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Case report

Development of colonic stenosis following severe acute pancreatitis

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Background

Colonic necrosis after acute pancreatitis is rare. When it does occur, it is commonly due to ischaemia or inflammation and may necessitate early colonic resection.

Case outline

A 72-year-old man developed colonic necrosis 6 weeks after severe acute pancreatitis. CT scan revealed a bulky mass near the left colon. Barium enema and colonoscopy revealed stenosis of the left colonic flexure, and this segment of bowel was successfully resected.

Discussion

Severe acute pancreatitis must be recognised as a cause of colonic ischaemia and necrosis. The possible pathogenic mechanisms include severe local inflammation and an ischaemic process. This complication is associated with a very poor prognosis despite surgical intervention, but a timely resection may prevent further problems.

Keywords

colonic necrosis, acute pancreatitis

Introduction

Colonic involvement is an uncommon but interesting complication of acute pancreatitis, and the splenic flexure is usually involved. Less than 50 cases of colonic stenosis have been reported in the literature [1], many of which have been confused with a carcinoma both radiologically, endoscopically and at laparotomy. Ischaemia is probably the most important cause of the stricture. We report a case of colonic stenosis of the splenic flexure.

Case report

A 72-year-old man presented as an emergency with abdominal pain. Biological and radiological examination revealed an acute pancreatitis due to biliary lithiasis, and it was classified grade E on the Balthazar score. The clinical course was marked by the appearance of a pancreatic pseudocyst near the body and tail of pancreas, 3 weeks after admission, heralded by resurgence of abdominal pain. Computed tomography (CT) revealed an abdominal mass near the descending colon 6 weeks after the onset of severe acute pancreatitis. The barium enema showed a colonic stricture at this site (Figure 1), and colonoscopy showed a bulky tumour at 45 cm from the anus.

There was neither clinical nor radiological improvment, and the patient was operated 8 weeks after admission. Laparotomy revealed a stenosing pericolitis localised to the splenic flexure, as a consequence of acute pancreatitis. Segmental colectomy with primary anastomosis was accompanied by external drainage of a pseudocyst and cholecystectomy (Figure 2).

Histological examination showed colonic necrosis and inflammation, especially subserosal, with no evidence of carcinoma. The patient had an uneventful recovery and was discharged on the 15th postoperative day.

Discussion

Pathological involvement of the colon secondary to acute or chronic pancreatitis is a rare complication that is of major clinical interest. In 1989, Aldridge and colleagues reported 36 cases of large bowel involvement in acute necrotising pancreatitis [2]. Colonic involvement may be either acute as a consequence of ischaemia and necrosis due to acute or chronic pancreatitis (or an acute

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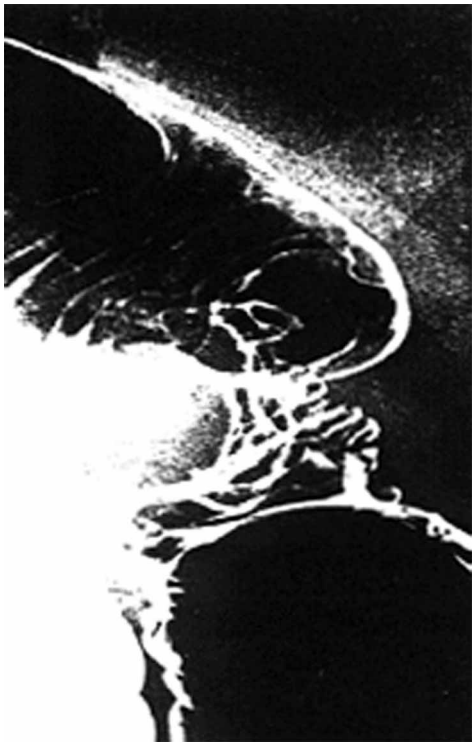

Figure 1. *Colonic stenosis shown by barium enema.*

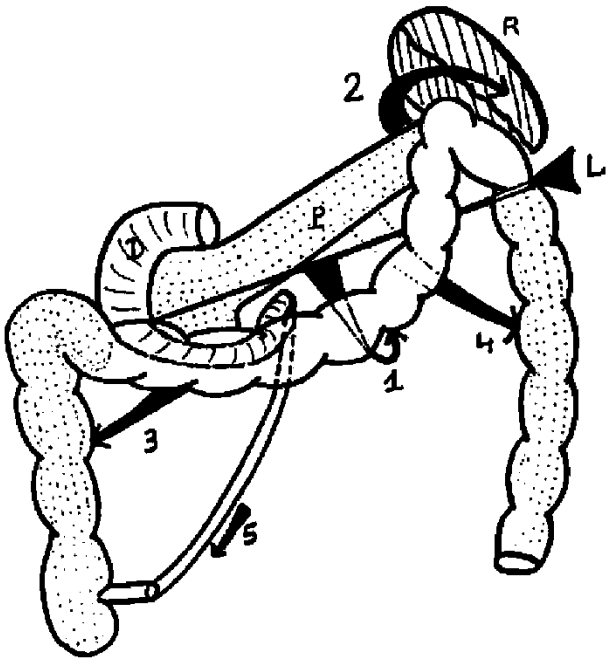

Figure 3. *Most frequently affected sites of diffusion of pancreatic lesions: D, duodenum; P, pancreas; R, spleen; L: phrenico-colic ligament. 1, transverse mesocolon; 2, gastro-colic ligament and phrenico-colic ligament; 3, right anterior pararenal space; 4, left anterior pararenal space; 5, mesenteric root.*

exacerbation of chronic pancreatitis) or may follow compression by a pancreatic pseudocyst [3, 4].

The anatomic relationship of the large bowel to the pancreas is an important factor in the genesis and localisation of these lesions. Because of contiguity with the tail of pancreas, the left colic flexure and the adjacent part of the transverse colon are the sites most frequently affected in pancreatitis (Figure 3).

Usually, the colonic involvement occurs as a result of diffusion of the necrotic process in the mesentery. Inflammation by pancreatic enzymes and ischaemic processes are the most popular theories put forward to explain this complication.

Colonic complications may present in three ways: compression of adjacent organs by a mesocolic mass, pericolitis with involvement of only the parietal layers of the large bowel, or ischaemic necrosis which is usually complicated by perforation and peritonitis or fistula.

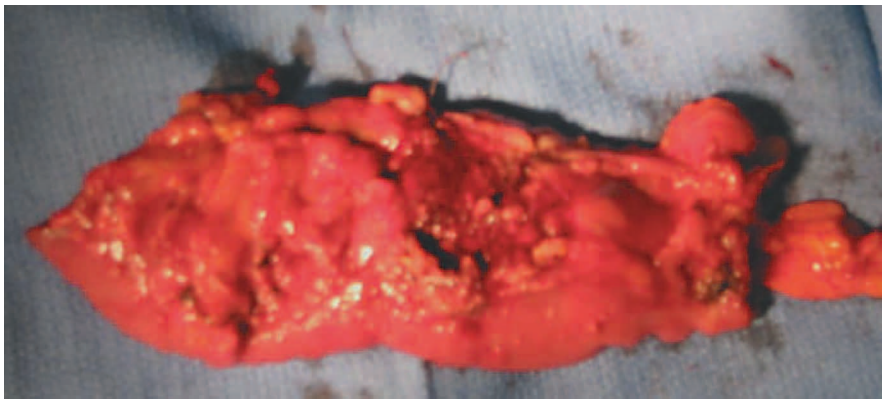

Figure 2. *The resected stenosing segment of colon.*

Large bowel necrosis represents an early complication of acute pancreatitis, with high mortality rates between 50% and 90% [5]. In the absence of colonic bleeding or perforation, early diagnosis of colonic necrosis is difficult. Stenosis of the bowel can be caused by either acute obstruction of the colon due to an inflammatory mass or progressive obstruction due to pericolic fibrosis [3]. In the present case, CT scan revealed a bulky mass near the left colon and the diagnosis was confirmed on barium enema and colonoscopy.

Colonic obstruction arising during the acute stage of pancreatitis is almost always spontaneously reversible, but it may herald more serious complications [1]. To prevent colonic damage, prompt drainage of retroperitoneal collections and aggressive debridement of all necrotic tissues is mandatory in pancreatitis with large bowel involvement [6]. Persistent colonic stenosis after acute or relapsing pancreatitis may point to an adjacent abscess.

Operation is only required in the case of an acute intestinal obstruction or necrosis associated with colonic stenosis. This aggressive policy is explained by the high mortality rate of colonic involvement in necrotising pancreatitis. We believe that only resection can prevent colonic perforation, which will otherwise lead to a sharp deterioration in the patient's condition [7]. In our case, histological examination revealed extensive necrosis due to enzymatic inflammation.

Indications for operation are also present in a patient with chronic pancreatitis with fixed stenosis causing definite obstruction of the large bowel. The usual treatment in this case is colonic resection, although some authors prefer a proximal diverting colostomy at first. Parc and co-workers performed a diverting loop ileostomy whenever colonic viability was found to be doubtful at laparotomy [8].

Some authors argue that the rate of unnecessary large bowel resections is high if histological specimens are taken into account [9]. One of the most important goals of surgical treatment in necrotising pancreatitis is to avoid the spread of infection from the retroperitoneum to the abdominal cavity. Our present belief is that segmental colonic involvement in necrotising pancreatitis should be treated by immediate resection, because macroscopic examination cannot evaluate the risk of progressive necrosis. Early resection is the only safe way to prevent the development of large bowel perforation and peritonitis.

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