CASE REPORT

Massive faecal impaction leading to abdominal compartment syndrome and acute lower limb ischaemia

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SUMMARY

Abdominal compartment syndrome (ACS) is associated with significant morbidity and mortality requiring prompt treatment. We report a rare case of a 57-year-old man who developed acute lower limb ischaemia, severe metabolic acidosis and renal impairment from massive faecal impaction of unknown aetiology resulting in ACS causing occlusion of the right common iliac artery. This was treated with faecal disimpaction, which eventually resulted in slow but full recovery.

BACKGROUND

This case demonstrates several important learning points for future practice. Abdominal compartment syndrome (ACS) needs to be considered as a differential cause for acute lower limb ischaemia in the setting of abdominal pain and distension. Surgical decompression is not always necessary, especially in the case where the cause may be due to massive faecal impaction where disimpaction may suffice in treatment and resolution. This may save the patient

Figure 2 Axial CT demonstrating occlusion of the right common iliac artery.

from significant morbidity of a laparotomy, which may aid recovery in patients that are critically unwell with multiorgan dysfunction and metabolic acidosis as shown in our case.

CASE PRESENTATION

A 57-year-old man presented to the emergency department with a 3-day history of increasing abdominal pain, distension, nausea, and absolute constipation with associated right leg pain, unable to mobilise for the past 24 hours. He had no significant medical, surgical or family history, was not on any regular medications and denied any use of illicit drugs. The patient was a non-smoker and had no known risk factors for vascular disease.

He was found in the emergency department to be hypotensive with a systolic blood pressure of 80 mm Hg, with a rigid, distended abdomen but no significant tenderness on examination. In addition, the patient had pitting oedema involving bilateral thighs and a cold/ischaemic right leg with no palpable distal pulses. Right lower limb motor function was found to be significantly reduced. Rectal examination demonstrated impacted stool. The diagnosis of abdominal compartment syndrome was made clinically without the measurement of intra-abdominal pressures given the combination of clinical and investigation findings.

Figure 1 Coronal CT demonstrating grossly distended sigmoid colon with massive faecal loading.

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INVESTIGATIONS

Initial investigations included blood gas which demonstrated a metabolic acidosis with a pH of 7.08 and bicarbonate of 12 mmol/L and lactate of 11.4 mmol/L. Haemoglobin was within normal limits at 145 g/L (130–180 normal range); however, there was evidence of renal impairment with a creatinine of 163 µmol/L (60–110 normal range). CT of the abdomen and pelvis performed with contrast demonstrated grossly distended redundant sigmoid colon secondary to massive faecal loading (figure 1) resulting in occlusion of the right common iliac artery (figure 2), compression of the mid-ureter leading to right hydro-nephrosis and severe distension of the urinary bladder.

DIFFERENTIAL DIAGNOSIS

Intestinal obstruction, ruptured abdominal aortic aneurysm and perforated viscus were thought to be possible differentials.

TREATMENT

Prompt bladder decompression with an indwelling catheter was performed and the patient was immediately taken to theatre. Significant faecal disimpaction was performed manually under general anaesthesia with approximately 2 L of faeces removed. After disimpaction, resolution of ACS was observed with immediate resolution of abdominal distension, and prompt return of circulation was noted in the right leg with palpable dorsalis pedis and posterior tibial pulses. Diagnostic laparoscopy was performed, demonstrating grossly distended sigmoid colon without any other significant abnormalities. A rectal tube was inserted and the patient was subsequently taken to the intensive care unit (ICU) for management after developing significant multiorgan dysfunction and metabolic acidosis as a result of ACS.

OUTCOME AND FOLLOW-UP

Day 1 postprocedure the patient suffered from rhabdomyolysis due to reperfusion injury of the right lower limb, which led to further acute kidney injury requiring haemofiltration for 3 days. Regular bowel motions were maintained with the use of regular aperients. He was discharged from the ICU after 4 days and gradually regained full motor function in the right lower limb, mobilising without any gait aids after 13 days from decompression. Renal function recovered and he left the hospital 23 days after admission with a plan for further investigation with a colonoscopy. Follow-up colonoscopy 8 weeks after the discharge was an inadequate study due to poor bowel preparation. The patient required ongoing use of aperients to maintain regular bowel motions after discharge. No explanation has been found as yet to explain his significant faecal loading and constipation.

DISCUSSION

Acute limb ischaemia secondary to compartment syndrome is a rare entity that has only been reported a few times previously.^{1 2} Massive faecal impaction leading to abdominal

compartment syndrome has been reported in children and adult patients before.^{3 4} Prompt decompression through more conservative approaches (in this case, faecal disimpaction) not requiring a full decompressive laparotomy has been described with the benefit of less morbidity especially for critically ill patients and may result in complete resolution of symptoms.^{5 6}

Recognition of the aetiology of ACS as faecal impaction in the presenting patient and institution of appropriate immediate disimpaction can quickly decompress the abdomen and resolve ACS, which may reduce the need for surgical decompression and morbidity associated with this.

Learning points

- ▶ Abdominal compartment syndrome is a life-threatening condition requiring appropriate prompt treatment for good patient outcomes.
- ▶ Abdominal compartment syndrome should be considered as a differential for patients presenting with abdominal distension and acute limb ischaemia.
- ▶ Treatment of abdominal compartment syndrome should be tailored to the cause, and surgical laparotomy is not always necessary.
- ▶ Urgent faecal disimpaction for abdominal compartment syndrome caused by massive faecal impaction may provide definitive decompression without the need for surgical decompression.

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