Aeroportia and pneumatosis intestinalis: discrepancy between radiological and intraoperative findings

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DESCRIPTION

Pneumatosis intestinalis (PI) and aeroportia refer to gas within the intestinal wall and in portomesenteric vessels, respectively. These two entities are not pathognomonic of bowel infarction when separate, but when joint are strongly associated with bowel ischaemia, which is the primary cause and accounts for 70% of cases. Other causes of PI and aeroportia are ulcerative colitis, gastric ulcers, diverticulitis, acute pancreatitis and following invasive procedures.

The pathogenesis is not yet fully known but it is thought to be due to mucosal disruption or the presence of gas-forming bacteria. Pneumatosis intestinalis and aeroportia are hyperaemic healthy small bowel was found, and since the anaesthesiologist was having trouble ventilating the patient, we converted to laparotomy (figure 2). We observed diffuse distension of the bowel and a wall thickening of proximal jejunum in relation to a contained perforation. The reason for jejunum’s perforation is unknown (our hypothesis was a foreign body). We also found pneumatosis and petechiae in the mesentery and a large sigmoid tumour as expected. A primary repair of the jejunum’s perforation was performed. The sigmoid neoplasm was not approached as it was a damage control surgery.

Some hours after surgery, we noticed progression of septic shock: the patient became hypotensive again, with a sinking of consciousness and had an episode of vomiting aspiration, so she had to be intubated. Being the patient elderly and frail, and since she never stopped needing aminergic...
and ventilatory support, it was decided with her family only supportive measures, dying on the third postoperative day.

Mesenteric venous thrombosis is a rare cause of mesenteric ischaemia, accounting for 10% of the cases.

In this specific case, venous thrombus was perhaps the result of the malignancy that contributed to the prothrombotic state. It presented in a subacute manner, since symptoms lasted weeks until diagnosis. The existence of thick walled loops or poor contrast uptake and peritoneal effusion suggests intestinal ischaemia and eventual need for surgery. Other rarer signs, but with ominous prognosis, are the existence of pneumatosis intestinal tract, portal vein air or pneumoperitoneum.

Given the CT findings and being our patient a frail elderly one, we decided to perform a diagnostic laparoscopy, because it is a minimally invasive surgical procedure and it may be a useful option for definitively ruling out the lethal conditions associated with PI.

**Learning points**

- Aeroportia and pneumatosis intestinalis (PI) are not pathognomonic of bowel infarction, and some non-ischaemic conditions have been described with these imaging findings.
- These signs should be seen as another diagnostic clue in patients with acute abdomen; thus, the treatment approach should be directed at the underlying disease.
- The clinical outcome of these patients depends more on the severity of their clinical presentation and extent of their underlying disease.
-Diagnostic laparoscopy may be useful for ruling out the lethal conditions associated with PI in frail elderly patients with severe conditions in the emergency setting.

**REFERENCES**