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CE - MEDICAL ILLUSTRATION

Umbilical hernia with uncommon content; herniated paraumbilical collateral veins

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A 56-year-old man patient with umbilical hernia and abdominal pain was referred to our hospital for interventional and surgical treatment of hepatocellular carcinoma. The patient had a history of alcohol-related chronic liver disease. There was history of vomiting, nausea and weight loss over the past 3 months. On physical examination, the liver was detected by palpation in 5 cm below the costal margin. There was mild tenderness over his right hypochondriac region. During his physical examination, an umbilical hernia was noted. Biochemical analysis revealed an elevated level of liver enzymes [alanine aminotransferase (ALT) 77 IU/L (normal 19–33); aspartate aminotransferase (AST) 77 IU/L (normal 15–35)], moderate decreased level of serum albumin [albumin 26 g/L (normal 35–50)], and normal level of bilirubin. Hepatitis B and C profile was negative. Other laboratory examinations were normal, including the complete blood cell count, serum electrolytes, and amylase and lipase levels. Findings consistent with chronic liver disease were observed in the ultrasonography (US) performed on the patient at an external center, and the content of the umbilical hernia could not be clearly evaluated. Therefore, magnetic resonance imaging was performed for detailed and further evaluation. Magnetic resonance (MR) imaging showed presence of dilated umbilical collateral veins into umbilicus without prominent and visible collateral abdominal veins. Axial postcontrast T1-weighted MR image showed hypointense mass lesion (asterisk) in right hepatic lobe (Fig. 1A). Axial, sagittal and coronal T2-weighted and axial-contrast enhanced T1-weighted images revealed umbilical hernia containing dilated umbilical collateral veins (circle) (Fig. 1B-E).

Acquired umbilical hernias are seen more commonly in women and have association with obesity, ascites, intraabdominal masses and pregnancy. They usually contain mesenteric adipose tissue, small- or large-bowel segments. Complications of umbilical hernias are strangulation, incarceration and rupture [1]. Paraumbilical collateral veins or inferior veins of Sappey form a transhepatic shunt between portal vein and superior or inferior vena cava, especially in patients with chronic liver disease. Umbilical hernia containing paraumbilical collateral veins is a rare entity. Doppler US may play a pivotal role in diagnosis with several advantages (rapid exam, no radiation, and no contraindication). However, computed tomography or magnetic resonance imaging methods are generally required due to user dependency and the need for anatomical detail. To best of our knowledge, there are only three case reported in English literature, however none of them includes MR images [2–4].

Incidence of umbilical hernias in patients with cirrhosis and ascites is not so unfrequent (nearly 20% of patients). More rare is the herniation of recanalized tortuous paraumbilical veins. Surgical treatment of umbilical hernia in cirrhotic patients is controversial. There is a general consensus that asymptomatic umbilical hernias should be monitored without treatment. Before umbilical hernia surgery, a comprehensive evaluation of the hernia content via imaging is mandatory [4]. In our patient, the hernia content was revealed by MRI.

Data availability and code availability

Data sharing is not applicable to this article as no new data were created or analyzed in this case study.

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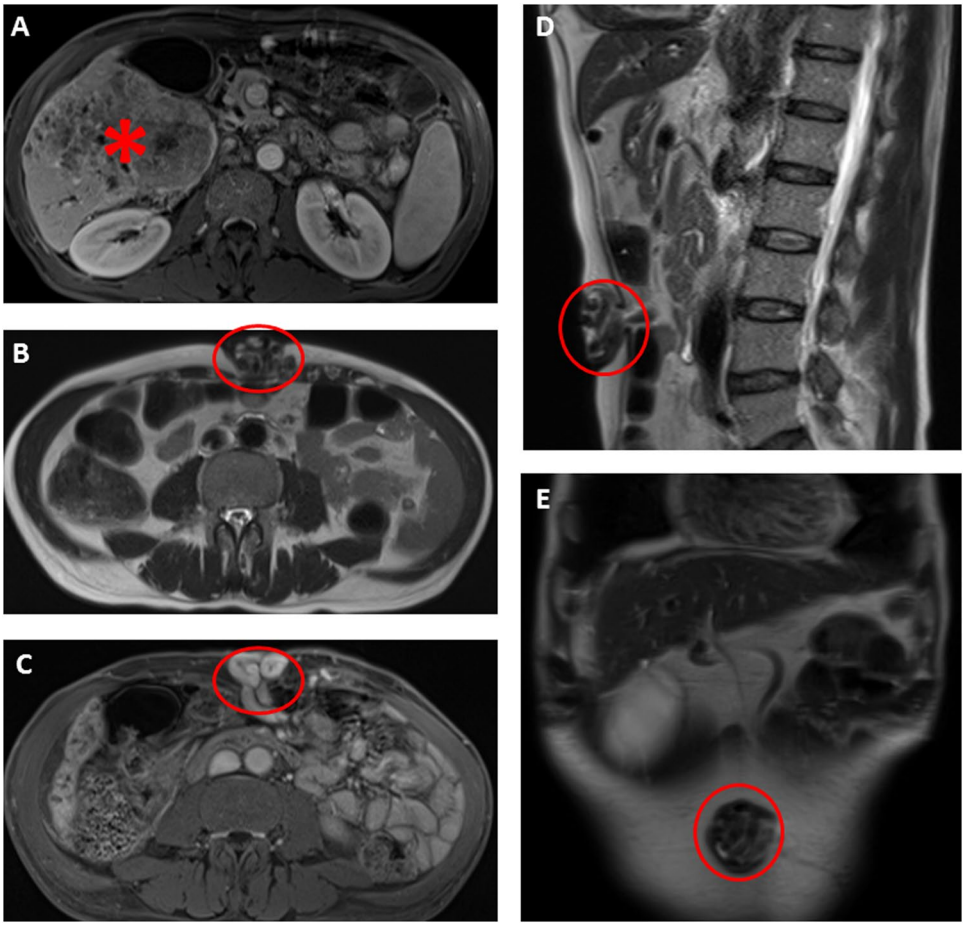

Fig. 1 Axial postcontrast T1 weighted MR image (**A**) shows hypointense mass lesion (asterisk) in right hepatic lobe. Axial (**B**), sagittal (**D**) and coronal (**E**) T2 weighted images show umbilical hernia containing dilated paraumbilical collateral veins (circle). Note the enhancement of these veins after contrast administration (**C**)

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Informed consent Written informed consent was obtained from the patient for being included in the study.

Statement of human and animal rights All procedures performed in studies involving human participants were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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