

## DIAGNOSIS

In addition to liver metastases and ascites, the abdominal CT scan showed extensive pneumatosis intestinalis of the jejunal loops (*figure 1*) and gas filling of the mesenteric and portal veins (*figure 2*). There was no perforation of the bowel. Pneumatosis intestinalis is defined as the presence of gas in the bowel wall and is suspicious for bowel ischaemia; in this case it is probably related to advanced malignancy and malignancy-induced hypercoagulability.<sup>1,2</sup> Gas in the portal system, a so-called pneumoportogram, is a rare finding. It is due to accumulation of gas in the portal veins and its branches and has to be distinguished from air in the biliary tree (pneumobilia or aerobilia), which is more centrally located and does not extend to the liver capsule (to within 2 cm) as gas in the portal veins does.<sup>3,5</sup> Portal vein gas and mesenteric vein gas are sometimes reported as two separate entities, but they are usually found together.<sup>5</sup> The precise pathophysiology is still unclear, but predisposing factors that are associated with the development of portomesenteric vein gas are intestinal wall alterations, bowel distention an abcess and gas-forming organisms in the bowel lumen or in the portal venous system in case of sepsis.<sup>4,5</sup> Intestinal wall alterations are commonly caused by bowel ischaemia and permit passage of intraluminal gas into the portomesenteric venous system.<sup>5</sup> Portomesenteric vein gas is not a specific disease but a diagnostic clue and an important sign that is often caused by underlying acute and severe abdominal pathology, but a range of benign diseases have also been described.<sup>2,4</sup> The most serious and frequent cause of portomesenteric vein gas in adults is bowel ischaemia.<sup>2,5</sup> Pathological underlying conditions are divided into three groups: intestinal wall alterations (bowel ischaemia, inflammatory bowel disease), bowel distention (bowel dilatation due to spontaneous, traumatic or iatrogenic causes) and intra-abdominal sepsis (e.g. diverticulitis, pylephlebitis). A small minority

have another cause (interventional procedures, trauma, transplantation) or remain idiopathic.<sup>4,5</sup> Portomesenteric vein gas in combination with intramural bowel gas is very suspicious for bowel ischaemia associated portomesenteric vein gas.<sup>4</sup> Clinical symptoms vary but often include abdominal pain and distention eventually combined with nausea and vomiting, diarrhoea, rectal blood loss, fever and shock.<sup>4</sup> Urgent abdominal exploration is often needed to remove ischaemic bowel, relieve obstruction, treat bleeding ulcers or drain sepsis depending on the underlying cause. Patients with stable inflammatory bowel disease or gas due to interventional procedures, trauma or transplantation do not usually require acute surgical intervention and first need close observation combined with supportive therapy. These cases come together with a favourable prognosis.<sup>3,5</sup> However, in case of bowel ischaemia prognosis is poor and mortality rates range from 75% to 90% of cases.<sup>3,4</sup> In this case we present a patient with bowel ischaemia associated portomesenteric vein gas. The severity of the clinical condition, the risks of surgery and the patient's performance status and medical history without curative options, made us decide to refrain from emergency surgery and start best supportive care. The patient died the same day.

## REFERENCES

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