Sigmoid Volvulus

This occurs in cases of long-standing chronic constipation where patients develop a large, elongated, relatively atonic colon, particularly in the sigmoid segment. It is often referred to as acquired or idiopathic megacolon. In sigmoid volvulus, a large sigmoid loop full of faeces and distended with gas twists on its mesenteric pedicle to create a closed-loop obstruction. If uncorrected, venous infarction leads to perforation and faecal peritonitis.

Epidemiology

- Sigmoid volvulus is a leading cause of acute colonic obstruction in South America, Africa, Eastern Europe and Asia but is rare in developed countries such as the USA, UK, Japan and Australia.\(^1\)
- Sigmoid volvulus is the third leading cause of colon obstruction in adults but is rare in infants and children.\(^2\)

Risk factors

- The elderly.
- Chronic constipation.
- Megacolon, large redundant sigmoid colon and excessively mobile colon.\(^2\)
- It is more common in men.\(^3\)

Presentation

- Most often it presents with sudden-onset colicky lower abdominal pain associated with gross abdominal distension and a failure to pass either flatus or stool.\(^4\)
- It may present insidiously with chronic abdominal distension, constipation, vague and usually colicky lower abdominal discomfort and vomiting.
- There may be a history of recurrent mild attacks relieved by passage of large amounts of stool and/or flatus.
- Vomiting occurs late, when the distension may be very severe.
- Abdominal examination reveals a tympanic, distended (but usually non-tender) abdomen and a palpable mass may be present.
- Shock and an elevation of temperature may be present if colonic perforation has occurred.
- Rectal examination shows only an empty rectal ampulla.
- Delay in diagnosis and treatment results in colonic ischaemia with features of perforation and peritonitis.

Investigations\(^5\)

- Plain abdominal X-ray: single grossly dilated sigmoid loop commonly reaching the xiphisternum.
- May need limited barium enema without bowel preparation (can result in decompression itself).
- CT scanning is the least invasive imaging technique that allows assessment of bowel wall ischaemia.

Differential diagnosis

- Other forms of large-bowel obstruction, especially carcinoma of the sigmoid colon.
- Pseudo-obstruction (reduced colonic motility and dilatation).
- Giant sigmoid diverticulum.
- Severe constipation.
Management

Urgent hospital admission and treatment are required. Acute sigmoid volvulus is a surgical emergency. Any delay in treatment increases the risk of bowel ischaemia, perforation and faecal peritonitis. The majority of patients can be successfully treated with non-operative decompression but elective definitive surgery has been recommended in view of the high recurrence rate (over 60%) and the risks of emergency surgery.

Decompression

- With the patient in the left lateral position, decompression and untwisting of the sigmoid loop may be achieved by passing a sigmoidoscope gently into the rectum as far as possible and passing a flatus tube alongside the sigmoidoscope. This is then gently manoeuvred into the obstructed loop through the twisted bowel, producing a rush of liquid faeces and flatus with relief of the obstruction.
- This procedure allows for rapid decompression of the distended colon, with the immediate relief of symptoms. The tube is left in place for 24 hours to maintain decompression, prevent recurrence and give time for vascular supply to the bowel wall to recover.
- The patient should be observed for persistent abdominal pain and bloodstained stools, which may indicate ischaemia and the need for surgical intervention.

Surgery

After conservative treatment, further episodes of volvulus often occur and elective surgery is then frequently required to prevent further recurrence.

- Resection of the redundant sigmoid colon is the gold-standard operation. This is usually, a double-barrelled colostomy where both divided ends of bowel are brought out on to the abdominal wall (Paul-Mikulicz procedure).
- It is indicated for patients in whom tube decompression fails or for those who have signs suggesting bowel ischaemia.
- Sigmoidectomy with primary anastomosis is a good option for the definitive management of sigmoid volvulus.

Complications

- Recurrence.
- Bowel obstruction.
- Perforation and faecal peritonitis.

Prognosis

- The overall mortality in recent studies is less than 5%.
- However, the reported mortality rates in some studies are as high as 20-25%, depending on the interval between diagnosis and treatment.

Further reading & references


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