Cervical Lipoleiomyoma: A rare variant of uterine leiomyoma

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Case 16919

Clinical History:

A postmenopausal 45-year-old woman presented with abnormal uterine bleeding; with passage of clots and abdominal discomfort for past 4 months. She denied any dysuria, altered bowel habits or constitutional symptoms. Clinical examination revealed normal vital signs with soft abdomen and no palpable masses. Gynecological examination shows a non-tender cervical mass in posterior fornix with blood clots.

Imaging Findings:

Transabdominal ultrasound revealed a markedly echogenic lesion with no distal acoustic shadowing, measuring 8.2x8.0 cm showing no vascularity in posterior wall of cervix, bulging into the posterior fornix, situated posterior to the urinary bladder (Figure 1). MRI was performed with a Gold Seal Signa™1.5T HDxT with slice thickness 5 mm, intersection gap was 1 mm, field-of-view 48-cm. Sagittal, axial T1(TR range/TE range,500-650/15-60) and T2- 4,000-6,500/50-106) weighted and T1 FAT SAT images were obtained. Her MRI (pelvis with contrast) showed a well-defined lesion of 8.6 cm × 5.8 cm × 6.9 cm seen in the posterior myometrium. Lesion is heterogeneously hyperintense with multiple hypointense areas seen within on T1 and T2 weighted sequences. Lesion shows suppression on FATSAT images suggestive of fat content within with heterogenous enhancement on post-contrast images (Figure 2a,2b,2c,2d). Post hysterectomy specimen revealed a large, well-circumscribed, solid mass with yellowish cut surface (Figure 3). On microscopy, interlacing fascicles of smooth muscle with interspersed lobules of adipocytes seen, confirming the pathological diagnosis (Figure 4).

Discussion:

Lipomatous lesions are unusual benign neoplasms [1,2]. Approximately 180 cases are reported in the literature occurring in asymptomatic obese perimenopausal/ menopausal women of age group of 50-70 years, most being retrospectively diagnosed after surgery [3,4]. It is usually well-circumscribed with a thin connective tissue capsule, average size is 5-10 cm [5].

Pathologically, lipomatous lesions are categorised into three groups [6,7], first being pure lipoma [3]. The second one consists of lipoleiomyoma [4,7,8,9], angiomyolipoma [10], fibromyolipoma [11], and other mixed tumours. The third and the rarest group is of malignant neoplasm liposarcoma [12]. Lipoleiomyoma being the most common. Origin of lipomatous lesions is controversial, with three theories being common: direct metaplasia of smooth muscle or connective tissue into fat cells, differentiation from misplaced embryonic fat cells, and proliferation of accompanying perivascular fat cells into the blood vessels [2,5]. Most cases are asymptomatic, depending on size and location, some presenting with symptoms secondary to mechanical pressure on adjacent organs as dysuria, urgency, urethral or ureteral obstruction, dyspareunia, or obstruction of the cervix.
Diagnosis of these lesions are based on radio imaging and histopathology. The differentiation of these neoplasms on ultrasonography and computed tomography scans can be difficult. The characteristic sonographic appearance of a lipoleiomyoma is the presence of a echogenic mass with hypoechoic rind, which is presumed to represent a layer of myometrium surrounding the fatty component. Various case reports have described the MRI finding of lipoleiomyomas, describing lesion containing abundant fat tissue and volume of mesodermal tissue [4,7,8,9]. This entity shows well-demarcated mass that is hyperintense with hypointense amorphous bundles on T1- and T2-weighted images with chemical shift artefact. It is difficult to differentiate lipoleiomyomas from other lipomatous lesions (lipoma, angiomyolipoma, fibroma lipoma, myelolipoma, liposarcoma,). On MRI, pure lipoma shows a homogeneous mass with a large amount of fat and signal decrease in the whole mass on fat-saturated images with no nonadipose component. On the other hand, lipoleiomyomas demonstrates heterogeneous signal intensity with fat and non-fat soft tissue content, and decrease in signal only in part of the lesion on fat-saturated images [13,14] with enhancing septa. MRI helps in discerning the various layers within the uterine wall, distinguishing between adnexal tissues, uterus and pelvic fat. MRI displays the internal architecture of fatty tumours and peripheral low signal intensity rim corresponding to thin fibrous pseudo capsule which is not demonstrated on CT scan [14]. Management includes hysterectomy, uterine artery embolisation and myomectomy, depending upon clinical presentation, obstetric history, location and number of lesions.

To conclude, cervical lipoleiomyomas are exceedingly rare and often misdiagnosed entities, with distinct radiological characteristics and excellent prognosis [13]. Diagnosis is made on pelvic ultrasound and MRI. Although MRI with fat suppression sequences can be useful modality for preoperative diagnosis, but most cases are diagnosed postoperatively on histopathology examination.

**Differential Diagnosis List:** Cervical Lipoleiomyoma, Leiomyoma, Lipoma, Angiomyolipoma, Fibromyolipoma, Myelolipoma, Liposarcoma

**Final Diagnosis:** Cervical Lipoleiomyoma

**References:**


Brandfass RT, Everts-Suarez EA. Lipomatous tumors of the uterus: a review of the world's literature with report of a case of true lipoma. Am J Obstet Gynecol 1955; 70:359-367 [Crossref] [Medline] [Google Scholar] (PMID:13238471)


Description: Images of trans abdominal ultrasonography in axial (A) and sagittal (B) views showing a well circumscribed markedly hyperechoic mass encased by a hypoechoic rind arising from posterior cervical wall. Origin: Department of Radiology, Chattarpati Shivaji Subharti Hospital, Meerut, U.P., 2020.
Description: Axial MRI image shows a lesion in the posterior wall of cervix heterogeneously hyperintense with multiple hypointense areas seen within on T1 and T2 weighted sequences with few hypo intense septations. 2c:Lesion shows areas of suppression of signal intensity in sagittal T1-weighted fat suppressed sequence, suggestive of fat component homogeneous hyperintense lesion in left side of uterine fundus. 2d: Heterogenous enhancement is seen after intravenous gadolinium is administered with thin enhancing septa inside the lesion. Origin: Department of Radiology, Chattarpati Shivaji Subharti Hospital, Meerut, U.P., 2020
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Figure 3

Description: Gross specimen after undergoing total abdominal hysterectomy showing a large well circumscribed solid yellowish mass measuring 9 x 7 x 6 cm arising from cervix which showed areas of yellow fat on cut section (not shown in image) Origin: Department of Radiology, Chattarpati Shivaji Subharti Hospital, Meerut, U.P., 2020
Description: Microscopic image through growth arising from cervix of post hysterectomy specimen consisting of interlacing fascicles of smooth muscle cells with interspersed lobules of adipocytes divided into lobules. Origin: Department of Radiology, Chattarpati Shivaji Subharti Hospital, Meerut, U.P., 2020