CLINICAL IMAGES

Surgical emphysema of the scrotum — another complication of ERCP?

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A frail 70-year-old type 2 diabetic male patient presented with clinical and biochemical evidence of obstructive jaundice (bilirubin level 52 µmol/l). Abdominal ultrasound and computed tomography (CT) suggested that the level of obstruction was in the region of the ampulla of Vater, with no evidence of metastatic disease. He was subsequently subjected to an endoscopic retrograde cholangiopancreatographic (ERCP) examination with diagnostic and therapeutic intent. This revealed a 2 cm, well-circumscribed lesion of the major ampulla. A papillotomy was done into the pancreatic duct to facilitate biliary cannulation. This produced bile drainage but subsequent attempts at biliary cannulation resulted in submucosal injection of contrast into the duodenal wall, and no further attempts at cannulation were made. The tumour was biopsied and the procedure terminated.

After the procedure the patient complained of a non-painful swelling of the scrotum. On examination, his abdomen was soft, but there was a non-tender, diffuse scrotal swelling with crepitus typical of surgical emphysema localised to the scrotum only. The skin was otherwise normal with no extension of the emphysema along the groin or the perineum. There were no inguinoscrotal hernias and a digital rectal examination was normal. A review of the history did not reveal any urinary symptoms.

The lower pelvic radiograph (Fig. 1) confirmed the surgical emphysema, and ultrasound of the scrotum did not reveal any other pathology, although the subcutaneous air prevented an optimal study. Cystography and barium enema were also normal. We concluded that the most logical explanation was that air introduced during insufflation could have tracked through an iatrogenic duodenal perforation sustained at the time of ERCP. We opted to observe this patient closely.

Perforation into the retroperitoneal space is an uncommon but dangerous complication of ERCP.[1,2] Diagnosis is made on discovery of air or contrast in the retroperitoneum. Small retroperitoneal perforations may be contained.[2] A selective management approach is suggested depending on the presence or absence of residual biliary tract obstruction, and size of the perforation.[1,3] In our case, a conservative approach was successful as evidenced by the fall in bilirubin to within normal range (bilirubin level 14 µmol/l) and the absence of clinical signs of undetected perforation. The surgical emphysema resolved spontaneously after 10 days.

Surgery must be considered if there is residual biliary obstruction, significant duodenal perforation with overt clinical signs, any evidence of retroperitoneal sepsis or failed conservative management.[1,3]

The histological diagnosis of the ampullary lesion was carcinoid tumour and the patient is anicteric and well 2 months later. Our postulate that air introduced during insufflation

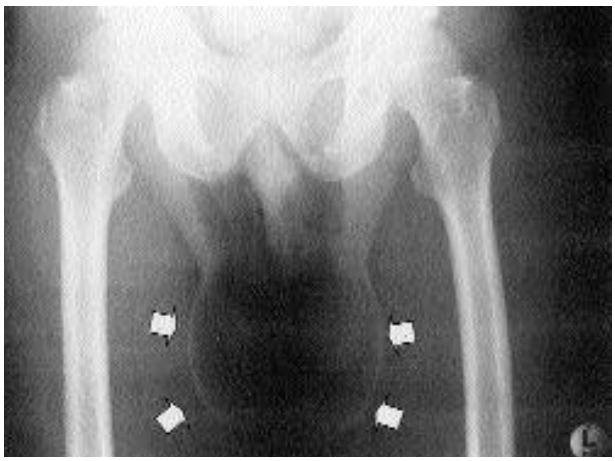

Fig. 1. Anteroposterior view of the lower pelvis demonstrating air within the scrotal sac (white arrows).

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could have tracked through an iatrogenic duodenal perforation sustained at the time of ERCP and papillotomy is supported by the anatomical descriptions outlined below.

The retroperitoneum[4] is an actual space between the posterior parietal peritoneum and the posterior abdominal wall filled with loose areolar tissue. Although it has no bounds, it is limited superiorly by the diaphragm and inferiorly by the levator muscles of the pelvic floor. Areas of fusion exist in the midline, posteriorly around the major anterior branches of the aorta, anteriorly and above the semicircular line, to the posterior rectus sheath, and superiorly to the anterior undersurface of the diaphragm and the ligaments of the liver.

The gastrointestinal structures within the retroperitoneum include the second, third and proximal fourth segment of the duodenum, the pancreas, and the retropancreatic common bile duct. There is therefore a potential communication with the scrotal sac through the inguinal canal.

Our review of this case failed to reveal any other known cause of the surgical emphysema nor has this been described previously in the literature. The question remains — is this a complication of ERCP? We believe it is.

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CLINICAL PRACTICE

Antibiotic prescribing practices for common childhood illnesses in South Africa

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Antibiotic resistance is widespread in respiratory pathogens. The first report of penicillin resistance in the pneumococcus was in 1967,[1] and in 1977 multiply resistant pneumococci were found in South Africa.[2] Data from isolates submitted for pneumococcal serotyping from children between 1995 and 1998 indicated overall antibiotic resistance rates of 38% and penicillin resistance rates of 28.9%.[3] Alarmingly high resistance rates were also found in pneumococci carried in the nasopharynx of children attending private paediatric practices in northern Johannesburg.[4] In that study, resistance to any antibiotic was found in 69.4% of sampled children, resistance to penicillin in 42% and resistance to co-trimoxazole in 53.7%. There is also clear evidence from developed countries of a relationship between patterns of antibiotic use and pneumococcal resistance to antibiotics.[5]

There are few data on patterns of antibiotic use in the face of this global resistance epidemic and none from South Africa. We therefore conducted a mail-out survey to determine the common prescribing patterns for a variety of paediatric conditions in South Africa.

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What was done

Surveys

Bilingual (English and Afrikaans) surveys were mailed to 609 paediatricians registered in 1999 with the Health Professions Council of South Africa (HPCSA). Included with each survey was a covering letter explaining the survey and a stamped, pre-addressed return envelope. The survey included questions on paediatric practice, sources of information, and antibiotic usage for specific paediatric illnesses. The paediatricians' names were not included on the surveys to ensure confidentiality of reporting.

Data analysis

Survey data were entered and analysed using EpiInfo