International Surgery Journal
Sabu MRK et al. Int Surg J. 2022 Oct;9(10):1745-1749
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20222600

Case Series

A series of emergency presentations of diverticular disease of colon

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Received: 21 August 2022
Revised: 18 September 2022
Accepted: 20 September 2022

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ABSTRACT

Diverticular disease of the colon is commonly prevalent in developed countries, especially in the western population. This is mainly attributed towards their food habits which include less dietary fibre which is the primordial cause of diverticular disease. Its incidence is gradually increasing in developing countries, especially in southern parts of India due to rapid change in food habits which are moving towards western culture. Majority of the patients with diverticular disease may remain asymptomatic. Diverticular disease presents to the hospital with a wide variety of symptoms such as lower abdominal pain, fever, malaise, bleeding per rectum which manifests because of its complications. Hence the early presentations of diverticular disease should not be missed and proper evaluation should be carried out in suspicious cases to prevent complications which can be deadly. Here we present a series of cases that are received in our emergency department as a complication of diverticular disease. This is a case series in which we study the emergency presentations of diverticular diseases admitted in Rajiv Gandhi government general hospital. Here diverticular disease is proven by a series of investigations that include evaluation of acute abdomen such as x ray abdomen erect, ultrasound abdomen, contrast enhanced computed tomography and histopathological examination with appropriate management.

Keywords: Diverticular disease, Diverticulitis, Abdominal pain, Intra-abdominal collection, Fever

INTRODUCTION

Diverticulosis is the formation of abnormal outpouchings from the intestinal lumen which occurs as a result of mucosal herniation through weak points in the intestinal wall. The main pathology of this condition is high segmental intra luminal pressure due to peristaltic dysfuntion.[1] The most commonly affected part of the bowel is the sigmoid colon. Diverticular disease represents symptoms referable to the presence of diverticulosis, which includes bleeding, perforation, segmental colitis.[2] As age increases, the incidence of diverticular disease also increases. Diverticular disease affects 50% of those aged more than 60 years and almost 80 % of the population aged more than 80 years.[3] In western countries, it is more common in left side, i.e., sigmoid and descending colon. In Asian people, diverticula are more common in the right side.[4] Here in this case series, we present a series of cases with different presentations of diverticulitis.

CASE SERIES

Case 1: sigmoid volvulus

A 44-year-old male admitted with complaints of inability to pass flatus for the past 3 days and inability to pass stools for the past 4 days. There was history of abdominal distension. On examination, patient is conscious, oriented, afebrile and his vitals showed heart rate of 110 bpm, blood pressure 120/80 mmHg with normal body temperature. Per abdomen findings revealed abdomen distension more in the left lower quadrant with no guarding and rigidity. Per rectal examination showed rectal ballooning and no faecal staining. He was then proceeded with radiological investigations where contrast

enhanced computed tomography showed dilated sigmoid colon suggestive of sigmoid volvulus. He was resuscitated with intravenous fluids, analgesics and nasogastric aspiration after which he was proceeded with resection of sigmoid colon followed by reconstruction. The patient was discharged with uneventful post operative period.

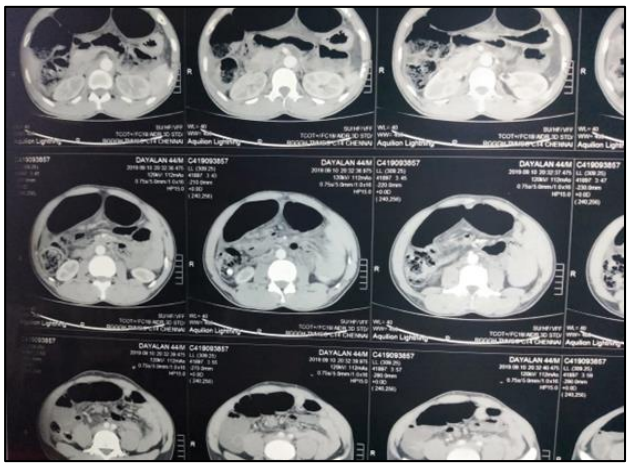

Figure 1: CECT of dilated bowel large bowel loops suggestive of sigmoid volvulus.

Figure 2: Intra operative picture of sigmoid volvulus.

Figure 3: Resected specimen of sigmoid volvulus.

Figure 4: Intra operative picture of colorectal anastomosis.

Case 2: sigmoid perforation

A 48-year-old male admitted in our emergency ward with symptoms of diffuse abdominal pain for the past 2 days, pain started in the left lower quadrant and then it became generalised. There was history of obstipation for the past 2 days and fever for the past 1 day. On general examination, patient was anxious, oriented, febrile with heart rate 125 bpm, blood pressure of 120/80 mmHg. Per abdomen findings showed diffuse guarding and rigidity, diffuse tenderness. Per rectal examination revealed no faecal and blood staining. He was proceeded with radiological investigation where computed tomography revealed free fluid in the abdomen in view of peritonitis. Patient was taken up for emergency laparotomy. Intra operative findings showed diffuse feculent peritonitis with diverticulitis causing perforation in the sigmoid colon. A Hartmann's procedure was then performed. Post operative period was uneventful and the patient was discharged on the 10th post operative day.

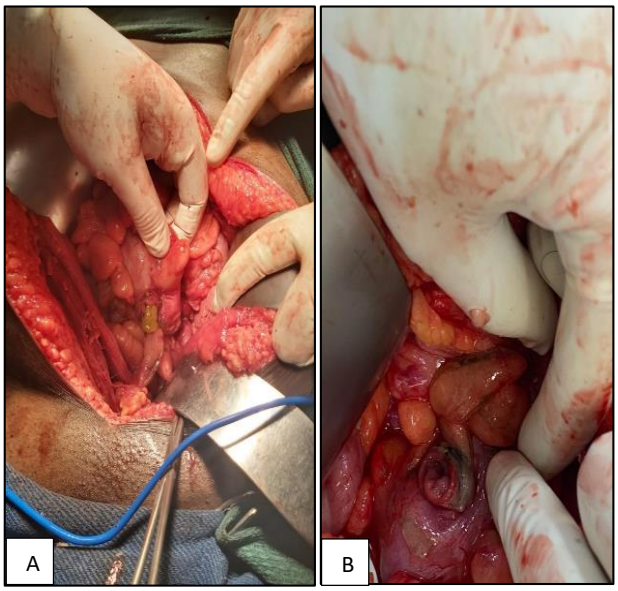

Figure 5 (A and B): Intra operative pictures showing sigmoid diverticulitis with perforation.

Case 3: Pouch of douglas collection

A-65 year old male admitted in our emergency department with complaints of fever on and off for the past 1 week, abdominal pain for the past 1 week, abdominal distension for the past 4 days, inability to pass stools for the past 4 days. The patient was a known case of hilar cholangiocarcinoma and is under palliative chemotherapy. On examination, patient was conscious, oriented, tachypnoeic, febrile with heart rate 120 bpm, blood pressure 100/70 mmHg, respiratory rate 26/min. Per abdomen findings revealed abdomen distension localised to the lower abdomen, no palpable mass, no guarding or rigidity. Bowel sounds were absent. Per rectal findings include warm boggy swelling in the anterior wall. Routine blood investigations done which showed leucocytosis with WBC count 23000 cells/mm^3, elevated direct bilirubin and renal function test. Computed tomography findings include enhancing wall thickening with mass noted in the region of primary confluence and proximal common hepatic duct causing bilobar intra hepatic biliary radicle dilatation. Intra peritoneal loculated collection with enhancing walls noted in right iliac fossa and pelvis and wall thickening noted in sigmoid colon suggestive of diverticulitis with collections. The patient then proceeded with ultrasound guided percutaneous drainage using 14 Fr pigtail catheter. About 150 ml of purulent discharge was collected. Pigtail drain removed after 7 days after ultrasound showed no significant collection. The patient was referred to medical oncology for palliative chemotherapy.

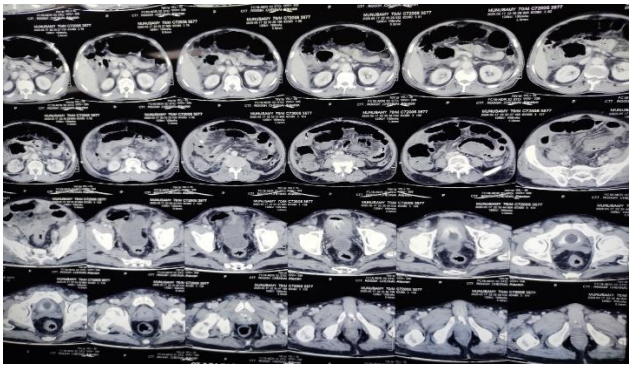

Figure 6: CT picture showing intra peritoneal loculated collection.

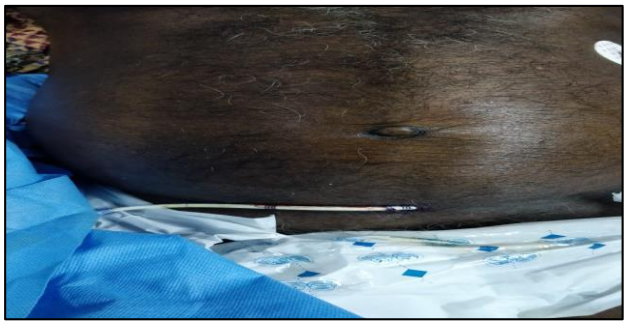

Figure 7: Percutaneous drainage for that patient.

Case 4: Pneumoperitoneum with multiple diverticuli

A 63 year old male admitted in our emergency department with chief complaints of abdominal pain, abdominal distension, fever inability to pass flatus and stools for the past 4 days. On general examination, the patient was drowsy, pale, vitals showed heart rate 120 bpm, blood pressure 80/50 mmHg. The patient was immediately resuscitated with intravenous fluid, analgesics and antibiotics. Per abdomen findings revealed the abdomen was distended with diffuse tenderness, guarding and rigidity. Obliteration of liver dullness was seen. After stabilisation of the patient, he was shifted for computed tomography of the abdomen which revealed pneumoperitoneum along with sigmoid wall thickening and pneumatosis intestinalis. In view of peritonitis, patient was taken up for emergency laparotomy. Intraoperative findings were perforation of the sigmoid colon with multiple diverticuli extending till descending colon for which resection of entire diseased segement was done along with anastamosis of descending colon with rectum. Post operative period was uneventful.

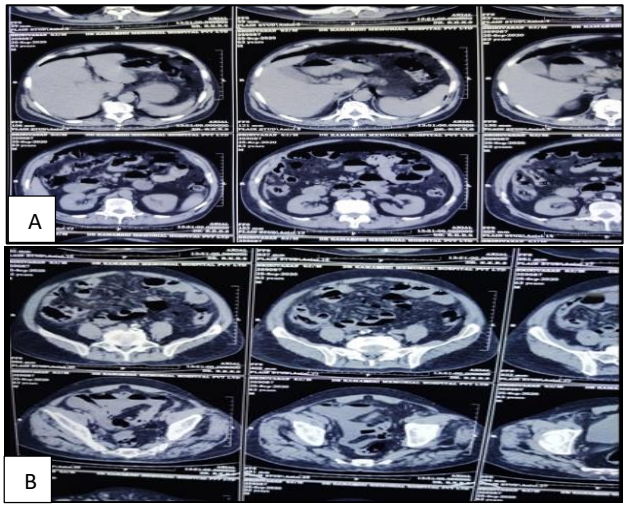

Figure 8 (A and B): CT of pneumoperitoneum and wall thickening along with pneumatosis intestinalis suggestive of diverticulitis.

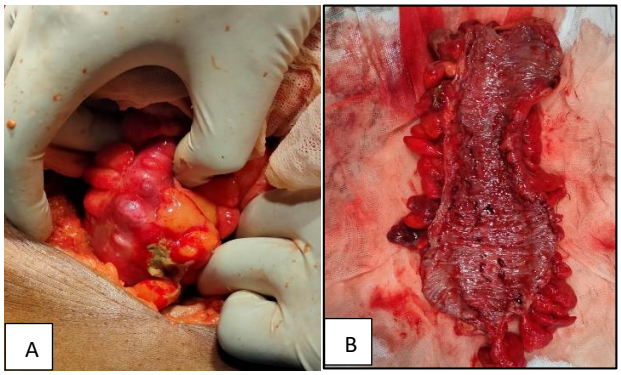

Figure 9 (A and B): Perforation in sigmoid colon, multiple diverticulum (left) and resected sigmoid with multiple diverticulum (right).

Figure 10: Intra operative picture of descending colon and rectum.

Case 5 : generalised purulent peritonitis

A 74 year old male was admitted with chief complaints of abdominal pain, fever and vomiting for the past 2 days. There was no constipation or obstipation. Patient was a known case of hypertension and coronary atery disease for the past 7 years. On examination, patient was conscious, oriented, febrile, heart rate was 106bpm, blood pressure 170/90 mmHg. Per abdomen finding include diffuse tenderness with guarding. Per rectal findings showed normal faecal staining. Ultrasound abdomen was performed which showed pyoperitoneum. The patient was proceeded with emergency laparotomy and 250 ml of pus was aspirated. Small bowel distension was seen. Descending colon and sigmoid colon found to be inflammed and edematous. There was no evidence of obstruction or perforation. As the patient has known cardiac disease, in view of hemodynamic instabilty, patient was given a thorough peritoneal lavage and two large bored drainage tubes were kept and closure was done. Patient was extubated on the 2nd post operative day and weaned off from inotropes on the 3rd post operative day. Drainage tubes were removd on the 8th post operative day. Patient was discharged with dietary advice and oral antibiotics.

DISCUSSION

Colonic diverticulosis refers to small outpouchings from the colonic lumen due to mucosal herniation through the colonic wall at sites of vascular perforation. Abnormal colonic motility and inadequate intake of dietary fibre have been implicated in its pathogenesis.[5] Diverticulitis is best defined as the micro-perforation or macroperforation of colonic diverticula causing localised inflammation that may progress to localised abscess, frank peritonitis, stricture or fistulisation to adjacent structures.[6] Common symptoms include vague abdominal pain and abdominal mass; some patients present with diarrhoea, constipation, fever, nausea and vomiting or rectal bleeding.[7] Sigmoid diverticulitis is the most common cause of left lower quadrant pain in adults, and when imaging is required, CT is the most appropriate diagnostic imaging tool to confirm suspected left colonic diverticulitis. CT serves the following functions in the setting of left lower quadrant pain: (1) confirms the diagnosis of diverticulitis, (2) evaluates the severity and extent of disease, (3) allows for treatment planning of complications such as abscess, and (4) demonstrates other causes of abdominal pain that may mimic diverticulitis.[8] CT signs of diverticulitis include focal inflammatory wall thickening and paracolic inflammation superimposed on diverticular disease (diverticula, muscular wall hypertrophy). Common alternative conditions that can clinically mimic diverticulitis include small bowel obstruction, primary epiploic appendagitis, acute cholecystitis, appendicitis, ileitis, ovarian cystic disease, and ureteral stone disease.[9] Routine colonoscopy yields little benefit in patients with acute diverticulitis and more refined criteria should be developed. The use of colonoscopy should be limited to situations in which the diagnosis of diverticulitis is unclear. In the absence of other indications, a subsequent colonoscopic evaluation may not be required to confirm the diagnosis.[10] Hinchey's classification distinguishing five stages of acute diverticulitis is widely used globally.

Hinchey's classification: stage 0: clinically mild diverticulitis, stage Ia: pericolic inflammation, Stage Ib: pericolic or mesocolic <5 cm abscess, Stage II: intra-abdominal, pelvic or retroperitoneal abscess or abscess distant from the primary inflammation, stage III: generalized purulent peritonitis, stage IV: fecal peritonitis.[11]

For Hinchey stages I and II conservative treatment, bowel preparation and early elective resection with primary anastomosis should be attempted. In cases of general peritonitis (Stages III and IV) Hartmann's operation is still the treatment of our choice.[12] The patients in Hinchey stage II with abscesses of >3 cm were treated with conservatively as described above, with the addition of the ultrasound guided placement of percutaneous drain (PCD) through the anterior abdominal wall or trans-vaginally.

CONCLUSION

Even though diverticular disease of colon is rare in southern parts of India, it is rapidly increasing in prevalence due to the increasing colonoscopic examination and adoption of western food habits and lifestyle by Indian population. Western diet contains low fibre foods, red meat is positively associated with symptoms of diverticular disease. Here the cases we discussed are not routine presentation of diverticular disease.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Sabu MRK, Kannan R, Prabakar J. A series of emergency presentations of diverticular disease of colon. Int Surg J 2022;9:1745-9.