Pure uterine lipoma
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Section: Genital (female) imaging
Area of Interest: Genital / Reproductive system female
Procedure: Diagnostic procedure
Technique: CT
Special Focus: Neoplasia Case Type: Clinical Cases
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Patient: 69 years, female

Clinical History:

A postmenopausal woman with unremarkable past medical history sought medical attention because of sudden vaginal bleeding. Hysteroscopy disclosed polypoid endometrial thickening with biopsy diagnosis of well-differentiated adenocarcinoma.

Imaging Findings:

Preoperatively, the patient underwent thoraco-abdominal CT (Fig. 1) for carcinoma staging. The uterine fundus appeared enlarged due to the presence of a 4 cm subserosal mass with fat attenuation (average -70 Hounsfield Units), a few hairline septa and absent contrast enhancement, contained within normally enhancing myometrium and causing compression of the uterine cavity. The endometrial neoplastic focus was not clearly recognizable.

Magnetic resonance imaging (MRI) was not performed since the patient complained of claustrophobia.

Laparoscopic surgery included total hysterectomy and bilateral salpingo-oophorectomy, and the postoperative course was uneventful.

Histopathology reported a 4 cm yellowish nodule at fundus consistent with pure uterine lipoma, a pT1aN0 well-differentiated (G1) superficial endometrioid adenocarcinoma measuring 0.3 mm thickness and 1.6 cm length, and absence of neoplastic cells in peritoneal lavage.

Discussion:

Uterine fatty tumours (UFT) are unusual (overall incidence 0.03%-0.2%) benign neoplasms characterised by the presence of adipose tissue, which encompass lipomas, mixed lipomas (lipoleiomyoma and lipofibroma) and the exceptional liposarcoma. Lipoleiomyoma represents the commonest entity and contains variable amounts of fat, fibrous tissue and smooth muscle; conversely pure uterine lipomas (PULs) are extremely rare and composed of encapsulated adipose tissue interspersed by thin fibrous septa with rare muscle cells at the periphery. The pathogenesis of UFT is debated and poorly understood since adipose tissue is normally not present in the uterus: one of the most accepted theories involves metaplasia of smooth muscle cells or connective tissue into adipocytes; alternatively UF may represent degenerated leiomyomas. Occurring in post-menopausal women between 50-70 years of age, UFT are generally asymptomatic and therefore incidentally detected. Alternatively, symptoms may mimic those of leiomyomas, including palpable mass, urinary frequency, constipation, pelvic discomfort or uterine bleeding [1-5].

Most usually PULs are solitary intramural lesions of variable size in the uterine corpus, but can be subserosal or submucosal, located anywhere in the uterus or cervix and occasionally multiple. Concomitant leiomyomas or carcinomas may be present [1, 3, 6].

At ultrasound UFT typically appear as nonspecific well-defined hyperechoic lesions reflecting their fat content, usually partially encased by a hypoechoic rim corresponding to compressed myometrium. As this case exemplifies,
multiplanar imaging with CT allows confident diagnosis and localization of UFT as well circumscribed masses with fat attenuation (-40…-100 HU), thin septa and absent contrast enhancement. The preferred imaging modality to stage uterine tumours, MRI provides excellent tissue characterization, including demonstration of the presence of adipose tissue with T1- and T2-weighted high signal intensity, chemical shift artefact at in-phase versus out-phase images, and signal loss on fat-saturated techniques. Furthermore, cross-sectional CT or MRI imaging can allow differentiation of PUL, which appears rather homogeneous, from lipoleiomyoma which is relatively heterogeneous with enhancing septa [1, 7, 8].

Asymptomatic PUL can be managed conservatively because of its benign behaviour and uneventful clinical course. Although very rare, correct diagnosis of UFT is important to avoid unnecessary surgery. The differential diagnosis should consider uterine sarcoma and other fat-containing lesions of the female pelvis requiring surgery such as ovarian teratoma [1, 3, 7, 8].

**Differential Diagnosis List:** Pure uterine lipoma associated with endometrioid adenocarcinoma of the uterus., Uterine lipoleiomyoma, Uterine leiomyoma, Adenocarcinoma of the uterus, Benign ovarian teratoma, Malignant degeneration of ovarian teratoma, Pelvic lipoma, Liposarcoma, Extra-adrenal myelolipoma, Lipoblastic lymphadenopathy, Retroperitoneal cystic hamartoma

**Final Diagnosis:** Pure uterine lipoma associated with endometrioid adenocarcinoma of the uterus.

**References:**

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