

Images

Unexpected liver imaging during severe COVID-19 infection

CLINICAL CASE

A 38-year-old man with COVID-19 developed productive cough, shortness of breath and a requirement for supplemental oxygen on day 10 of infection. There was no significant past medical or surgical history. There was a rapid deterioration in cardiorespiratory status requiring emergency intubation and mechanical ventilation before transfer to the intensive care unit. Increasing vasopressor requirements and the absence of bowel sounds triggered an abdominal CT scan (figures 1 and 2).

QUESTION

What does the CT scan show? What is the prognosis and management?

ANSWER

The CT scan shows small bowel infarction with pneumatosis in left lower quadrant (arrow A) and gas in portal venous structures (figures 1 and 2). This finding is associated with mesenteric ischaemia in the majority of the cases, but intestinal obstruction, malignancy, sepsis, inflammation,



Figure 1 Small bowel infarction with pneumatosis in left lower quadrant (arrow A) and gas in portal venous structures (arrow B).

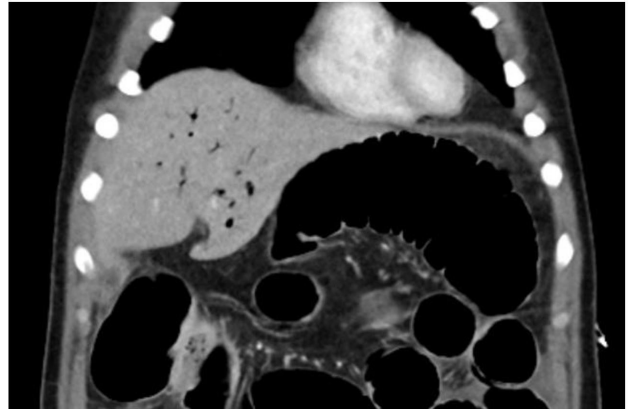


Figure 2 Gas in portal venous structures

trauma, medical interventional, chemotherapy and radiotherapy have been associated with it.¹

Contrast enhanced CT is the most useful diagnostic modality and gas is seen in the liver periphery, mainly in the left lobe. It is important to differentiate this from aerobilia (following biliary sphincterotomy or biliary-enteric fistulation), where air is centrally located due to the centripetal bile flow.

The pathogenesis is unclear, but mechanisms appear to involve alterations in intestinal wall integrity or intra-abdominal sepsis.² Prognosis is determined by the underlying pathology rather than presence or absence of portomesenteric gas. High mortality is seen in mesenteric ischemia, but prognosis is favourable in other conditions.³ Surgery is the mainstay of management in ischaemia, whereas expectant treatment is adopted in other causes.

In this case, COVID-19 infection caused mesenteric ischaemia in a previously healthy patient with no cardiovascular risk factors. He underwent an emergency laparotomy, where 20 cm of ischaemic distal small bowel was resected and a double barrel ileostomy was performed. He recovered well and underwent closure and reversal of ileostomy 2 months later.

High levels of suspicion for arterial and venous thrombosis leading to abdominal ischaemia should be maintained while caring for patients with severe illness secondary to COVID-19.

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