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Hyperamylasaemia and ischaemic colitis

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ABSTRACT

INTRODUCTION: Ischaemic colitis is a differential diagnosis to be considered in patients who have a high cardiovascular risk. Presentation of severe ischaemia is usually that of an acute abdomen with passage of fresh blood per rectum, and hyperamylasaemia.
PRESENTATION OF CASE: A 66-year-old gentleman was admitted to A&E with a short history of central abdominal pain, nausea, vomiting and fresh bleeding per rectum. A diagnosis of ischaemic colitis was made by the computed tomography (CT) scan findings of colonic thickening and pneumatosis, in addition to colonoscopy demonstrating sloughy mucosa and ulceration. Symptoms did not resolve with conservative management, therefore laparotomy + Hartmann's procedure was performed. Histology showed extensive areas of both partial and full thickness ischaemia with stricture.
DISCUSSION: Amylase is an indicator of intra-abdominal inflammatory processes. Hyperamylasaemia (normal <100 U/l) is most frequently associated with pancreatitis; however, causation is not exclusive and other differentials including bowel ischaemia must be considered, although amylase is not a specific marker for ischaemic colitis. It is important to distinguish between ischaemic and ulcerative colitis.
CONCLUSION: Intestinal ischaemia is a serious acute abdominal pathology that is associated with hyperamylasaemia, and frequently requires prompt surgical intervention to prevent subsequent mortality.

1. Introduction

Ischaemic colitis is a differential diagnosis to be considered in patients who have a high cardiovascular risk. Presentation of severe ischaemia is usually that of an acute abdomen with passage of fresh blood per rectum, and hyperamylasaemia also features. Incidence is estimated as 7.2 per 100,000 person-years, with increasing frequency with age and in those with co-existing cardiovascular risk factors.[1,2] Low-grade chronic ischaemia may be asymptomatic and spontaneously resolve; however, as in the case presented here, it is important to recognise early symptoms for prompt management, which may include surgical resection of the ischaemic bowel and stoma formation.

2. Case presentation

A 66-year-old gentleman was brought to A&E as a blue light call with an immediate preceding history of sudden onset severe central and lower abdominal pain, associated with nausea and vomiting. He also reported several episodes of fresh bleeding per rectum (PR) on the same day of admission, prior to which he reported a 2-week history of intermittent constipation and loss of appetite. He reported no recent fevers or other associated symptoms or illnesses.

The patient had a known extensive vasculopathic history comprised of hypertension, ischaemic heart disease, a previous stroke, atrial fibrillation and an abdominal aortic aneurysm (AAA) of 4.3 cm. He had undergone a colonic polypectomy 2 years ago, with otherwise normal colonoscopy and there was no family history of bowel cancers. Drug history included Acenocoumarin (Sintrom), a new coumarin anticoagulant.

At paramedics' arrival he was hypotensive at 68/38 mmHg and tachycardic at 140 bpm, but responded to initial fluid resuscitation, BP 89/52 mmHg, pulse 120 bpm in A&E. Abdominal examination elicited lower abdominal tenderness and a palpable AAA. Rectal examination showed fresh blood.

Amylase (3776 U/l), lactate dehydrogenase (492 IU/l), urea (11.8 mmol/l) and creatinine (149 μmol/l) were all raised. Arterial blood gas (ABG) analysis revealed a metabolic acidosis of pH 7.33 and a raised lactate of 3.49 mmol/l with an accompanying base excess of -5.3 mmol/l. His Modified Glasgow Score for pancreatitis was 1, indicating a low suspicion for this diagnosis.

Conservative management was started, consisting of intravenous fluid resuscitation, antibiotics, nil-by-mouth, nasogastric-tube insertion, urinary catheterization and close observation. Chest

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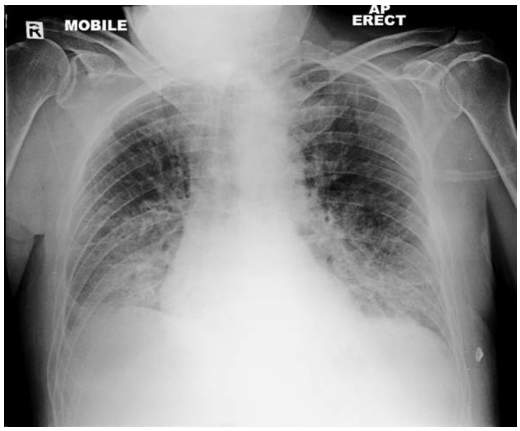

Fig. 1. Chest X-ray showing mild bi-basal shadowing, but no evidence of bowel perforation.

X-ray did not show any sign of perforation (Fig. 1). An urgent CT scan reported circumferential bowel wall thickening in the descending and sigmoid colon and pneumatosis, indicative of possible transmural infarction (Fig. 2). Flexible sigmoidoscopy and subsequent colonoscopy (Fig. 3) found ischaemic colitis of the sigmoid colon characterised by sloughy mucosa and ulceration.

There was negligible clinical improvement with conservative management; therefore, on day 3 of admission, it was decided to proceed with laparotomy + Hartmann's procedure. Pre-operatively, haemoglobin was 10.2 g/dl, platelets 162×10^9/l and INR 2.0, therefore 2 units of fresh frozen plasma were given.

Macroscopically, the excised colonic sample was 360 mm × 35 mm, with areas of bowel wall measuring up to 8 mm thick and ischaemia extending to one margin of the sample. Microscopically, histology showed extensive partial thickness infarction characterised by mucosal ischaemia and submucosal oedema. There was also a focal area of full thickness ischaemia. A

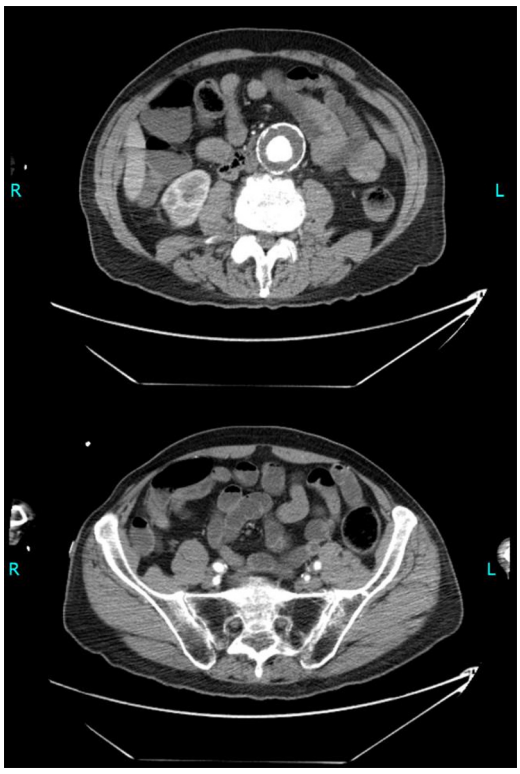

Fig. 2. Axial CT scan slices. CT scan showed circumferential bowel wall thickening in the descending and sigmoid colon and pneumatosis. No evidence of AAA leakage, infrarenal aneurysm measured 4.3 cm.

stricture was noted on histology, but no malignancy was present and the lymph nodes identified were reactive.

Intensive therapy unit (ITU) care was required in the immediate post-operative period and the patient made an uneventful recovery, albeit a minor wound infection around the 7th post-operative

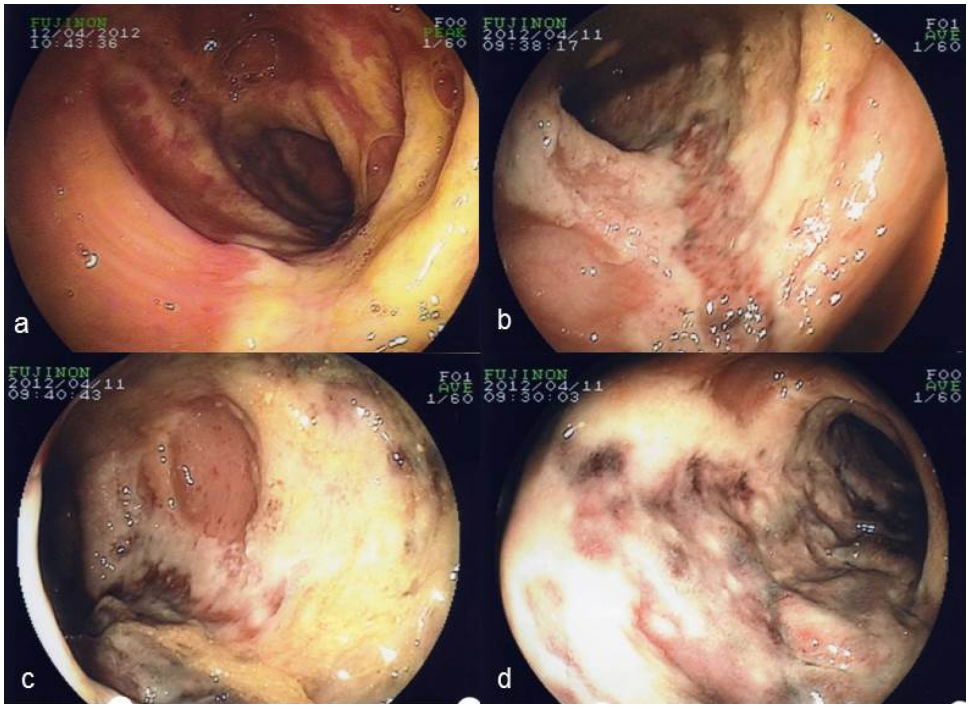

Fig. 3. Colonoscopy revealed findings consistent with moderately active ischaemic colitis of the sigmoid colon: (a) descending colon, (b) upper sigmoid, (c and d) sigmoid colon.