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Smoke trails of a dying gut: portal and mesenteric vein gas

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DESCRIPTION

A 49-year-old male, status postresection of melanoma 2 years ago, presented with constipation, abdominal pain and abdominal distension for the last 1 week. CT abdomen with contrast showed small bowel obstruction and a transition point was identified in the central abdomen (figure 1). Also noted were innumerable hepatic and splenic metastases (figure 2), and innumerable abdominal lymph nodes, largest one measuring 6.9 cm. After 3 h, a repeat CT abdomen was performed to look for delayed passage of contrast beyond the transition point. In this interim, the patient developed small bowel pneumatosis, with new mesenteric and portal venous gas (figures 3 and 4). An emergency laparotomy was performed. The entire mid small bowel was covered with fibrinous exudate with evidence of ischaemia and perforation. Ischaemia and obstruction was from strangulation of the small bowel due to lymph node adhesions and external compression by massively enlarged lymph

nodes. A wide mesenteric resection was carried out incorporating all the large lymph nodes in the area of perforation. A primary anastomosis was performed between the ileum and the mid jejunum. Postsurgery, the patient remained mechanically ventilated with pressure support, but the family decided to withdraw all the supportive measures and the patient expired in 2 days.

This rare radiological sign was first described by Wolfe and Evans¹ in neonates secondary to necrotising enterocolitis. It is believed that air leaks through the obstructed gut into capillary veins due to perforation of ischaemic intestinal wall. The treatment and prognosis of portal venous gas depends on the underlying cause.² In adults, it is mostly seen secondary to bowel ischaemia, hence requires emergency laparotomy and carries a high mortality.³ This sign is also reported in some benign conditions requiring only conservative management.⁴

Figure 1 Point of transition, with proximal dilatation and distal collapse of small bowel.

Figure 2 Multiple hepatic metastases and no hepatic portal venous gas is seen at presentation.

Figure 3 Repeat CT, done 3 h later, showing hepatic portal venous gas.

Figure 4 Mesenteric vein gas can be noticed, like smoke trails of a dying tissue.

Competing interests None.

Patient consent Obtained.

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