

Endoscopic ultrasound fine-needle aspiration of peritoneal deposits for diagnosis of tubercular peritonitis in a cirrhotic patient with ascites

A 30-year-old man, known to have alcohol-related cirrhosis, presented with tiredness and loss of appetite. He had stopped drinking alcohol 1 year ago when he was diagnosed with cirrhosis and was prescribed diuretics. An ultrasound performed 6 months later did not show ascites and the diuretics were stopped. However, the ascites reaccumulated 1 month prior to presentation. Laboratory investigations revealed serum albumin of 3.1 g/dL. An ultrasound of the abdomen revealed features of chronic liver disease with ascites. Ascitic fluid analysis revealed high gradient, lymphocytic non-malignant ascites with an adenosine deaminase level of 28 IU/L. An ascitic fluid culture as well as polymerase chain reaction (PCR) for *Mycobacterium tuberculosis* were negative. Computed tomography (CT) of the abdomen revealed findings similar to the ultrasound findings, and the lung parenchyma was normal on CT chest. Endoscopic ultrasound (EUS) of the stomach revealed ascites and peritoneal deposits, visualized as hyperechoic rounded lesions (● Fig. 1).

Perigastric and periesophageal collaterals were also noted (● Figs. 2 and 3).

EUS fine-needle aspiration (FNA) of the peritoneal deposits was carried out, carefully avoiding the venous collaterals. On withdrawal of the echoendoscope, a 1.4-cm subcarinal lymph node was noted (● Fig. 4) and EUS FNA of the lymph node was carried out.

Cytological examination of the peritoneal deposits revealed inflammatory cells, and PCR for *M. tuberculosis* was positive. Cytological examination of the lymph node FNA sample revealed epithelioid cell granulomas (● Fig. 5).

The patient was started on antitubercular therapy and his condition subsequently improved.

Tubercular peritonitis lacks specific signs, and its diagnosis becomes more difficult in cirrhotic ascites. In addition, investigations routinely used for diagnosis of tubercular ascites can be negative, thereby delaying diagnosis and treatment [1–3]. EUS FNA of peritoneal lesions seems to be a safe, minimally invasive alternative for tissue diagnosis in ascitic patients pre-

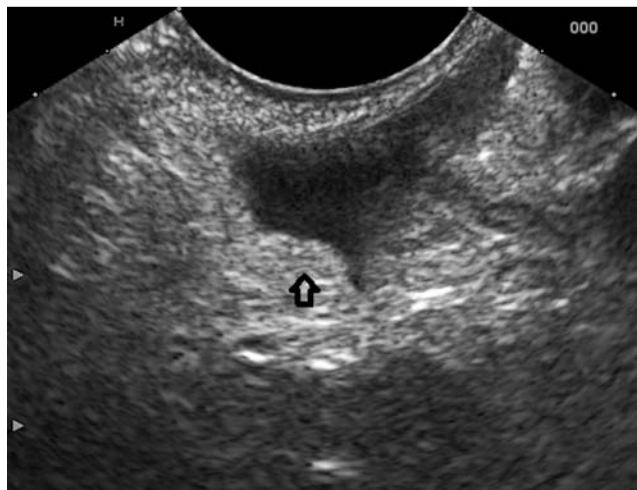


Fig. 1 Endoscopic ultrasound of the stomach showing ascites along with hyperechoic peritoneal deposits (arrow).

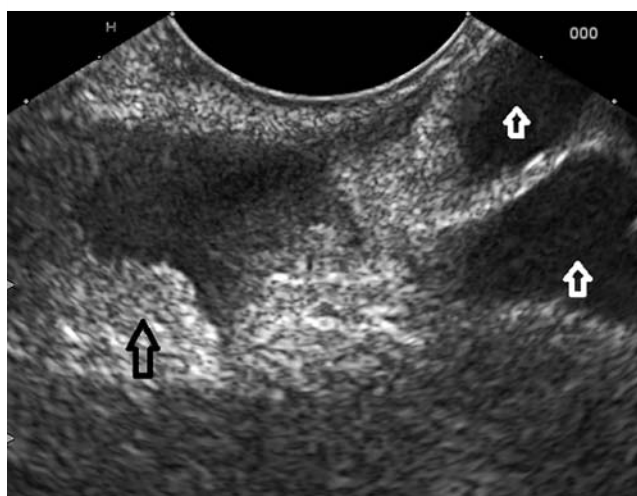


Fig. 2 Ascites, hyperechoic peritoneal deposits (black arrow), and venous collaterals (white arrow).

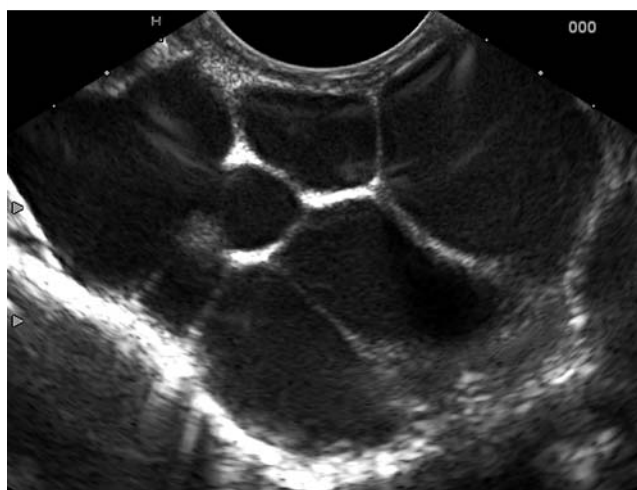


Fig. 3 Large peri-esophageal collaterals.



Fig. 4 Subcarinal lymph node with hypoechoic areas (arrow).

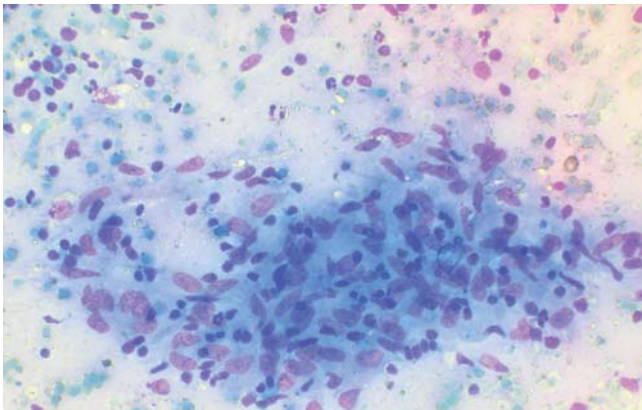


Fig. 5 Epithelioid cell granuloma (May-Grunwald-Giemsa stain, magnification $\times 400$).

senting a diagnostic dilemma [4]. We have previously reported a patient with exudative malignant ascites, in whom EUS FNA of peritoneal deposits helped to reach the correct diagnosis [5]. Also, with EUS it is possible to screen for presence of mediastinal lymph nodes and carry out guided FNA, as we did in our case.

Competing interests: None

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