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A single centre case series of gallstone sigmoid ileus management

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ABSTRACT

AIMS/INTRODUCTION: Gallstone sigmoid ileus is a rare condition that presents with symptoms of large bowel obstruction secondary to a gallstone impacted within the sigmoid colon. This arises because of three primary factors: cholelithiasis causing a cholecystoenteric fistula; a gallstone large enough to obstruct the bowel lumen; and narrowing of the bowel.

We describe 3 patients treated in a district general hospital over a 3-year period, and discuss their management.

METHODS: Cases were retrospectively analysed from a single center between 2015 and 2017 in line with the SCARE guidelines.

RESULTS: 3 patients – 2 female, 1 male. Age: 89, 68, 69 years. 2 cholecystocolonic fistulae, 1 cholecystoenteric (small bowel) fistula.

Patient 1: Unsuccessful endoscopic attempts to retrieve the (5 × 5 cm) gallstone resulted in surgery. Retrograde milking of the stone to caecum enabled removal via modified appendicectomy.

Patient 2: Endoscopy and lithotripsy failed to fragment stone. Prior to laparotomy the stone was palpated in the proximal rectum enabling manual extraction.

Patient 3: Laparotomy for gallstone ileus failed to identify a stone within the small bowel. Gallstone sigmoid ileus then developed. Conservative measures successfully decompressed the large bowel 6 days post-operation.

CONCLUSIONS: This is the first case series highlighting the differing strategies and challenges faced by clinicians managing gallstone sigmoid ileus. Conservative measures (including manual evacuation), endoscopy, lithotripsy and surgery all play important roles in relieving large bowel obstruction. It is essential to tailor care to individual patients' needs given the complexities of this potentially life threatening condition.

1. Introduction

Gallstone sigmoid ileus is a rare condition that presents with symptoms of large bowel obstruction. The name is somewhat of a misnomer given that the condition relates to colon rather than small bowel. Gallstone sigmoid ileus arises as a result of three primary factors; cholelithiasis causing a cholecystoenteric fistula, a gallstone wide enough to obstruct a large bowel lumen and narrowing of the bowel.

Two mechanisms exist by which a gallstone can pass into the large bowel and obstruct the lumen, cholecystocolonic and cholecystoenteric fistulas. The cholecystocolonic route represents the more common pathway for gallstone sigmoid ileus to arise. The other being that the gallstone transits the small bowel via the ileocaecal valve before becoming lodged in the sigmoid colon.

Given the rarity of such presentations there is no guidance available to direct clinical management. Strategies to relive luminal obstruction vary extensively from conservative measures to endoscopy/lithotripsy to surgery. Management strategies appear to be tailored to the individual's condition and center's expertise.

We present 3 patients from a district general hospital within a 3-year period treated for gallstone sigmoid ileus. These cases add to literature by emphasizing the need for diagnostic awareness in patients with large bowel obstruction and highlighting what may be an under reported condition.

2. Methodology

Three patient presentations were analysed and reported inline with SCARE guidelines [1] from a single center.

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Fig. 1. Coronal CT image of abdomen demonstrating a hyperechoic mass in the sigmoid colon.

Fig. 2. Gallstone impacted within the sigmoid colon.

Fig. 3. Gallstone remains impacted within the sigmoid colon.

3. Results

3.1. Patient 1

An 89-year-old woman presented as an emergency with an 8-day history of vomiting, abdominal pain and constipation [2]. Comorbidities included diverticulosis, hypothyroidism and hypertension.

Clinical findings elicited localised guarding in the left lower quadrant with a distended tympanic abdomen. Abdominal x-ray revealed dilated loops of both large and small bowel. A computerized tomography (CT) scan (Fig. 1) showed cholecystitis; a cholecystocolonic fistula between gallbladder and hepatic flexure of colon; widespread diverticulosis and a high attenuation mass (representing a gallstone) in the proximal sigmoid colon.

Two consultants initially attempted non-surgical management with flexible sigmoidoscopy. This proved unsuccessful in dislodging the stone owing to poor visibility, stone size and diverticular disease. Given the risk of iatrogenic perforation to the bowel, surgery was required.

The patient underwent a lower midline laparotomy during which the gallstone was found impacted within a diverticular segment of sigmoid colon. The cholecystocolonic fistula was identified but left alone. Attempts to pass the stone distally via the rectum were unsuccessful. The gallstone was milked back to the caecum. Appendicectomy was performed, with the appendiceal opening dilated enough to allow the gallstone to be extracted and the colon decompressed. The Aappendix base was closed with a linear stapling device and the staple line oversewn. The gallstone measured 5×5 cm. The patient recovered well and discharged six days post surgery.

3.2. Patient 2

A 69-year-old woman presented with a 7-day history of vomiting and absolute constipation for 24 h. The patient had undergone attempted laparoscopic cholecystectomy 2 months earlier. Surgery was abandoned because the gallbladder was covered by omentum and surrounded by dense adhesions.

Colonoscopy earlier in the year was normal, demonstrating no evidence of a cholecystocolonic fistula or diverticular disease. Past medical history included a hysterectomy 10yrs prior, bilateral knee replacements for osteoarthritis and cholelithiasis.

On examination the patient's abdomen was tender in the left lower quadrant. Bloods on admission demonstrated raised inflammatory markers; white blood cell count (WBC) of 12.2 and C-Reactive Protein (CRP) of 156. Intravenous fluids and antibiotics were commenced for suspected diverticulitis.

CT (Fig. 2) demonstrated a large calcified gallstone (maximum diameter 4.8 cm) in the distal sigmoid colon, with mural thickening, oedema, and inflammatory stranding of the mesenteric fat. Bowel obstruction down to this level was noted, with a maximal caecal caliber of 9.1 cm.