

Pneumatosis intestinalis in small bowel obstruction

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DESCRIPTION

We present a case of a 42-year-old woman with a history of acute myeloid leukaemia treated with bone marrow transplant. Her case was complicated by graft versus host disease involving the gastrointestinal tract, necessitating partial colectomy with ileostomy. She presented to the hospital with recurrent partial small bowel obstruction (SBO). Abdominal CT scan was consistent with partial SBO, and the patient was admitted for conservative treatment. She was deemed a poor surgical candidate given her multiple comorbidities and immunosuppressed state. Her clinical condition waxed and waned over the next week, and on hospital day 10 the patient developed decreased ileostomy output, increased nausea and vomiting. Abdominal radiographs revealed dilated bowel with increased intramural radiolucency (figure 1), and subsequent CT scan was confirmatory for extensive pneumatosis intestinalis (PI) (figure 2). The patient was treated conservatively with bowel rest and nasogastric suction with favourable outcome.

PI is an imaging finding representative of gaseous infiltration within the submucosa or subserosa of the bowel wall.^{1 2} Causal conditions include a variety of benign conditions as well as life-threatening aetiologies such as bowel ischaemia, necrosis, perforation, abdominal abscess and volvulus.¹ Two-thirds of abdominal radiographs demonstrate characteristic findings such as radiolucency within the bowel wall, pneumoperitoneum and the presence of portal venous gas.^{1 2} CT may demonstrate intramural gaseous infiltration, which may become

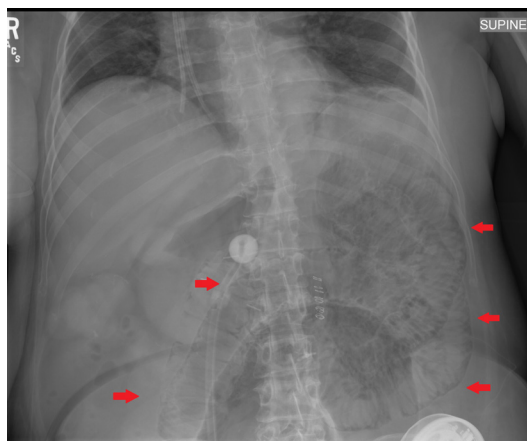


Figure 1 Supine abdominal radiograph demonstrating prominent small bowel with increased lucency within the bowel wall (arrows).

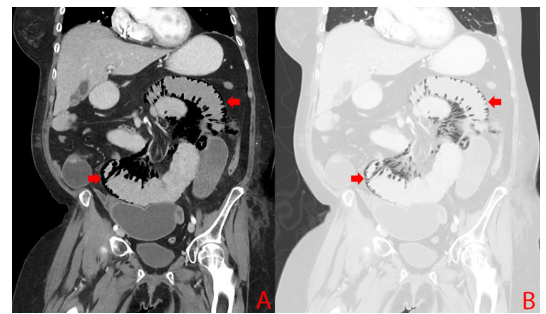


Figure 2 Coronal CT of the abdomen showing extensive pneumatosis intestinalis (arrows) in the soft body tissue window (A) and lung window (B).

evident within the mesenteric and portal veins, a finding more common with mesenteric ischaemia and which may correlate with higher mortality.¹ CT is the best imaging modality, demonstrating higher sensitivity than radiographs or ultrasound and often delineating the causal pathology.^{1 2}

Learning points

- ▶ Pneumatosis intestinalis has a variety of benign and life-threatening causes.
- ▶ Pneumatosis intestinalis is defined by gaseous infiltration into the submucosa or subserosa of the bowel wall and may be identified with X-ray, ultrasound or CT scan.
- ▶ When compared with X-ray or ultrasound, CT features higher sensitivity for the diagnosis of pneumatosis intestinalis.

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