history was available in our case. Akbulut et al and Wang et al in their study observed that these neoplasms may occur in association with malignancies of the uterine cervix.[4,8]

Clinical presentation and radio imaging combined with histopathological evaluation are essential for the diagnosis of lipoleiomyoma. Immunohistochemistry can be used as an adjunct to highlight the mature adipocyte and smooth muscle cells. The differentiation of these neoplasms on ultrasonography and computed tomography can be difficult. Lipoleiomyoma, mature ovarian teratoma, non-teratomatous lipomatous ovarian tumor, benign pelvic lipoma, malignant degeneration of ordinary leiomyomas, liposarcomas and lipoblastic lymphadenopathy shall be considered differential diagnoses when dealing with a fatty lipomatous mass in the pelvis.[9,10] Angiomyolipoma, fibrolipoma and myelolipoma are rare benign lipomatous tumors of the uterus.

Lipoleiomyomas are comparable to leiomyomas clinically and typically do not require treatment when they are small and asymptomatic. Treatment for lipoleiomyoma is similar in that it is based on the location and size of the lesion as well as the clinical symptoms.[11] Although lipoleiomyomas tend to have a benign clinical course with favourable outcomes, cases of lipoeliomyosarcomas have also been reported in the literature.[12] Unlike many other previous studies, the patient in our case report was premenopausal.[4,11,12] Also, the patient presented with acute symptoms and required immediate interventions leading the clinicians to raise the suspicion of a malignancy. It is even rarer due to the location in the cervix. Large size and heterogenous gross appearance gave an initial impression of malignancy. However, on microscopy, a diagnosis of lipoleiomyoma was concluded.

CONCLUSION

Cervical lipoleiomyomas are exceedingly rare. They may grow into large masses requiring urgent clinical attention and surgical intervention. It's critical to distinguish lipoleiomyoma from tumors that require excision such as teratoma. Additionally, it is crucial to investigate other malignant and metabolic conditions that may be associated with lipoleiomyoma in each case to ensure prompt management and better survival rates.

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