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Brief Clinical Observation

Ultrasound guidance in the placement of a percutaneous endoscopic gastrostomy (PEG): An adjuvant technique in patients with abdominal wall varices?

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Abstract

Malnutrition in patients with liver disease is common. As a result, enteral feeding may be indicated. Percutaneous endoscopic gastrostomy insertion is rarely performed because the presence of varices is considered to be a contraindication. We report a case of percutaneous endoscopic gastrostomy insertion in a patient with both gastric and oesophageal varices. The use of abdominal ultrasound may provide an adjuvant tool for percutaneous endoscopic gastrostomy insertion. This novel technique may minimise the risk of complications in selected patients.

Keywords: Abdominal varices; Endoscopic gastrostomy

1. Case report

A 41-year-old man presented variceal haemorrhage in April 2002. There was no history of pre-existing liver disease. Following a normal non-invasive liver screen and liver biopsy, a diagnosis of cryptogenic cirrhosis was made. His Child–Pugh Score was 8. Despite adequate pharmacological and endoscopic treatment for oesophageal and gastric varices he had recurrent variceal bleeding. He was referred to a transplant unit for further treatment and assessment for transjugular intrahepatic porto-systemic shunting and/or possible transplantation.

He received a transplant in November 2002. Post-transplantation, he suffered further recurrent bleeding and was found to have portal vein narrowing, which had not been recognised in the initial assessment. A coagulopathy was also present which was corrected. At endoscopy, gastric varices were found and treated endoscopically. His post-operative course was complicated by a cardiac arrest secondary to a massive pulmonary embolism; he sustained an anoxic brain injury with neurological dysphagia.

On transfer to this hospital, his nutritional state was poor with an albumin of 27 g/l (range, 36–48). There was an evidence of weight loss; his triceps skin fold thickness was reduced. Due to his clinical condition, it was not possible to weigh him or assess his grip strength. His poor nutritional state was regarded as a contributing factor to his poor recovery from the cerebral insult. He could tolerate neither nasogastric nor nasojejunal feeding. His immunosuppression was administered intravenously. Surgical placement of a jejunostomy was deemed to carry an unacceptably high anaesthetic risk. A computer tomography (CT) scan of his upper abdomen had demonstrated widespread gastro-splenic venous collaterals throughout the upper abdomen and surrounding the stomach (splenic and abdominal wall varices) (Fig. 1). There was no evidence of ascites on the CT scan. In view of this, we proceeded with a percutaneous endoscopic gastrostomy (PEG) using real-time abdominal ultrasound as an adjuvant technique.

We anticipated that using ultrasound a distal position for the PEG could be identified and thus avoid incidental puncture of the varices during insertion. At gastroscopy using tran-

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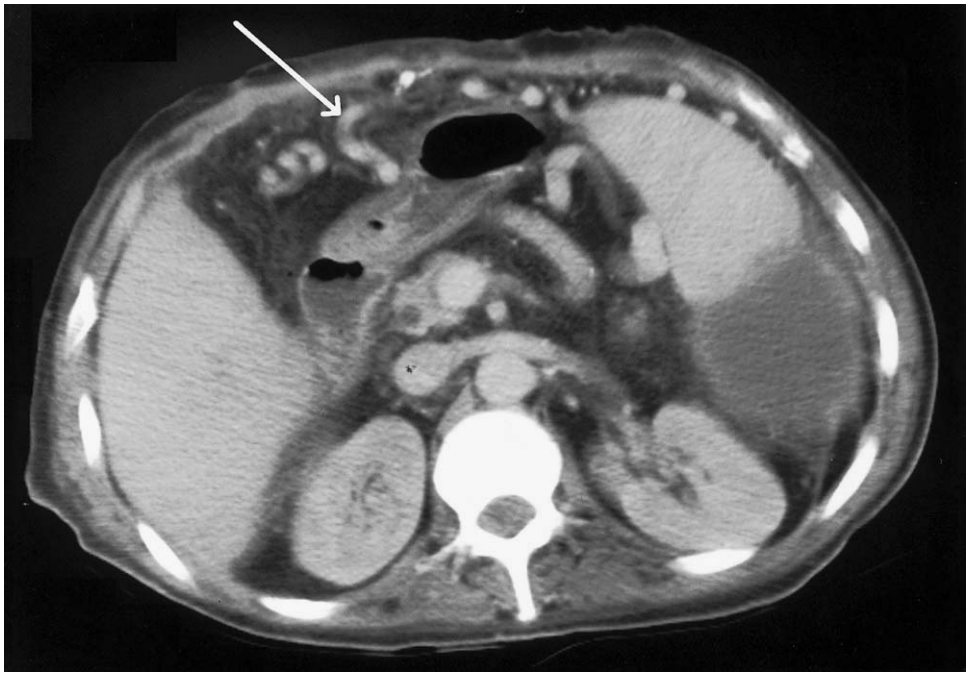

Fig. 1. CT scan: cross section with arrow revealing anterior abdominal wall varix (see arrow).

sillumination and indentation, we initially identified an endoscopically suitable position for PEG-tube insertion (Fig. 2). With the scope in situ real-time ultrasound (Ultrasound manufacturers: Toshiba, Eccocee SSA 340, Linear Probe 7.5 MHz) was performed. This revealed a large abdominal wall varix at the site of the proposed tract. A further position was located endoscopically with real-time ultrasound now confirming the absence of abdominal wall varices. This site was marked and a PEG was inserted (by the pull through method). Subsequent ultrasound imaging confirmed the absence of post-insertion bleeding (Fig. 3). Second look gastroscopy also ensured optimal positioning of the PEG. Antibiotic prophylaxis was used periprocedure in accordance with guidelines of the British Society of Gastroenterology [1] and the European Society for Endoscopy [2,3].

2. Literature review and discussion

Due to the improved survival and increasing age of patients with portal hypertension and liver cirrhosis, it is possible that the number of patients requiring nutritional support may increase. However, the presence of anterior abdominal wall or fundal varices (which can not be identified by ultrasound) as

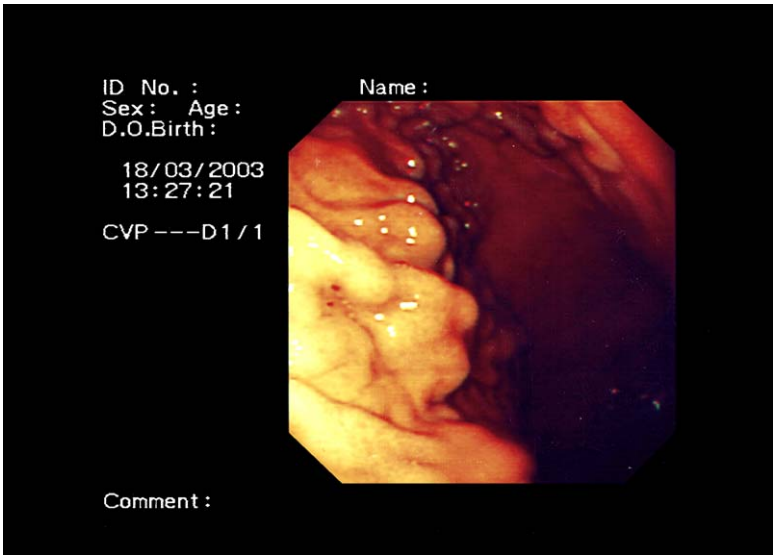

Fig. 2. Endoscopic view of extensive intra-luminal gastric varices.