

Title:

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Isolated subcutaneous emphysema of the abdominal wall following endoscopic retrograde cholangiopancreatography

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Disclosure Statement

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ABSTRACT

Isolated subcutaneous emphysema without retroperitoneal perforation is a rare complication of endoscopic retrograde cholangiopancreatography (ERCP). We present the case of an 87-year-old female who developed an extensive subcutaneous

emphysema following ERCP for choledocholithiasis. Abdominal computed tomographic scan revealed air perfectly dissecting the abdominal wall muscle layers, and no evidence of air leak in the pleural, mediastinal or peritoneal spaces.

CASE REPORT

An 87-year-old female underwent endoscopic retrograde cholangiopancreatography (ERCP) for choledocholithiasis. Sphincterotomy and balloon extraction effectively removed one of two calculi obstructing the common bile duct (Fig 1A). Biliary stent placement was required as extraction of the larger stone failed due to its size (Fig1B). Within the first 12h, the patient developed abdominal wall swelling and mild pain. Computed tomographic scan revealed an extensive subcutaneous emphysema dissecting the abdominal wall muscle layers (Fig 2), but no evidence of air leak in the pleural, mediastinal or peritoneal spaces. As there were no clinical, laboratory or radiological signs of bowel perforation, she was managed nonoperatively and discharged on the third day after an uneventful recovery. At repeat ERCP 3 weeks later, the sphincterotomy was extended and the residual stone was removed.

DISCUSSION

Subcutaneous emphysema following ERCP is not necessarily associated with retroperitoneal perforation (1, 2). The underlying mechanism involves continuous insufflation of pressurized air in combination with mucosal disruption, which can occur in the absence of perforation due to air diffusion within or outside the layers of the duodenal wall (2). Retroperitoneal air leakage can then spread through the preperitoneal fat and interfascial plane, leading to subcutaneous emphysema, or even diffuse through deep fascial planes, causing pneumothorax, pneumomediastinum or pneumoperitoneum (3). Once gastrointestinal wall injury is excluded, most cases respond to conservative management.

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Fig 1. A) Choledocholithiasis in the duodenum after ERCP extraction B) A biliary stent had to be inserted as a large stone could not be removed from the common bile duct.

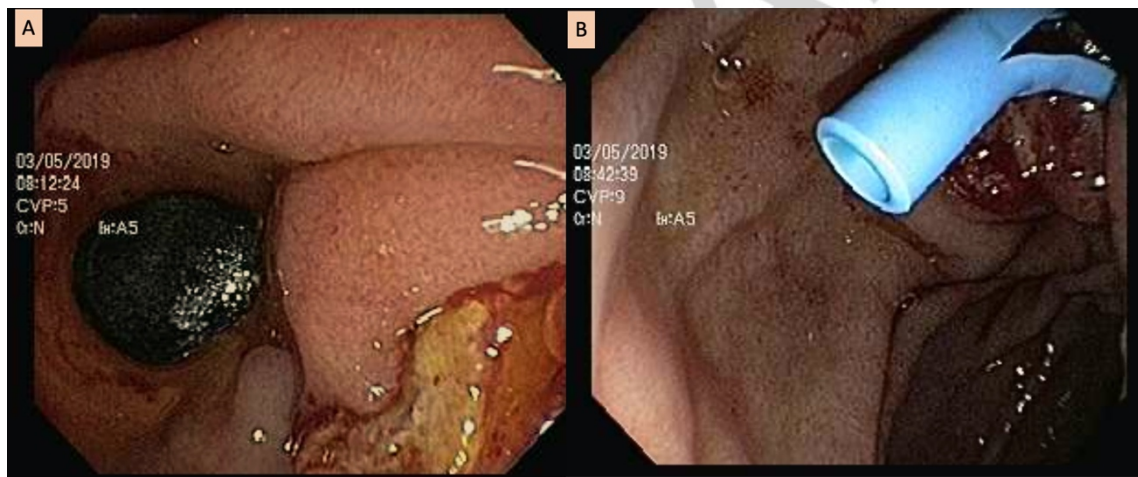
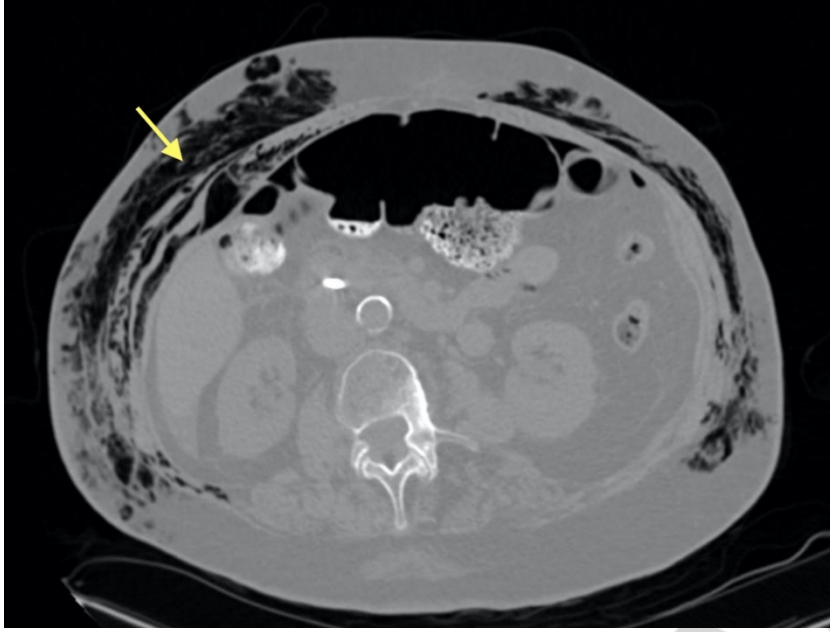


Fig 2. Extensive subcutaneous emphysema dissecting the abdominal wall muscle layers.



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