Contrast-enhanced ultrasound appearance of primary epiploic appendagitis

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Primary epiploic appendagitis (PEA) is a rare, benign self-limiting condition more often secondary to torsion or spontaneous venous thrombosis of a draining vein of the epiploic appendages; symptoms can mimic an acute abdomen [1]. The diagnosis is based on abdominal computed tomography or ultrasound [2–5]. More recently, a fairly characteristic contrast-enhanced ultrasound (CEUS) feature was described as a central area of no enhancement [6].

A 38-year-old man with a body mass index of 27 and without any significant clinical history was admitted to our hospital for the abrupt onset of acute localised pain in the left lower quadrant of the abdomen. The patient was afebrile and had no intestinal symptoms. The blood tests showed no abnormalities.

Grey-scale ultrasound examination focused on the point of maximal tenderness revealed a well-delineated, oval, and homogeneously hyperechoic intra-abdominal mass, with a maximum diameter of 30 mm. The mass was

adjacent to the abdominal wall and located anteromedial and adherent to the left colon. It was uncompressible and no thickening of the left colon wall was identified (Fig. 1).

The mass was evaluated with CEUS: a blood pool second-generation contrast agent (SonoVue[®], Bracco, Milan, Italy) and a Philips iU22 ultrasound machine (Philips Healthcare, Best, The Netherlands) with a contrast harmonic imaging technology and a 3–9 MHz linear probe were used.

The real-time images were displayed on a split screen: the left side displayed the contrast harmonic imaging, allowing the visualisation of the microvascularisation

Fig. 1 Grey-scale ultrasound focused on the point of maximal tenderness. An oval hyperechoic mass is adherent to the left colon wall (arrow). Arrowheads mark the boundary of the mass

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Fig. 2 Contrast-enhanced ultrasound (arterial phase). The *left* image shows a thick rim of enhancement and a hypoechoic central area of the mass. On the *right* side is displayed the grey-scale image. *Arrowheads* mark the boundary of the mass

Fig. 3 Computed tomography. An oval lesion (*arrow*), 2 cm in diameter, with attenuation similar to that of fat and with surrounding inflammatory changes, is localised next to the anterior *left* colon wall

without the fundamental grey-scale echoes; the right side of the screen displayed the grey-scale images.

The contrast harmonic imaging revealed a thick rim of arterial enhancement and a wide hypoechoic central area (Fig. 2). The CEUS appearance of the mass was unvaried in the venous phase; in particular, the wide central area remained hypoechoic. A computed tomography scan revealed the typical features of PEA (Fig. 3) [7].

The patient was managed conservatively and the symptoms were completely resolved after 6 days. The follow-up grey-scale ultrasound, 4 and 19 days from the first examination, revealed progressive shrinkage of the mass. The patient gave informed written consent for the grey-scale sonography, the CEUS, and the computed tomography.

Specific clinical features and grey-scale sonography findings of PEA are lacking; furthermore, there is the absence of flow in colour Doppler imaging [8, 9]. In this

single patient, CEUS has confirmed that a thick rim of enhancement and a hypoechoic central area of the mass are characteristic features of PEA, as was previously reported by Görg [6]. Therefore, in the adequate clinical context, the use of CEUS can give an immediate answer, thus allowing the diagnosis of PEA at the bedside.

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Conflict of interest Guido Menozzi, Valeria Maccabruni, Matteo Zanichelli, Marco Massari declare that they have no conflict of interest.

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