

CASE REPORT

Multiple small bowel ruptures due to ischemic enteritis: A case report

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Abstract

A rare case of multiple small bowel ruptures due to ischemic enteritis (ISE) is reported. The patient was admitted to the hospital with acute abdominal pain followed by bloody diarrhoeas. Preoperative colonoscopic findings were similar to those presented in Crohn's disease. Intraoperatively, ischemic lesions and multiple ruptures were localized at the jejunum and the proximal ileum. Histopathological examination of the resected bowel segment established the diagnosis of ISE. Although ISE is not common, concurred multiple ruptures of the small bowel is a rare but actual complication.

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Key words: Multiple small bowel ruptures; Ischemic enteritis

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INTRODUCTION

Ischemic enteritis (ISE) is caused either by interruption or significant decrease of the arterial inflow to the small intestine. Most patients are elderly, i.e., over sixty years of age. Younger patients, however, especially those with diabetes, lupus erythematosus or sickle-cell anaemia, may also present with ISE. Definite diagnosis of ISE cannot be established before histopathological results are obtained. ISE seems to be a rapid, progressive disease resulting in a 95% mortality rate^[1]. We report a rare case of acute abdo-

men due to multiple ruptures of the small bowel. ISE was proved to be the cause of the ruptures.

CASE REPORT

A 62-year old male presented with a two-month history of abdominal pain, watery diarrhoeas and occasionally fresh intestinal bleeding. Colonoscopy revealed aphthous ulcers both in the ascending colon and in the cecum. A small bowel series showed "tile-paved" images with multiple ulcers in the ileum. Furthermore, gastroscopy revealed the presence of aphthous ulcers in both the stomach and the duodenum. These ulcers were similar to those found in the colon. Biopsy specimens were taken from the stomach, the ileum, the cecum and the rest of the colon. The diagnosis of Crohn's disease was suspected and anti-Crohn's drug therapy was started. The histopathology results 8 d later, however, excluded Crohn's disease and revealed signs of focal enteritis without inflammatory reaction in the submucosa. Ten days after the first admission, the patient presented again in the emergency department suffering from acute abdominal pain accompanied by diarrhoeas and moderate intestinal bleeding. Physical examination revealed acute abdomen and the plain abdominal X-rays showed free air under the diaphragm. CT scanning confirmed liquid and air accumulation in the abdominal cavity.

The patient underwent emergency laparotomy. Intraoperatively, more than twenty micro-perforations localized in the mesenteric surface of the small bowel were found extending from the end of the jejunum to the middle of the ileum. Intestinal resection (about 60 cm in length) followed by side-to-side anastomosis was performed. Four days later, the patient developed similar symptoms of acute abdomen. On reoperation, numerous micro-perforations in both the jejunum and the remaining ileum were found. An additional small bowel resection (about 80 cm in length) was performed, followed by jejunostomy.

On the third postoperative day the patient was operated on again due to the same symptoms. Multiple perforations were encountered once more in the remaining small bowel and an additional bowel resection (approximately 120 cm in length) was performed. Within three days the patient developed renal and hepatic failure and died 2 d later. Macroscopically, the intestinal lesions were characterized by mucosal ulceration of variable length along the resected segments of small bowel, progressing to full thickness necrosis of the intestinal wall. Histopathological examina-

tion revealed numerous scattered segments of acute necrotizing enteritis with annular strictures and relatively shallow ulcers.

DISCUSSION

Two types of ISE have been described in the literature: occlusive and non-occlusive. Embolism or thrombosis of the superior mesenteric artery are the causes of occlusion in 30% and 25% of the patients respectively. Thrombosis of the superior mesenteric vein is responsible for occlusion in 20% of the patients. Non-occlusive ISE occurs in the remaining patients (25%)^[2]. Although the embolus in superior mesenteric artery embolism is usually installed in the middle colic artery, small intestinal branches are also sometimes occluded. The jejunum is affected in 20% and the ileum in 45%-55% of the patients respectively^[3]. Thrombosis of the superior mesenteric artery or vein is considered to be idiopathic in the majority of patients. However, it can also be related to diseases such as portal hypertension, septicaemia, lack of antithrombin III, lack of protein C or S, as well as chronic contraceptive pills intake^[4].

Non-occlusive ISE is due to low blood flow because of cardiac insufficiency, acute myocardial infarction, arrhythmias, dissecting aneurysm of the aorta, septicaemia and diabetes mellitus as well. Decrease of blood flow up to 80% of its normal value occurs due to prolonged vasoconstriction of the mesenteric vessels^[2]. According to Feurle *et al*^[5], analogous to ischemic colitis, an entity of acute ischemic small bowel enteritis exists, so that mesenteric ischemia apparently can induce a clinical syndrome of "regional enteritis", as occurred in our patient.

Early symptoms (acute abdominal pain and bloody diarrhoeas) and late complications (intestinal necrosis, peritonitis, septicaemia and shock) in our patient, were similar to those presented in the literature^[6].

The accuracy of angiography in localizing the site of embolism or thrombosis of the superior mesenteric artery is more than 95%. Its main advantage is that the catheter may remain in the artery, so that vasodilatation substances can be properly given^[7]. Angiography was not performed in our case due to acute abdominal symptoms. These symptoms led the patient to emergency laparotomy. The accuracy of CT scans in diagnosing mesenteric artery or vein thrombosis is approximately 80%. For embolism the rate is 45%-55%^[8,9]. CT scans, however, fail to establish the diagnosis in the majority of ISE cases, and this happened

in our patient as well. ISE due to superior mesenteric artery embolism can be treated by arteriotomy and embolectomy. The patient should undergo an aorto-mesenteric bypass in the case of thrombosis of the superior mesenteric artery. In initial stages of superior mesenteric vein thrombosis conservative treatment with high doses of heparin is recommended. Unfortunately, in most cases the diagnosis is established during laparotomy, due to acute abdominal symptoms. This occurred in our patient as well^[10].

In conclusion, ischemic enteritis is an uncommon but usually fatal clinical condition. The disease may lead to haemorrhage, intestinal necrosis, multiple small bowel ruptures, peritonitis, septicaemia, shock and death. Immediate diagnosis and proper medical and surgical therapy are crucial for a good prognosis. Unfortunately, a definite diagnosis of the disease is usually established after histopathological results of the resected bowel segment have been obtained. Although the disease is not common, it should be considered in the differential diagnosis of acute abdomen, especially when acute abdominal pain is accompanied by diarrhoea and/or intestinal bleeding.

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