

A man with painless scrotal swelling

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CASE REPORT

A 65-year-old man with a medical history of obstructive sleep apnoea syndrome presented with complaints of diarrhoea, abdominal pain, nausea, vomiting and fever for one week. Also, he showed signs of biliary obstruction. Further investigation revealed the presence of *Campylobacter jejuni* gastroenteritis and choledocholithiasis with minimal jaundice. A day later the patient developed cholangitis for which an endoscopic retrograde cholangiography (ERCP) with precut papillotomy was performed. Midazolam was used for procedural sedation. However, the procedure was

complicated by agitation despite higher doses of midazolam. Several attempts to cannulate the common bile duct were undertaken, but nevertheless unsuccessful. The next day, the patient experienced considerable painless scrotal swelling (*figure 1*). An abdominal X-ray was also performed (*figure 2*).

WHAT IS YOUR DIAGNOSIS?

See page 198 for the answer to this photo quiz.

Figure 1. Extensive scrotal swelling



Figure 2. Abdominal X-ray showing air within the retroperitoneum, as well as subcutaneous and scrotal emphysema



ANSWER TO PHOTO QUIZ (PAGE 194)
A MAN WITH PAINLESS SCROTAL SWELLING

DIAGNOSIS

Because the first ERCP was unsuccessful, the procedure was repeated a day later, but this time in the operation room with adequate anaesthesia. Surprisingly, cholangiography revealed a *fausse route* with a duodenal perforation. The abdominal X-ray showed air within the retroperitoneum and subcutaneous, as well as inguinal and scrotal emphysema (*figure 2*). Abdominal computed tomography scan confirmed the diagnosis of scrotal emphysema (pneumoscrotum) related to retroperitoneal perforation due to a *fausse route* during ERCP. The retroperitoneal perforation as well as the pneumoscrotum resolved with conservative measures, including nasogastric decompression, antibiotics and intravenous fluids.

ERCP is a commonly used and well-tolerated procedure with low overall complication risk (1 to 5%) and mortality rate (0.2 to 0.5%).¹ Possible complications are, among others, pancreatitis, bleeding, infection, cardiopulmonary events and perforation. In our case the patient remained restless despite sedation, potentially increasing the complication risk. So, adequate sedation is essential during procedures such as ERCP. The risk of perforation is minimal (<0.05%) occurring in 0.2 to 0.6% of ERCP cases and originating from several anatomic sites such as the retroperitoneum.¹ Retroperitoneal perforations can cause subcutaneous emphysema, pneumomediastinum, pneumothorax and to lesser extent pneumoscrotum.² Pneumoscrotum develops in cases if air dissects down from the retroperitoneum through the anatomic connections between the retroperitoneum, fascial planes of the abdominopelvic cavity, inguinal canal and finally into the scrotal sac.² In case of retroperitoneal perforation

conservative management with broad-spectrum antibiotics, serial re-evaluations, decompression of the biliary tract, stomach and duodenum, is successful in most patients and approved for the initial treatment.^{1,3,4} Surgery should be considered with the co-existence of peritoneal signs (guarding, rebound tenderness), significant duodenal perforation, sepsis or failed conservative treatment.^{1,3,4} In our case, conservative management was successful and the patient recovered without life-threatening complications. However, because of their variable course of disease, these perforations are treacherous and can cause morbidity and mortality as well.⁵

When a patient develops a pneumoscrotum after ERCP or another endoscopic intervention, a procedure-related perforation should be considered.

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