



A Rare Case of Cecostomy Tube in Complicated Acute Appendicitis Leading to Fecal Peritonitis

Authors

Sandeep Verma*¹, Vedit², Rituparna³, Bhavinder K Arora⁴

¹Senior Resident Department of General Surgery, PGIMS Rohtak

²Junior Resident Department of General Surgery, PGIMS Rohtak

³Emergency medical officer, SPS Hospitals, Ludhiana

⁴Professor, Department of General Surgery, PGIMS Rohtak

*Corresponding Author

Sandeep Verma

Abstract

The most common abdominal surgical emergency in the world in acute appendicitis. Most common age group involved is between first to second decades but patients at extreme age have higher mortality rate due to late presentation. We are presenting a case of appendicitis which was complicated as long history at time of first surgery which led to caecal injury which was managed with cecostomy. 62 years gentleman was referred from private hospital with fecal discharge from the open appendectomy wound and cecostomy tube insitu. Patient was diagnosed as phlegmon sequelae of acute appendicitis. Patient underwent emergency laparotomy, peritoneal lavage, removal of cecostomy tube, primary repair of caecal perforation and diversion loop ileostomy. Patient recuperated well. This case report highlights the challenges faced and complexities associated with failure of cecostomy in managing caecal perforation following laparoscopic appendectomy. The conversion from a laparoscopic approach to an emergency open appendectomy followed with cecostomy proved to be a vital decision in the face of phlegmon sequelae of acute appendicitis. The phlegmonous nature of acute appendicitis should be managed conservatively otherwise leading to a more aggressive surgical intervention.

Keywords: *Acute appendicitis, cecostomy, ileostomy, fecal discharge, phlegmon, complicated appendicitis.*

Introduction

The most common abdominal surgical emergency in the world in acute appendicitis. Most common

age group involved is between first to second decades but patients at extreme age have higher mortality rate due to late presentation^[1]. The exact

etiology of acute appendicitis is unknown but mostly due to obstruction. Appendicitis may be due to lymphoid hyperplasia, carcinoid tumor, parasitic infection and adenocarcinoma of appendix^[2]. There are two type of appendicitis one is uncomplicated which accounts 20-30% and remaining are complicated appendicitis which includes perforated and gangrenous appendix^[3]. We are presenting a case of acute appendicitis which had phlegmon, sequalae of acute appendicitis as long history at time of first surgery which led to caecal injury which was managed with cecostomy but did not work. Presenting this case to avoid surgical intervention in complicated appendicitis if possible.

Case Presentation

62 years gentleman came to emergency department with pain in abdomen, fecal discharge from cecostomy tube and purulent discharge from pelvic drain for last 5 days. Patient referred to us from the private hospital. He had pain in right iliac fossa for last 7 days. He was diagnosed with complicated acute appendicitis. Ultrasound report was showing a blind ending, tubular, non-peristaltic structure measuring 10.9 mm in right iliac fossa with mural thickening of caecum and ascending colon with surrounding fat stranding (figure 1).

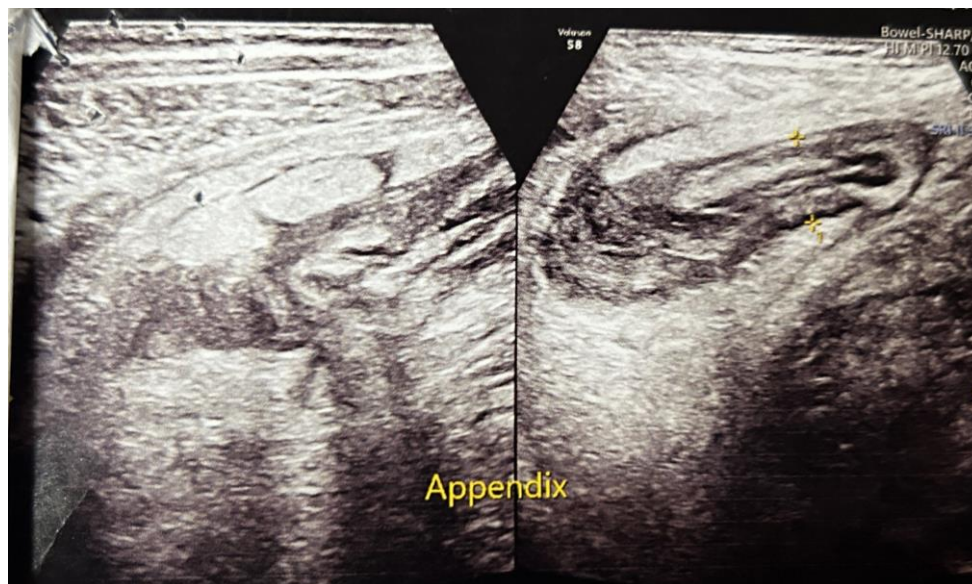


Figure 1: Ultrasound showing distended appendix with surrounding fat stranding.

He was taken for laparoscopic appendectomy but had caecal injury during the procedure, converted to open procedure, appendectomy was done and 22 F foley's catheter was inserted from the caecal perforation site and was partially inflated. But postoperative patient remained comfortable but on postoperative day (POD) 2, he had high grade fever, leukocytosis, fecal discharge from the

wound and purulent discharge from pelvic drain. Patient referred to us on POD 5. Patient was taking orally, passing stool and flatus. On examination, he was afebrile, conscious, tachycardia, blood pressure was 130/90 millimeter of mercury, chest was normal, abdomen was showing fecal discharge from open wound (figure 2).

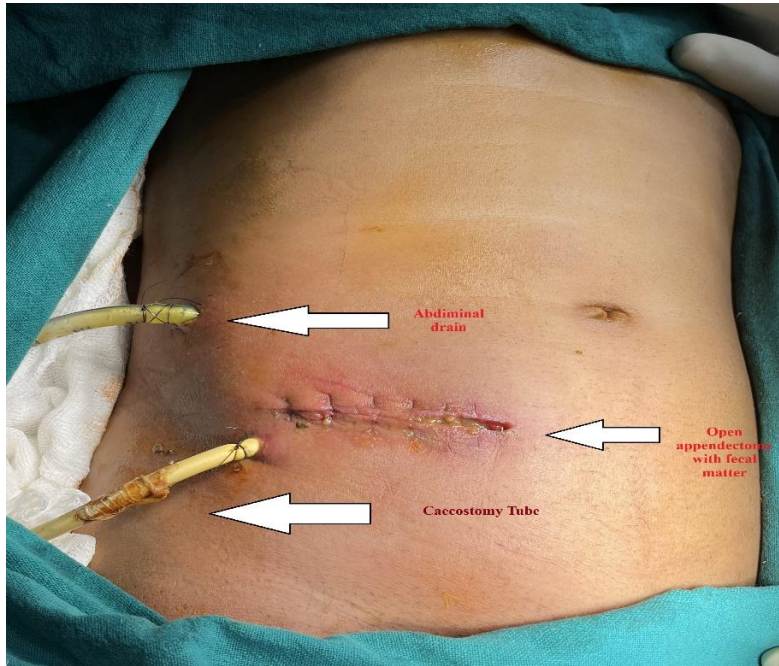


Figure 2: Showing cecostomy tube and fecal discharge from open appendectomy wound.

He was immediately resuscitated with intravenous fluids, antibiotics, urinary catheterization, nasogastric tube insertion. He was planned for midline laparotomy, intraoperatively there was 300cc of purulent collection in pelvis, pus flakes

all over small bowel, distal 50 cm of distal ileum in edematous, fecal collection in right iliac fossa. We gradually dissected caecum and cecostomy was removed (figure 3,4).

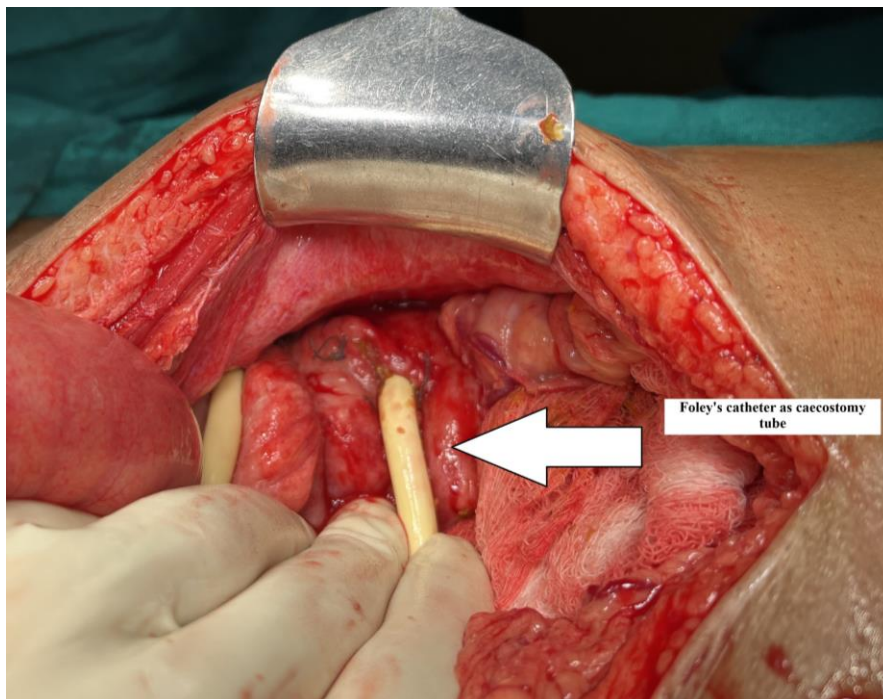


Figure 3: Showing Foley's catheter 22F in caecum

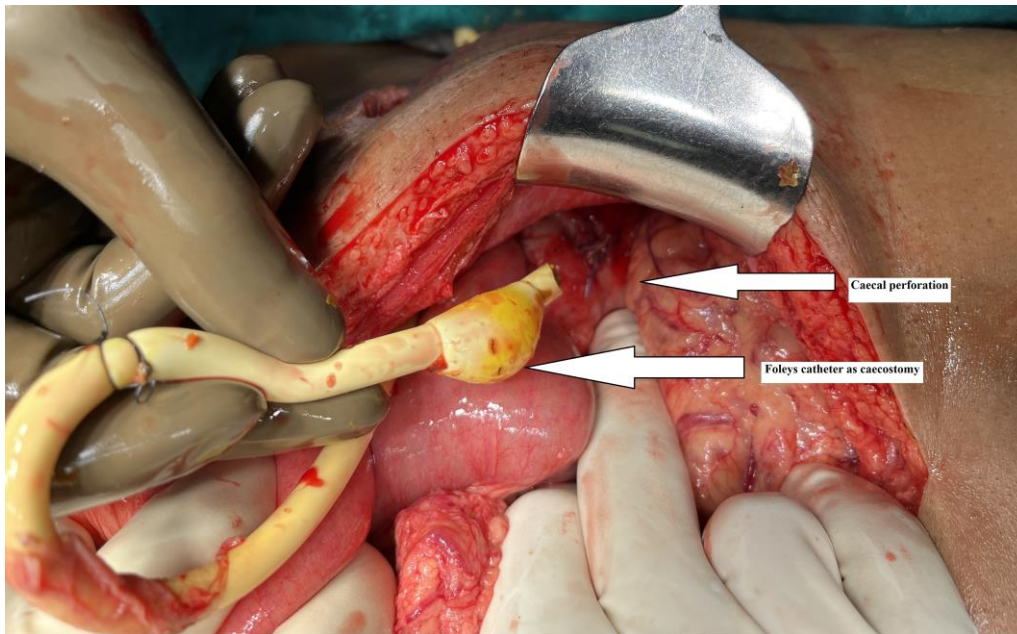


Figure 4: Showing removal of Foley’s catheter 22F from caecum

Thoroughly irrigation was done with warm saline, 2x2cm caecal perforation with surrounding edema was there, margin freshened and primary closed with intermittent layer with silk 2-0. Open appendectomy wound washed adequately with warm saline, debridement was done, seath closed

with intermittent proline no 1 and negative suction drain 16 F was inserted in the wound and wound closed. Loop ileostomy was made in left iliac fossa, 50 cm proximal to ileocaecal junction, 32 F drain inserted in pelvis and midline laparotomy wound closed in layer (figure 5).

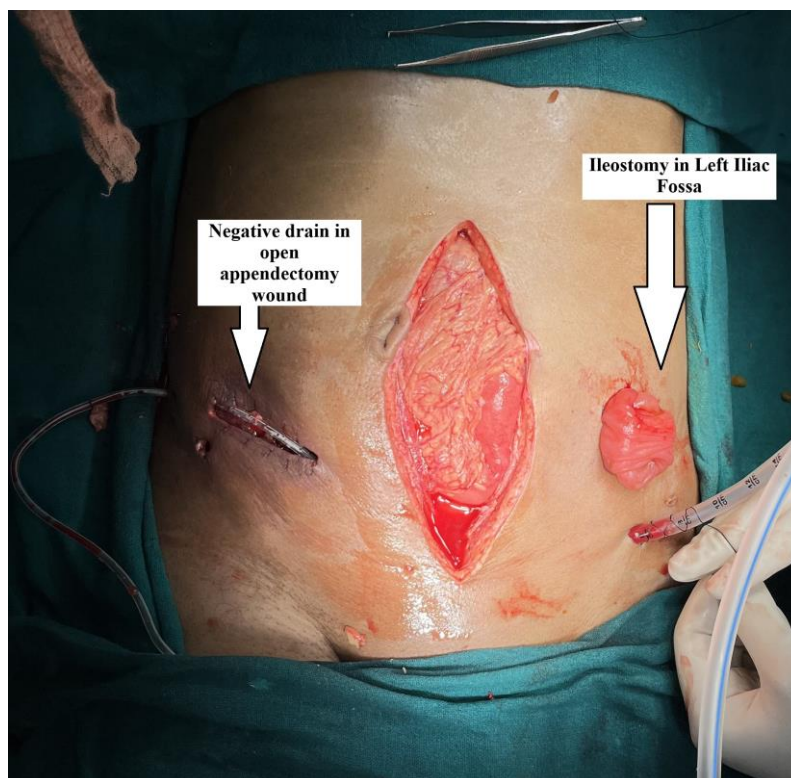


Figure 5: Showing negative suction drain in open appendectomy wound and ileostomy in left iliac fossa

Postoperatively patient was comfortable, hemodynamically normal, stoma start functioning on POD 2, nasogastric tube (NG) was removed, enteral feed gradually progressed. He had surgical site infection; wound swab culture was sent and daily dressing was done. Patient was recuperated well,

Discussion

The most common abdominal surgical emergency worldwide is acute appendicitis which can lead to serious complications, such as ileus, perforation peritonitis, abdominal abscess, and even death, as well as significant costs to the healthcare system. The incidence of appendicitis with a lifetime risk ranging from 6.7 to 8.6% is approximately 233 per 100,000 population per year^[4].

The primary presenting complaint of patients with acute appendicitis is colicky central abdominal pain followed by vomiting with migration of the pain to the right iliac fossa. Patient typically describes a peri-umbilical colicky pain, which becomes constant, sharp and intensifies during the first 24 hours, later migrates to the right iliac fossa represents a referred pain resulting from the visceral innervation of the midgut. The localized pain is caused by involvement of the parietal peritoneum after progression of the inflammatory process. Other complaints can be loss of appetite, constipation, nausea and profuse vomiting may indicate development of generalized peritonitis after perforation but is rarely a major feature in simple appendicitis^[5]. The clinical signs of peritoneal inflammation develop in acute appendicitis includes:

- Right lower quadrant guarding, tenderness and rebound tenderness at McBurney's point
- Rovsing's sign -right lower quadrant pain elicited by palpation of the left lower quadrant
- Dunphy's sign -increased abdominal pain with coughing

- Psoas sign - eliciting pain on external rotation or passive extension of the right hip suggesting retrocecal appendicitis
- Obturator sign - eliciting pain on internal rotation of the right hip suggesting pelvic appendicitis.

The duration course of clinical presentation can be variable but 75% of patients with early appendicitis presents within 24 hours of the onset of symptoms and risk of perforation or burst is variable but is about 2% at 36 hours and increases about 5% every 12 hours after that^[6]. The emergency department physician should refrain from giving the patient any pain medication until the surgeon has seen the patient as analgesics can mask the signs of peritonitis which can lead to delay in diagnosis or even a ruptured appendix.

Routine investigations are requested; complete blood count, kidney function test, coagulation profile and C-reactive protein (CRP) concentration. Raised white blood cells count (WBC) with or without a left shift or bandemia is classically seen in acute appendicitis but in some patients presents with a normal WBC count. To exclude the provisional diagnosis of acute appendicitis, a combination of normal WBC and CRP results has a specificity of 98%. For differentiating between uninflamed, uncomplicated, and complicated appendicitis, both raising levels of CRP and WBC correlate with a significant increase in the likelihood of complicated appendicitis^[7,8].

Traditionally, acute appendicitis is a clinical diagnosis with good history and detailed physical exam performed by an experienced surgeon but several radiological modalities are used to proceed with the diagnostic steps, including an abdominal computed tomography (CT) scan, ultrasonography, and magnetic resonance imaging (MRI). The accuracy for the diagnosis of appendicitis in abdominal CT scan has greater than 95%. The criteria for diagnosing appendicitis using CT scan includes an enlarged appendix which is greater than 6 mm in diameter,

appendiceal wall thickening which is greater than 2 mm, peri-appendiceal fat stranding, appendiceal wall enhancement, the presence of appendicolith in approximately 25% of patients and unusual to see air or contrast in the lumen with appendicitis due to luminal distention due to blockage in most cases of appendicitis. CT is more sensitive and specific than ultrasound but may be avoided ionizing radiation in children and pregnant women [9,10,11].

The primary measure to evaluate patients with acute abdominal pain abdominal ultrasonography is a widely used. The parameters used for the diagnosis of acute appendicitis includes an anteroposterior diameter of above 6 mm, an appendicolith, and abnormally increased echogenicity of the peri-appendiceal fat but compressibility along with a diameter of less than 5 mm is used to exclude appendicitis. On the contrary, several evidence, including, are suggestive of acute appendicitis. The innate limitations of the ultrasonography in obese patients and the operator-dependency to find the suggestive features are difficult^[12].

MRI having high sensitivity and specificity in the context of acute appendicitis identification. An abdominal MRI is not only expensive and also requires a high level of expertise to interpret the results and are mainly limited to special groups of patients^[13].

The conservative management of patient with acute appendicitis has a high efficiency but still slightly lower than that of emergency appendectomy. The incidence of complications in conservative management of acute appendicitis is significantly lower than that of emergency surgery. The conservative management that mainly entails anti-infection may be temporary who do not have a strong desire for emergency surgery or refuse emergency surgery. The risk of recurrence and converting to operation in conservative treatment, and the rate of reoperation is higher than that of emergency operation. Emergency open appendectomy was the only

therapy for those who do not have a response to antibiotics, recurrence of appendicitis and vitally or biochemically unstable. While managing conservatively, patients should be counselled and be willing to accept other uncertainties of possible disease progression despite antibiotics, disease recurrence, or missed neoplasm^[14].

After appendectomy, sometimes tube cecostomy is an effective and simple measure in preventing fistula formation for appendicular mass, abscesses, ileal perforations, wound infections and enterocutaneous fistulae. Post appendectomy faecal fistula is a rare but serious complication which prolongs morbidity and chances of mortality. Appendicular mass or abscess is one of the most common complications of acute appendicitis is associated with severe inflammation involving the base of appendix and adjoining ileocecal wall. Dissecting out an inflamed edematous appendix from surrounding tissues can be hazardous and result in abscess, fistula formation and caecal or ileal perforation. Tube cecostomy can prove to be a rational approach in preventing postoperative abscess and fistula formation in complicated situation or managing caecal perforation^[15]. In this case report, failure of cecostomy observed which was managed by primary repair of caecal perforation followed by loop ileostomy for better outcome. There is no previous literature observed in view failure of cecostomy following caecal perforation during laparoscopic appendectomy.

Conclusion

This case report highlights the challenges faced and complexities associated with failure of cecostomy in managing caecal perforation following laparoscopic appendectomy. The conversion from a laparoscopic approach to an emergency open appendectomy followed with cecostomy proved to be a vital decision in the face of phlegmon sequelae of acute appendicitis. The phlegmonous nature of acute appendicitis should be managed conservatively otherwise leading to a

more aggressive surgical intervention. This conversion of laparoscopic to an open appendectomy not only helps in precise identification, site and closure of the perforation which allows thorough exploration and drainage, leading to better outcome of the patient's condition. This case report serves as a valuable reminder for surgeons while conservatively managing the phlegmonous nature of acute appendicitis or leads to the dynamic nature of surgery, and need for early recognition of evolving clinical conditions and the willingness to modify the approach for the best possible manner.

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