CASE OF THE MONTH

Incidental uterine mass

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A 60-year-old female patient underwent a routine transabdominal and transvaginal sonography after resection of an endocervical polyp (Figures 1–3). What is the diagnosis?

Figure 1. Transabdominal ultrasound: sagittal view.

Figure 2. Transvaginal ultrasound: longitudinal view.

Figure 3. Transvaginal ultrasound transverse view with power Doppler.

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Findings

Transabdominal sonography (Figure 1) showed a hyperechoic mass that appears to arise from the uterine fundus. Transvaginal sonography (Figure 2) demonstrates an intramural uniformly hyperechoic mass with posterior sound attenuation at the uterine fundus. Power Doppler assessment (Figure 3) showed no detectable internal flow. The appearances are consistent with a lipomatous tumour

of the uterus. MRI (Figure 4) further confirms its uterine origin, and the mass demonstrates a signal intensity similar to that of subcutaneous fat on all pulse sequences.

Diagnosis: lipoleiomyoma

Lipoleiomyoma is considered to be a consequence of fatty metamorphosis of a uterine leiomyoma [1] and

(a)

(b)

(c)

Figure 4. MRI of the pelvis: (a) sagittal T_2 weighted sequence (repetition time/echo time (TR/TE), 7774 ms/125 ms; slice thickness, 3 mm; matrix size, 256 × 256); (b) axial T_1 weighted sequence (TR/TE, 505 ms/12 ms; slice thickness 2.5 mm; matrix size, 512 × 512); and (c) axial T_1 weighted fat-suppressed sequence (TR/TE, 673 ms/12 ms; slice thickness, 2.5 mm; matrix size, 512 × 512). The images show the intramural mass (arrows) within the uterine fundus, with a signal intensity similar to that of the subcutaneous fat on all pulse sequences.

usually occurs in post-menopausal women. The reported incidence of uterine lipomatous tumours ranges from 0.03% in hysterectomy specimens to 0.20% in uterine leiomyomas [2, 3]. Tumour size can vary from 3 mm to 55 cm, and may be associated with metabolic disorders such as hypothyroidism and diabetes mellitus [4]. On ultrasonography, lipomatous tumours can have variable echogenicity. The typical ultrasound appearance is a mass of increased echogenicity. They frequently have a surrounding hypoechoic rim, which represents the adjacent compressed myometrium (as seen in our case). The hyperechogenicity of lipomatous masses depends primarily on the conspicuity of the acoustic interfaces caused by fat contrasting with other types of tissue [5]. Histologically, they are composed of variable amounts of smooth muscle, fat cells and fibrous tissue. These tumours can sometimes demonstrate heterogeneity and it has been suggested that this is related to their histological pattern and also to the number of tissue interfaces. These tumours do not demonstrate internal colour flow and this correlates with the histological appearances that show poor intratumoural vascularisation [6]. The main ultrasound differential diagnosis of an echogenic gynaecological mass is an ovarian dermoid, as the Rokitansky protuberance (dermoid plug) with associated posterior acoustic shadowing can have a similar appearance to a uterine lipoleiomyoma. This confusion will arise only in the presence of a large mass, especially in the presence of a closely applied uterus and ovary. Distinguishing these two lesions is relevant to clinical management, as uterine lipomatous tumours require surgical excision only if they are symptomatic, whereas ovarian dermoids will frequently require treatment if they are of a significant size to prevent ovarian torsion. Accurate identification of the uterine origin of a hyperechoic mass can usually be achieved easily with transabdominal and transvaginal ultrasound. MRI will confirm that the uterus is the site of origin and can

characterise the lesion with certainty by demonstrating the presence of fat within the mass, which has a signal intensity similar to subcutaneous fat on all pulse sequences [7]. However, the MRI appearances are variable and depend on the volume of mesodermal tissue (*e.g.* fat, smooth muscle, connective tissue and stromal degeneration) that makes up the lesion [8]. On CT, a well-circumscribed predominantly fatty mass with areas of non-fat soft-tissue density arising from the uterus can be seen.

In conclusion, this case acts as a reminder of a rare benign uterine tumour and its typical appearances on sonography.

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