To twist or not to twist: a case of ERCP in situs inversus totalis

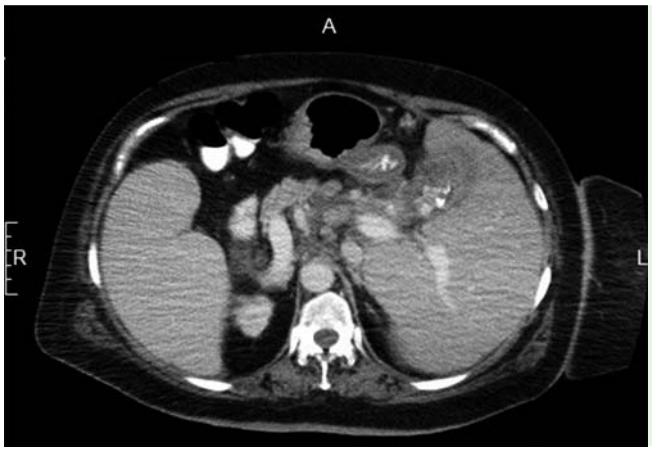

Fig. 1 Computed tomography (CT) scan confirming situs inversus with the liver seen on the patient's left side and the spleen on the right.

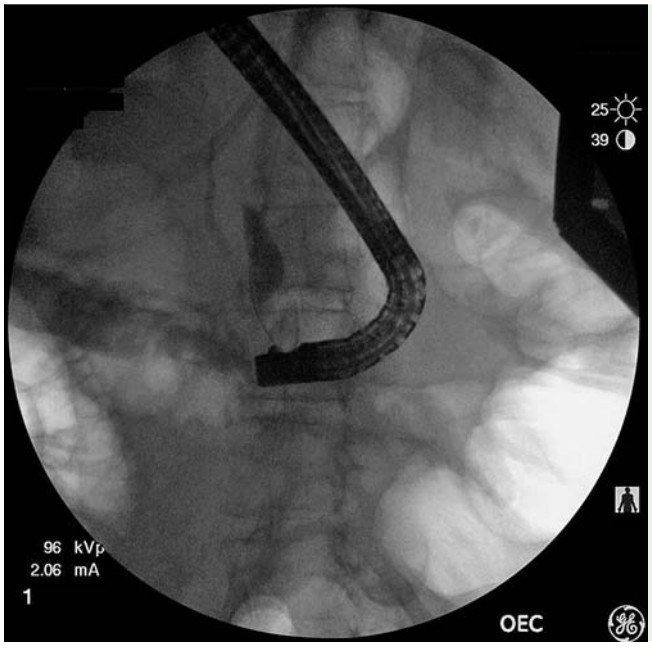

Fig. 2 Fluoroscopy image during endoscopic retrograde cholangiopancreatography (ERCP) without use of the mirror-image technique showing the position of the endoscope.

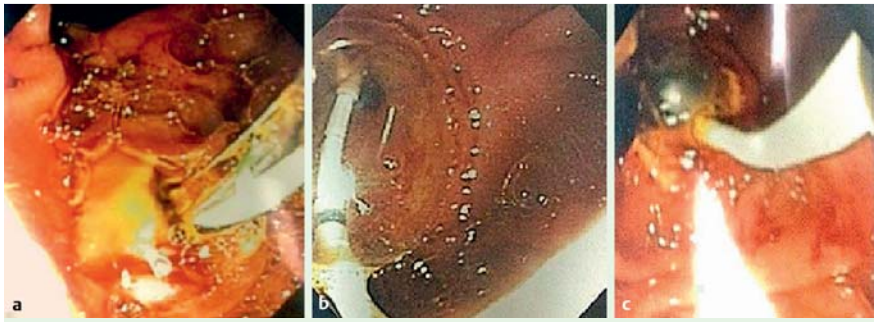

Fig. 3 Endoscopic views during endoscopic retrograde cholangiopancreatography (ERCP) showing: **a** performance of a normal sphincterotomy; **b** balloon sweeps during the procedure; **c** pigment-type stones being removed during the ERCP.

A 57-year-old woman with history of hypercholesterolemia and situs inversus totalis presented with a chief complaint of epigastric pain and poor appetite for 2 days. The epigastric pain was 7/10 in intensity with no radiation. On physical examination, she had no abdominal scars but there was evidence of hepatosplenomegaly and epigastric tenderness on palpation, although Murphy's sign was negative; bowel sounds were normal on auscultation. The results of laboratory testing revealed normal aspartate transaminase (AST) and alanine transaminase (ALT) levels, but an elevated total bilirubin of 1.3 mg/dL. The alkaline phosphatase (ALP) level was 112 IU/L (normal 45 – 115 IU/L) and the γ-glutamyltransferase (GGT) was 195 IU/L (normal 0 – 42 IU/L). Biliary ultrasound revealed a moderately dilated common bile duct and multiple gall stones. A computed tomography (CT) scan of the abdomen and pelvis confirmed the diagnosis of situs inversus totalis with hepatosplenomegaly (**Fig. 1**).

The patient underwent endoscopic retrograde cholangiopancreatography (ERCP) for her proven choledocholithiasis. Because of the patient having situs inversus totalis, she was placed in a prone position with the endoscopist on the right side of the table (**Fig. 2**). During the ERCP, the endoscope was rotated through 180° in the second portion of duodenum to allow for the anatomical anomaly. The ampulla was identified with difficulty; however, wire-guided cannulation was then successfully performed. The first cholangiogram demonstrated filling defects and a sphincterotomy was performed (**Fig. 3**). After this, four pigment-type stones were removed and a subsequent cholangiogram showed that no filling defects remained.

During conventional ERCP in a patient without anatomical anomalies, the patient is placed in the left lateral decubitus position with the endoscopist on the left side of the table [1]. There have been a few reports of successful cases where modifications of the conventional ERCP technique have been used [2,3]. These have included alterations in the position of the patient prior to the procedure, during the procedure, and/or alteration in the position of the endoscopist [1,4]. Our case demonstrates that a skilled endoscopist can successfully carry out ERCP while maintaining a patient with situs inversus in the prone position without using a mirror-image technique or resorting to laparotomy [5].

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Competing interests: None

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