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Acute Perforated Diverticulitis- A Case Report



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ABSTRACT

Diverticula are small, bulging pouches that can form in the lining of the digestive system. They are found most often in the lower part of the large intestine (colon), which can range from pea-size to much larger. Diverticula are formed by increased pressure on weakened spots of the intestinal walls by gas, waste, or liquid. Diverticula can be formed while straining during a bowel movement, such as constipation. When numerous tiny pockets or diverticula are formed in the lining of the bowel it is called diverticulosis. Diverticula are common, especially after the age of 40, and seldom cause a problem. Sometimes, however, one or more of the pouches become inflamed or infected. The condition is then known as diverticulitis. This usually happens when outpouchings become blocked with waste, allowing bacteria to build up, causing infection. Diverticulitis can cause severe abdominal pain, fever, nausea, rectal bleeding, and a marked change in bowel habits.

INTRODUCTION

Diverticular perforation is a common complication of diverticulitis and can lead to the creation of abscesses. Diverticular disease affects mainly persons over forty years of age especially in western countries, with the left colon representing the most common site of presentation (1). Most patients remain asymptomatic, while 20% of cases present symptoms (2). Risk factors include obesity, smoking, and low fiber diet, but pathophysiology may also include a connection between diverticulitis, inflammatory disease, and irritable bowel syndrome (3). Possible complications include abscesses, perforation, strictures, or the formation of fistula, altogether of a rate of 25%(2). Diverticulosis and colonic diverticular diseases (CDDs) are increasingly common clinical conditions that are more frequently encountered in elderly patients and industrialized countries (4). One of the chief complications of CCDs is colonic diverticular hemorrhage (CDH), and the incidence rate has been increasing. CDH is the most common cause of severe lower gastrointestinal bleeding in adults, accounting for 30-50% of cases of massive rectal bleeding (5-7). Approximately 10-25% of patients with known colonic diverticulosis will have diverticulitis in their lifetime (8).

Case report:

A 53-years old male presented with lower abdominal pain at the Accident and Emergency (A & E) department of Suri Seri Begawan Hospital at Kuala Belait, Brunei. There was no history of fever or chills, no nausea, vomiting, or any obstructive urinary symptoms. On examination there was tenderness at the suprapubic area, no guarding, and bowel sound was positive. He was treated conservatively and discharged. The patient came again after five days with the complaint of generalized abdominal pain for the last 24 hours. He had no fever or vomiting. On examination, mild tenderness was found over the left iliac fossa. The patient was advised for a plain X-ray abdomen. On X-ray there was no sign of perforation, few small and large bowel loops were loaded with fecal matter and gas.

The patient was admitted and advised for a contrast-enhanced CT scan of the abdomen. In CT scan there was a heterogeneous area seen in the pelvis around the sigmoid colon consistent of peri colonic fat stranding and pockets of air associated with irregular wall thickening of sigmoid colon with noticed diverticular. No free fluid was seen. The free air extended from the pelvis

cranially in the midline to the retro and intraperitoneal region and up to the scanned inferior mediastinum (Fig A, B, & C).

The radiological diagnosis was acute perforated diverticulitis. The surgery was done. Operative findings were large pericolic abscess (12 x 8 x 5cm) with about 300ml of pus. No growth or any other collection was found. A sigmoid colectomy with end-to-end anastomosis and a protective loop colostomy was done. Post-operative colonoscopy was normal. A closer colostomy was done after six months.



Figure A -Coronal CT scan



Figure B-Coronal CT scan



Figure C - axial CT scan

DISCUSSION

Perforation of diverticulitis occurs secondary to severe inflammation of bowel wall layers with subsequent necrosis and loss of intestinal wall integrity. Perforation from colonic diverticulitis almost always occurs on the left side (9). Well-contained perforations manifest as small and self-limited; however non-contained perforations which occur in 1%-2% of patients with acute diverticulitis may lead to local abscess and fistula formation (10-12). Free air is usually detected locally with well-contained perforation while widespread intra-abdominal free air is detected in large non-contained perforations (10-11). Intra-peritoneal perforation may present with acute abdominal pain, nausea, and vomiting. Retroperitoneal air can result from perforation of the second and third portion of the duodenum, posterior aspect of ascending or descending colon segments.

Ultrasonography is generally the first imaging modality used in the evaluation of acute abdomen. In diverticulitis, ultrasound demonstrates inflamed diverticulum as a non-compressible out-pouching of a bowel wall with thickened and hypoechoic wall often containing an obstructive fecolith at the ostium.

Computed tomography (CT) scan is the mainstay imaging technique in the diagnosis of diverticulitis and its complications. Common CT scan findings include pericolic fat infiltration, wall thickening, and muscular hypertrophy. The severity of inflammation, involvement of bowel segment, and local and distant complications of diverticulitis can be assessed with CT.

Complications of diverticulitis may be highly variable, and it may be difficult to diagnose diverticulitis as an underlying cause of severe complications. Small-sized, well-contained perforations are common in the course of the disease and most cases can be managed conservatively with antibiotics and supportive medical treatment. However, unusual and more severe complications such as non-contained perforations, phlegmon, and abscess, pylephlebitis, intestinal obstruction, bleeding, and fistula necessitate intensive management. These conditions should be promptly diagnosed and treated to prevent increased morbidity and mortality.

Complications of diverticulitis are perforation, abscess, pylephlebitis (ascending septic thrombophlebitis), bowel obstruction, bleeding, fistula, peritonitis, etc.

The differential diagnosis includes irritable bowel syndrome, appendicitis, inflammatory bowel disease, cystitis, endometriosis, ectopic pregnancy, ovarian torsion, pelvic inflammatory disease, colitis from any cause, and colon cancer.

The most well-known classification system for diverticulitis is the Hinchey classification, described in 1978 based on operative findings at the time of surgery (13). Hinchey stage 1 is considered uncomplicated diverticulitis and is defined by diverticulitis with a pericolic phlegmon or a small pericolic (<2cm) abscess. Hinchey stage 2 falls under the category of complicated disease and is defined as diverticulitis with a pelvic, abdominal, or retroperitoneal abscess. Hinchey stages 1 and 2 are contained perforations, usually caused by micro-perforation. Hinchey stage 3 is defined as diverticulitis with generalized purulent peritonitis, while Hinchey stage 4 is diverticulitis with generalized feculent peritonitis. Our case falls in Hinchey stage 3.

CONCLUSION

Patients with uncomplicated (Hinchey stage 1) diverticulitis are managed conservatively. Hinchey stage 2 is typically managed by percutaneous drainage and conservative measures. Elective resection is indicated in these patients because their risk of developing another episode of complicated diverticulitis is higher (14). Hinchey stage 3 (purulent peritonitis) and 4 (feculent peritonitis) require emergency surgery.

Conflict of interest: None.

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