Hepatic portal venous gas with associated bowel ischaemia and intra-abdominal sepsis after recent chemotherapy

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DESCRIPTION

A 31-year-old man with metastatic pancreatic cancer was admitted with acute abdominal pain and distension. He had undergone Whipples surgery 1 year prior for a T3N1b ductal adenocarcinoma of the pancreas and achieved an R1 resection. This was followed by lymph node dissection and splenectomy revealing invasive adenocarcinoma. He was now receiving palliative chemotherapy with modified FOLFOX6, his last cycle being 1 week previously. CT scan 1 month earlier showed progressive hepatic metastasis. Non-contrast CT on presentation identified extensive small bowel ischaemia in the distribution of the superior mesenteric artery. He had substantial intestinal pneumatosis, predominantly small bowel (figure 1), and associated hepatic portal venous gas (HPVG) (figure 2). The peripheral gas distribution seen in HPVG reflects the centrifugal direction of blood flow in the liver. This is differentiated from pneumobilia, which is centrally located due to biliary anatomy and centripetal movement of bile. HPVG is a late sign indicating serious intra-abdominal pathology often requiring urgent surgical intervention. Ischaemic bowel is the primary aetiology in 70% of HPVG cases, with 91% relating to transmural necrosis. Mortality rate is 75–90%, which only increases when associated with pneumatosis intestinalis.¹ The proposed mechanism for gas formation is not well understood but is thought to involve gas-forming organisms crossing the intestinal lumen, into the mesenteric veins, and accumulating in the portal venous system and hepatic parenchyma.² In the case of this patient, with such poor premorbid state and prognosis as well as a standing ARP, the decision was made for palliation.

Figure 1 Coronal image revealing hepatic portal venous gas.

Figure 2 Transverse image revealing hepatic portal venous gas.

Learning points

- ▶ Hepatic portal venous gas is an ominous and late sign indicating severe intra-abdominal pathology, with the most common cause being bowel ischaemia.
- ▶ There is high associated mortality.
- ▶ Hepatic portal venous gas after chemotherapy is a rare but documented association.

Competing interests None declared.

Patient consent Obtained.

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