CASE REPORT

Mesenteric vein thrombosis; not going with the flow

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SUMMARY

A 71-year-old woman presented with a 2-week history of epigastric pain, nausea and vomiting; on examination she demonstrated signs of peritonism. CT imaging was performed and this demonstrated extensive thrombosis of the superior mesenteric, omental and portal veins with infarction of the distal small bowel. A non-operative approach was initiated and anticoagulation rapidly started. Within 48 h the patient demonstrated significant clinical improvement and she subsequently made a full recovery.

BACKGROUND

This case was important because mesenteric venous thrombosis (MVT) is a rare condition, but carries significant mortality and the management is relatively controversial. This patient had extensive thrombosis of her intra-abdominal venous system and had symptoms of peritonism. In this patient, good outcomes were achieved taking a non-operative approach; this approach has been validated in a growing number of cohort studies.

CASE PRESENTATION

A 71-year-old woman with a medical history of hypertension and an open cholecystectomy presented to the emergency department with a 2-week history of epigastric pain, nausea and vomiting. The epigastric pain was sharp and severe in character and made markedly worse by eating, drinking and deep inspiration. Examination demonstrated bowel sounds with a diffusely tender abdomen with guarding on the umbilical region and right loin.

INVESTIGATIONS

The patient had a blood pressure of 134/82 mm Hg and pulse 86 bpm. Laboratory investigations revealed a C reactive protein of 49.5 mg/L, white cell count $19.91 \times 10^9/L$, platelets $489 \times 10^9/L$, neutrophils $17.45 \times 10^9/L$, alkaline phosphatase of 193 IU/L, lactate of 1.8 mg/dL. All other blood, albumin and liver function tests were unremarkable. CT imaging was performed and this demonstrated extensive thrombosis of the superior mesenteric and omental veins with infarction and ischaemia of the distal small bowel, considerable intra-abdominal and pelvic free fluid and oedema throughout the mesentery, partial thrombosis of the splenic vein and a completely thrombosed portal vein (figure 1).

DIFFERENTIAL DIAGNOSIS

Three quarters of patients with MVT have an inherited thrombotic condition.

The most common disorder is a factor V Leiden mutation that is present in 20–40% of these patients. Activated protein C resistance, mutations of the prothrombin gene or JAK2 gene, deficiencies in protein S, C, antithrombin and antiphospholipid antibodies make up the remainder of cases.¹

TREATMENT

Anticoagulation with treatment dose dalteparin was initiated concurrently with oral anticoagulant therapy. Following discussion with the surgical teams, it was agreed that a non-surgical approach should be pursued despite signs of peritonism.

OUTCOME AND FOLLOW-UP

Within 48 h of starting anticoagulation, the symptoms of epigastric pain, nausea and vomiting had settled and the patient was able to tolerate a normal diet. In addition, blood tests had normalised. A thrombophilia screen and JAK2 mutation test were performed but these did not demonstrate any abnormalities. At a 6-month assessment the patient remained well and had no evidence of portal hypertension or any further episodes of thrombosis.

DISCUSSION

MVT is a potentially life-threatening condition that presents with symptoms of peri-umbilical pain, nausea and vomiting. Peritonism is often noted on clinical examination, however, its presence is not specific for bowel perforation and is often elicited in patients without perforation and only mucosal necrosis.² There is often a delay until diagnosis and symptoms may be present for days to weeks before a diagnosis is achieved. Patients may present at any age, but the condition should be thought of in patients with risk factors such as prothrombotic states, dehydration, portal hypertension, pancreatitis and malignancy.³

Mesenteric thrombosis invariably occurs in the superior mesenteric vein leading to small bowel ischaemia although 30% of cases will involve the portal vein.⁴ Subsequent bowel wall oedema leads to a markedly reduced arterial flow leading to ischaemia with an increased risk of bacterial translocation and perforation.

Patients with MVT have an extremely poor prognosis and a recent review noted mortality ranging from 20% to 50%.¹ Conventional wisdom suggests that the cause of mortality in patients with MVT is of delayed surgery, as historical studies have noted that only 5% of patients who did not undergo surgical treatment survived.⁵

This case highlights that emergency surgical intervention is not necessarily required for all patients presenting with acute mesenteric ischaemia. Good

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Figure 1 CT illustrating extensive thrombosis of the superior mesenteric, omental, splenic and portal veins with infarction and ischaemia of the distal small bowel.

outcomes may be achieved following intensive medical management with immediate anticoagulation. Recent cohort studies have demonstrated that 46% of patients do not require surgical intervention.⁶ Furthermore, following resection and anastomosis, 55% of patients will suffer postoperative morbidity⁷ and, in some small studies, taking a non-operative approach has resulted in similar morbidity, mortality and survival.² In conclusion, in patients with MVT, anticoagulation should be started promptly,

but surgery should be reserved for those with severe disease, that is, transmural necrosis and bowel perforation.

Learning points

- ▶ Patients with mesenteric venous thrombosis (MVT) require prompt anticoagulation.
- ▶ Surgical resection for MVT should be reserved for those with features of transmural colonic necrosis or bowel perforation.
- ▶ Three quarters of patients with MVT have an underlying prothrombotic condition and the underlying causes should be investigated.

Competing interests None.

Patient consent Obtained.

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