

Ischaemic bowel detected as hepatic portal venous gas on a chest X-ray

A 36-year-old woman who had no prior history of seizures was admitted to the Department of Anaesthesiology and Intensive Care at the Prince of Wales Hospital in September 1997 with status epilepticus. A thiopentone infusion was commenced to terminate the seizures. On day 5 of admission, abdominal distension and rapidly worsening metabolic acidosis developed. Emergency investigation included the chest X-ray shown below, which revealed the presence of hepatic portal venous gas (HPVG) as a branching radiolucency that extended to within 2 cm of the liver capsule. This finding was confirmed by a computed tomography (CT) scan of the abdomen. A plain abdominal X-ray showed the presence of intramural bowel gas (pneumatosis intestinalis), and emergency laparotomy revealed patchy gangrene of the small bowel and the presence of gas in the venous tributaries. The patient's condition continued to deteriorate despite the resection of gangrenous bowel, and the patient died later the same day due to sepsis and multi-organ failure.



The presence of HPVG is an uncommon finding that is associated with conditions such as necrotic bowel (72%), ulcerative colitis (8%), intra-abdominal abscess (6%), small bowel obstruction (3%), and gastric ulceration (3%); seizures rarely cause HPVG.¹ Predisposing factors include bowel mucosal damage, bowel distension, and sepsis.¹ The differential diagnosis includes aerobilia which is distinguished by a lesser degree of peripheral extension within the liver. The mortality rate of HPVG is reported to be between 70% to 90%²; hence, the finding of HPVG requires urgent surgical exploration, except if patients have stable ulcerative colitis or other rare benign conditions.²

This patient was subsequently found to be positive for antinuclear antibodies, with a speckled pattern and a titre of 1:40. There were no other clinical or immunological features that suggested a specific connective tissue disease. The autopsy examination showed vasculitis to be the cause of the intestinal infarction.

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