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Splenic tear due to ERCP: A case report and literature review



Desgarro esplénico por CPRE: reporte de caso y revisión de la literatura

Adverse events related to endoscopic retrograde cholangiopancreatography (ERCP) include pancreatitis, bleeding, perforation, and cholangitis. Splenic tear (ST) is a rare adverse event, with few reported cases worldwide.¹ We present herein a case of ST following ERCP in a 41-year-old woman with no comorbidities, who underwent laparoscopic cholecystectomy 15 days earlier and presented with a post-operative Strasberg B and C bile duct injury. She was admitted to the emergency service due to pain in the right hypochondrium and dilatation of the right intrahepatic bile duct, demonstrated through computed tomography (CT). Residual choledocholithiasis was suspected, and so ERCP was ordered. The procedure was carried out with a Pentax ED34-i10T (Pentax, Japan) duodenoscope, with the patient in the supine position. The duodenoscope passed freely into the duodenum, with no resistance, and the papilla of Vater was adequately visualized. After several failed attempts at standard cannulization with a sphincterotome, an infundibular precut was performed, revealing a retroperitoneal peri-ampullar perforation (Stapfer II) and peri-ampullar bleeding that stopped spontaneously. After the adverse event, the patient presented with tachycardia and low blood pressure and her serum hemoglobin (Hb) level dropped from 14.3 g/dl to 7.9 g/dl. A CT scan revealed hemoperitoneum (Fig. 1a and b). Emergency laparotomy with splenectomy and hemoperitoneum drainage of 1300 cc were carried out and a type 1 splenicocolic ligament tear was observed (Fig. 2). During the surgery, anterograde access to the bile duct with the rendezvous technique, through choledocotomy with a 0.035"

hydrophilic guidewire, was performed. A 10 × 60 mm metallic stent (WallStent, Boston Scientific) was placed to manage the Stapfer II peri-ampullar perforation. Patient progression was satisfactory, with no signs of bleeding recurrence.

ST secondary to ERCP is a condition that can be life-threatening and there are few cases reported in the literature.¹⁻⁶ Several mechanisms have been proposed: traction of the gastrosplenic or splenicocolic ligament caused by a "long loop", "bowing" of the endoscope in the "long" position, with a tear in the splenic capsule due to torsion of the greater curvature of the stomach.²⁻⁴ Difficulty in accessing the bile duct, prolonged procedure time, over-distension of the gastric chamber, manipulation of the duodenoscope, and torsion of the duodenoscope can be related to splenic injuries. Another proposed mechanism is the presence of adhesions from previous surgeries, which can cause stiffness in the spleen and adjacent organs.⁵ In our patient, the difficulty in accessing the bile duct and the manipulation of the duodenoscope most likely favored the ST caused by any of the pathophysiologic mechanisms described above. Diagnosis is suspected in the presence of low blood pressure, a drop in hemoglobin, and CT findings. To the best of our knowledge, the present case is the first to describe blood leakage during the procedure caused by the adverse event (Stapfer II) occurring during the precut; that finding made us suspect an adverse event different from perforation. Most patients with peri-ampullar retroperitoneal perforation can be treated during ERCP, but patients with ST should be surgically treated. Conservative management has been reported in some patients with hemodynamic instability.⁶

STs should be considered in patients with sudden low blood pressure and/or an abrupt drop in hemoglobin during ERCP. Diagnosis requires a high level of clinical suspicion, it should be corroborated by CT, and management is usually surgical.

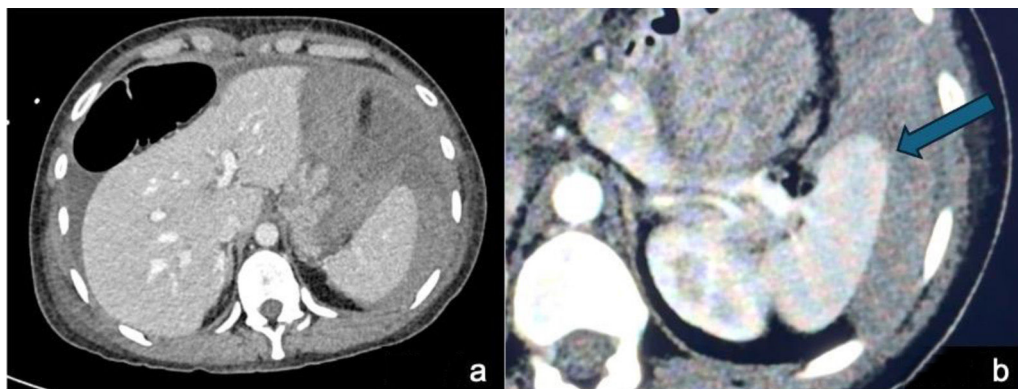


Figure 1 a) CT scan showing hemoperitoneum, b) CT in the arterial phase, showing the ST site (blue arrow).



Figure 2 Splenic injury secondary to a splenocolic ligament tear.

Ethical considerations

- 1 Informed consent was requested from the patient for this work and personal identification data were omitted from the images.
- 2 The present work is a retrospective case report, and so its submission to the corresponding ethics committee was not required.
- 3 The authors declare that the images shown in the work contain no personal information that could identify the patient, ensuring her anonymity.

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Conflict of interest

The authors declare that there is no conflict of interest.

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