

ERCP Injury of the Distal Common Bile Duct and Duodenum: Successful Repair by Distal Choledochoduodenostomy

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Citation

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Abstract

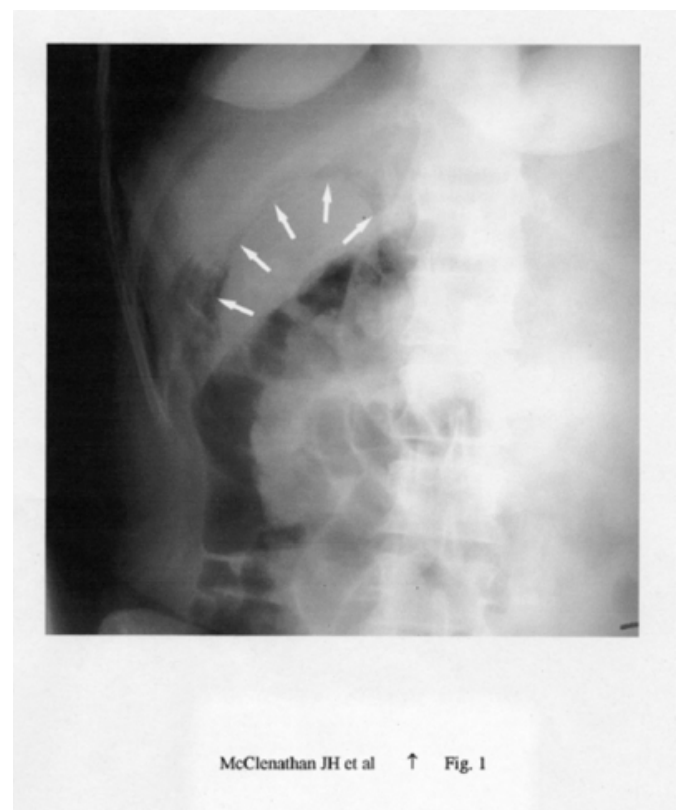
Perforation of the duodenum or common bile duct is a potentially life-threatening complication of endoscopic retrograde cholangiopancreatography (ERCP) and sphincterotomy. In this report, we describe successful operative management of a patient with a combined injury of the duodenum and distal common bile duct. After exposure and mobilization, the patient had a distal choledochoduodenostomy procedure

CASE REPORT

A 39-year-old woman was seen in the gastroenterology clinic for chronic nausea and abdominal pain. She had an uneventful laparoscopic cholecystectomy for calculous cholecystitis 6 years earlier. Shortly thereafter she began having varying degrees of epigastric pain. An abdominal ultrasound showed slight dilatation of the common duct. An ERCP and sphincterotomy were done for presumed ampullary stenosis in 1999. Her abdominal pain improved for a short period but then recurred. In 2001, an MRCP was done which showed persistent modest dilatation of the common duct with abrupt ampullary tapering and no filling defect. Her symptoms became more severe in 2003 although her liver function tests remained normal. A repeat ERCP and sphincterotomy were performed because she had relief from her previous procedure. In addition, cytologic brushings were obtained. Post-procedure, she experienced severe abdominal pain and transient hypotension. An abdominal film demonstrated free and retroperitoneal air outlining the right kidney. (Figure 1) Abdominal examination demonstrated peritonitis.

Figure 1

Figure 1: Abdominal film shows gas contour around right kidney.

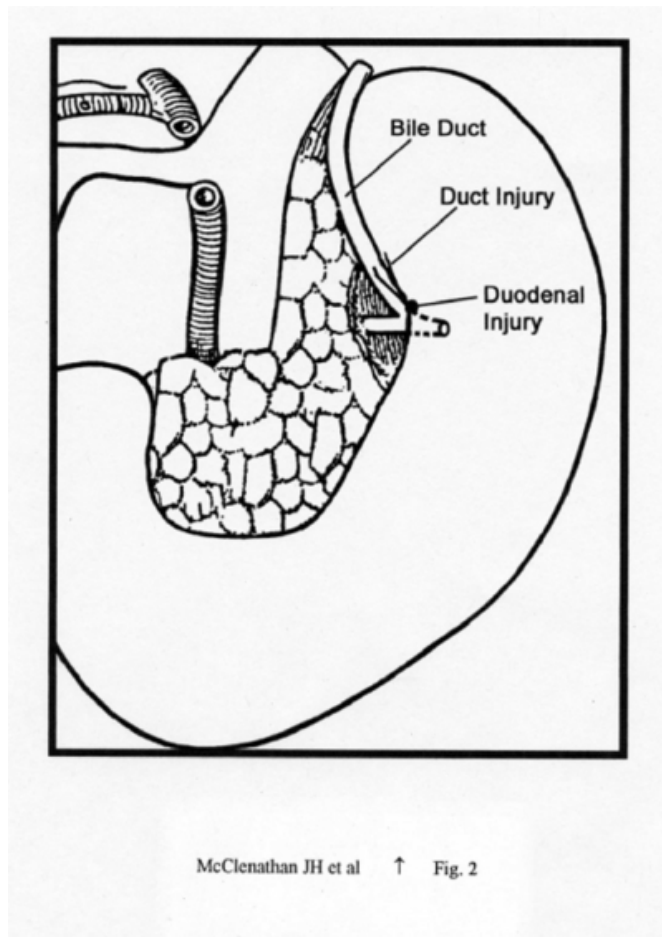


When the patient was explored, there was retroperitoneal and intraperitoneal gas and bile staining. Bile was seen to come from behind the duodenum. After complete mobilization of the duodenum, a 6-7 mm clean longitudinal

opening was found in the most distal end of the common bile duct extending above a small 2-3 mm opening in the adjacent duodenum.

Figure 2

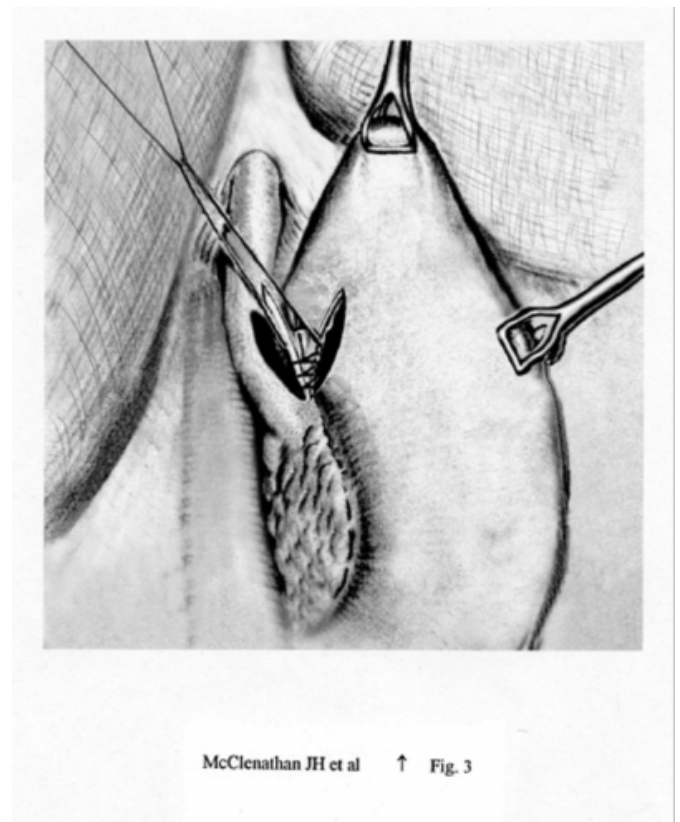
Figure 2: Posterior view of distal bile duct and duodenal confluence with injury depicted.



Because of concern over persistence of distal duct obstruction and the need to provide a secure repair of the combined injury, the bile duct injury was extended and the opening in the duodenum was converted to a posterolateral duodenotomy. The two openings were anastomosed with a single layer of Maxon sutures creating a distal choledochoduodenostomy. (Figure 3)

Figure 3

Figure 3: Graphic depiction of distal single-layer choledochoduodenostomy.



With nutritional support and bowel rest the patient recovered without sequelae. She reports that her pre-operative upper abdominal pain has been relieved.

COMMENT

The most common complications reported after ERCP and endoscopic sphincterotomy are bleeding, pancreatitis and duodenal perforation. (1) Most patients with bleeding and pancreatitis are managed without operation. Duodenal and bile duct injury management are more controversial. (2, 3) Patients with contained dye extravasation and a clinically benign examination are sometimes managed non-operatively. Because delayed treatment of perforation may lead to higher mortality, some advocate operative therapy in all patients with suspected perforation. (2)

Stapfer (3) proposed a classification of ERCP- and sphincterotomy-induced injuries:

- I. Lateral duodenal wall
- II. Sphincter of Oddi
- III. Common duct injury

IV. Retroperitoneal air alone.

In Stapfer's study (3), 6/14 injuries occurred at the ampulla; half of which were successfully managed non-operatively.

Distal lateral choledochoduodenostomy performed by the transduodenal approach has also been reported. (4) Herein we describe management of a patient with ductal and duodenal injury using a distal choledochoduodenostomy but without the need for a duodenotomy.

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