Rare disease

A pure uterine lipoma: a rare, benign entity

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Correspondence to Dr Shalini Manoja Wijesuriya, shalini.wijesuriya@doctors.org.uk**Summary**

A 71-year-old woman presented with a history of left loin pain and where renal calculi were clinically suspected. As part of her initial investigations, she had an ultrasound and an unenhanced CT of her abdomen. Within the body of the uterus, there was a 2.5 cm well demarcated, hyperechoic mass. The CT demonstrated a well-defined, round lesion within the uterus, of fat attenuation. The overall appearances were in keeping with a benign uterine lipoma. Uterine lipomas are rare, benign tumours that are part of a spectrum of uterine fatty tumours. Although they have characteristic imaging findings, they can be misdiagnosed and confused with more sinister neoplasms. The authors present a case of a pure uterine lipoma and discuss the imaging features on ultrasound, CT and MRI. The authors hope that highlighting the radiological characteristics of this benign entity will aid confident diagnosis and avoid unnecessary investigations or surgery in this patient population.

BACKGROUND

Uterine lipomas are rare, benign tumours composed of adipose tissue. Although they have characteristic imaging findings, they can often be misdiagnosed and confused with more sinister neoplasms. We hope that highlighting the radiological characteristics of this benign entity will aid confident diagnosis and avoid unnecessary investigations or surgery in this patient population.

CASE PRESENTATION

A 72-year-old woman presented with a history of left loin pain and where renal calculi were clinically suspected. As part of her initial investigations she had an

ultrasound and an unenhanced CT of her abdomen. The transabdominal ultrasound demonstrated a lobulated uterus containing small fibroids. Within the body of the uterus, there was a 2.5 cm well demarcated, hyperechoic mass (figure 1). No soft tissue component or additional adnexal masses were demonstrated. The unenhanced CT demonstrated a well-defined, 13x9 mm, round lesion within the uterus, with Hounsfield units of -100 (figure 2). The appearances on CT corroborated those on ultrasound and were in keeping with a benign fatty lesion, a uterine lipoma. As the ultrasound and CT findings were definitive, MRI characterisation was not necessary. No follow-up was required.

Figure 1 Ultrasound: transabdominal views of the pelvis: 2.5 cm, hyperechoic focus within the uterine wall.

Figure 2 (A,B) Axial and sagittal views of an unenhanced CT of the abdomen and pelvis: a well-defined, low-density lesion of fat attenuation within the uterine corpus. This is typical for a lipoma.

DISCUSSION

A lipoma is a benign tumour composed of mature adipose tissue. While lipomas by themselves are quite common, a uterine lipoma is very rare. This entity was originally described in 1816¹ and since then, only a small number of cases have been described in the literature worldwide. The reported incidence is approximately 0.03–0.2%.^{2 3}

Uterine lipomas fall under the umbrella of uterine fatty tumours (UFT).⁴ UFTs are a range of benign tumours that may be composed entirely of adipocytes or may be intermixed with connective tissue or smooth muscle. Due to the range of histopathological possibilities based on the relative proportion of fat, smooth muscle and fibrous tissues, UFTs encompass a spectrum that includes pure lipomas, lipoleiomyomas and lipofibromas. It is suggested that in pure lipomas, smooth muscle fibres should only be present at the periphery of the lesion.⁵

It is still controversial as to how lipomas can arise from the uterus, where fatty tissue does not normally exist. Some theories include erroneous inclusion of fat cells during embryogenesis, migration of adipocytes via the uterine vessels, abnormal metaplasia or inclusion during surgery.^{5 6}

The patient population that are affected are postmenopausal women over the age of 50 years. They are usually asymptomatic but can present with vaginal bleeding or pelvic discomfort.⁵ These presenting features mirror those of leiomyomas and indeed, the two may coexist, as was in our case. Notably, leiomyomas commonly present in younger, premenstrual women. Uterine lipomas are usually solitary lesions, but can be multiple. They mostly occur in the body of the uterus (corpus). While the majority are intramural, submucosal and subserosal tumours have been described.³ They can vary in size and can be quite large.

Before wide use of imaging, uterine lipomas were mainly diagnosed on postsurgical specimens or at autopsy.⁵ Modern radiological imaging can now be used to aid diagnosis, obviating the need for an unnecessary operation. As they are benign, they require no follow-up or treatment,

unless they are symptomatic. Malignant conversion of these tumours is rare.⁴

On ultrasound, uterine lipomas appear as well-defined and hyperechoic lesions, in keeping with their fat content. Furthermore, they are avascular. The smooth muscle component that may be present on the periphery of the tumour can appear sonographic as a hypoechoic rim.⁵ A fibroid with calcification can mimic a hyperechoic lipoma. Therefore, in some cases, further confirmation by MRI is necessary. On CT, the lesion demonstrates fat attenuation and does not enhance. MRI is a favourable imaging modality as it is non-ionising, provides excellent detail of the internal architecture of these tumours as well as the uterine layers. A uterine lipoma would appear high signal on T1 and T2 sequences and would demonstrate signal drop-out on fat suppression sequences. Chemical shift artefact, on out of phase imaging, aids in confirming the tissue diagnosis. Unlike CT, MRI can accurately confirm their uterine origin and can differentiate them from an adnexal mass. Furthermore, internal components like septations are demonstrated on MRI.⁵ A pure lipoma should not have a soft tissue component.

Learning points

- ▶ Uterine lipomas are rare benign entities with characteristic radiological features.
- ▶ Their fat content can be demonstrated easily on first-line imaging, which is ultrasound.
- ▶ MRI is ideal for demonstrating the internal composition of the tumour and confirming the presence of fat.
- ▶ An accurate diagnosis in postmenopausal women who present without sinister symptoms or where a uterine lipoma is an incidental diagnosis can put the patient at ease and obviate the need for unnecessary surgery.

Competing interests None.

Patient consent Obtained.

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