



Chicken bone as a culprit in laparoscopic emergency: A rare case report

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Abstract

Background: An ingested foreign body often passes the gastrointestinal (GI) tract without any complications. Foreign bodies such as dentures, fish bones, chicken bones and toothpicks have been known to cause perforation of the GI tract. The lack of reported ingestion and the difficulty in detecting chicken bones preoperatively highlight the importance of considering this etiology in the differential diagnosis of acute abdomen.

Case Presentation: We herein present a case of a 67-year-old female who presented to emergency with features of acute peritonitis. On evaluation by Computerized tomography scan abdomen she was diagnosed to have perforative peritonitis caused secondary to accidental chicken bone ingestion. On diagnostic laparoscopy, there was minimal peritoneal contamination with chicken bone protruding into the peritoneal cavity through the perforation site. She underwent laparoscopic retrieval of the chicken bone with closure of jejunal perforation in single layer. She was started orally on the 1st post operative day and discharged on the 2nd day.

Conclusion: Intestinal perforation by a chicken bone is a rare condition, typically affecting the left colon or distal ileum. The rarity in our case was the jejunal perforation by ingested chicken bone causing perforative peritonitis and was successfully treated using laparoscopic approach. This demonstrates the feasibility and effectiveness of minimally invasive surgery in managing such rare emergency presentations of acute abdomen.

Key words: Chicken bone; Acute abdomen; Jejunal perforation by chicken bone; Peritonitis; Accidental chicken bone ingestion; laparoscopic repair of jejunal perforation

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1. Introduction

Ingesting foreign objects is a relatively common event, with most items passing through the gastrointestinal (GI) tract without causing harm. However, in some cases, ingestion may result in bowel perforation, leading to an acute abdomen necessitating surgical intervention. Such perforations are often identified during surgery. Common culprits include dentures, fish bones, chicken bones, and toothpicks, all of which have been implicated in GI tract perforations.

1.1. Case Presentation

We herein present a case of a 67-year-old female who presented to emergency with features of acute peritonitis. She presented to the surgical emergency department with history of severe abdominal pain and vomiting 6 hours after a heavy meal. On presentation, she was tachycardic (Pulse: 128/min) and on physical examination the abdomen was distended with tenderness in peri-umbilical region. Abdominal radiography showed no subdiaphragmatic free air, a classic sign typically associated with pneumoperitoneum. A Computerized tomography (CT) scan of abdomen showed a linear, radio dense foreign body perforating the anterior wall of the jejunum with extraluminal air pockets indicating hollow viscus perforation and minimal free fluid in the pelvis (Fig 1 a-d). Emergency laboratory tests revealed haemoglobin of 11.1 g/dL, white blood cell count of 9,380/ μ L, serum creatinine of 0.7 mg/dL, sodium of 132 mmol/L, potassium of 4.0 mmol/L, and chloride of 108 mmol/L.

An informed consent was obtained and the patient was planned for laparoscopic surgery under general anaesthesia (GA) after stabilising the patient with iv fluids and broad spectrum antibiotics.

Four ports were used for laparoscopy. Camera port 10mm was placed at the umbilicus. Diagnostic laparoscopy revealed jejunal perforation caused by a chicken bone which was protruding into the peritoneal cavity at the site of perforation (Fig 2a, 2b). The perforation was 110 cms from the duodenojejunal flexure close to the mesenteric border of jejunum. The perforation site was marked with 2-0 silk suture (Fig 2c, 2d). The rest of the small and large bowel loops were examined to rule out any other perforation. The chicken bone was carefully extracted through the perforation site with care being taken not to injure the mesenteric vessels and to enlarge the perforation. (Fig 3a-c) Peritoneal lavage was given and the perforation was closed in single layer using 2-0 polyglyconate sutures. (Maxon, France, Coviedien) (Fig 3d-e) . A 24 Fr abdominal drain was placed in the pelvis. The postoperative course was uneventful. She was started orally on the 1st post-operative day (POD) and discharged on the 2nd day.

The drain was removed on POD4 on outpatient basis and soft diet initiated. At 3 months follow-up the patient is comfortable.

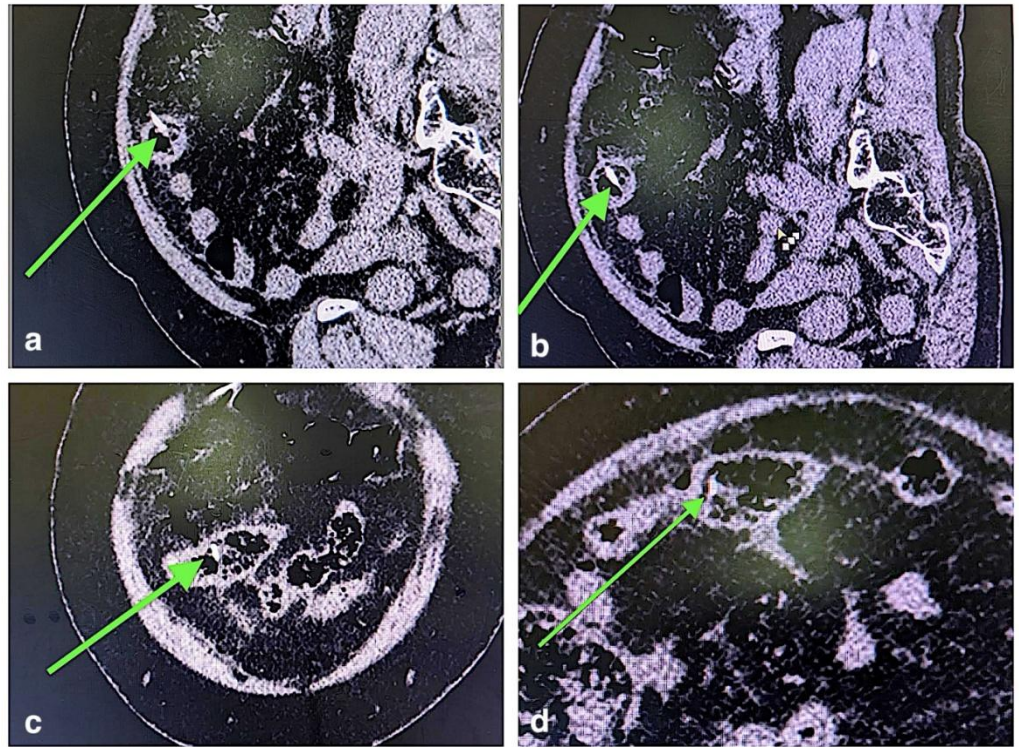


Figure 1

(a, b): Sagittal section of CT scan abdomen showing bone in the intestinal wall and lumen (green arrow: bone)

(c): Coronal section showing intraluminal portion of the bone (green arrow: bone)

(d): Axial section showing intraluminal portion of the bone (green arrow: bone)

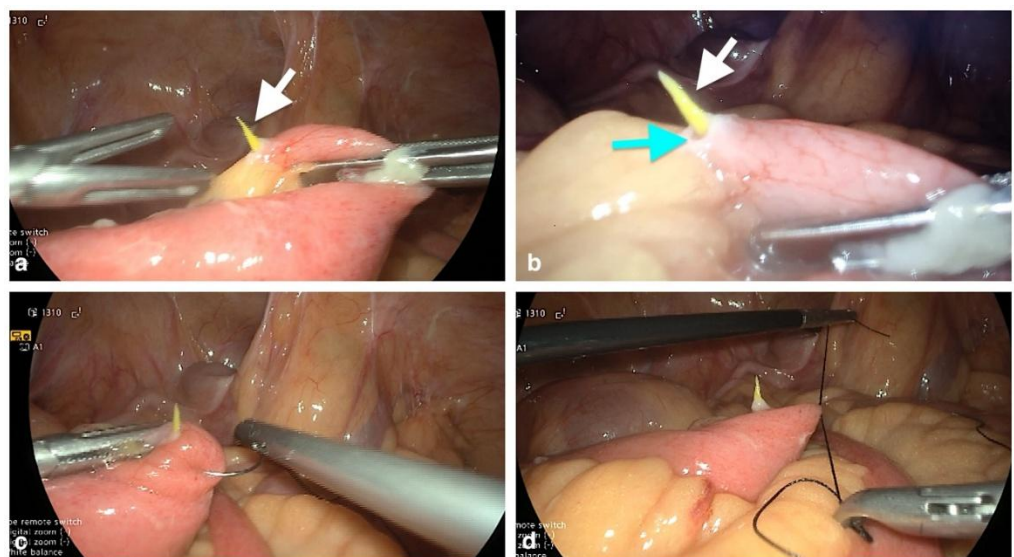


Figure 2

(a, b): Jejunal perforation with chicken bone protruding into peritoneal cavity (white arrow: chicken bone, blue arrow: perforation site)

(c, d): Stay sutures with silk near perforation site

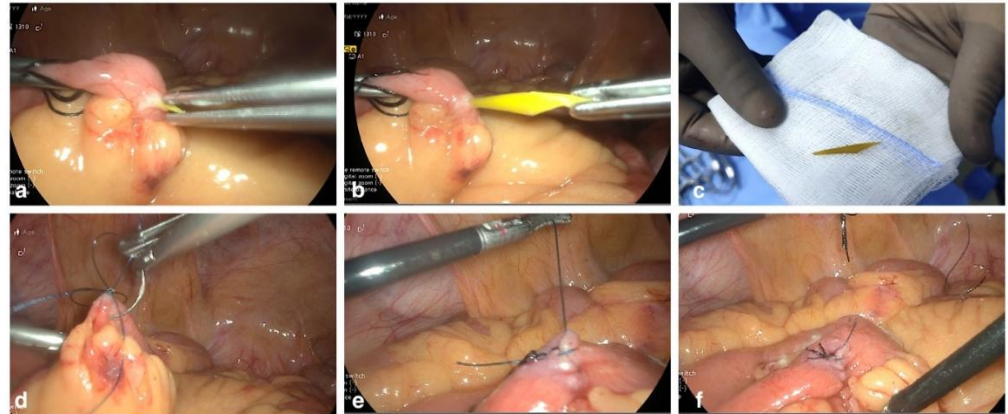


Figure 3

(a, b, c): Retrieval of chicken bone from jejunum

(d, e, f): Closure of perforation with 2-0 maxon

2. Discussion

Perforation of GI tract due to ingested foreign bodies is a rare but important clinical issue. While most ingested objects pass through the GI tract uneventfully, sharp objects such as chicken bones can lead to perforation, especially at anatomically narrow or angulated sites like the terminal ileum [1,2]. However, in our case, the perforation was at the jejunum which is an unusual location compared to the commonly reported terminal ileum. This suggests that factors such as motility dynamics or prior subclinical mucosal injury may influence the site of perforation [3].

Our patient presented with acute abdominal symptoms but lacked classical signs of peritonitis, such as guarding or rebound tenderness. This atypical presentation is especially relevant in elderly individuals, who may have diminished inflammatory responses or altered symptomatology, complicating the clinical picture [4]. Furthermore, in our case, upright abdominal radiography did not reveal pneumoperitoneum, which is often used to support the diagnosis of bowel perforation. This may be due to small perforation or early presentation of the patient to us. The absence of free intraperitoneal gas has been reported in similar cases and may be due to a sealed or small perforation site [5].

While exploratory laparotomy has traditionally been the standard in suspected small bowel perforations, laparoscopy is gaining ground due to its diagnostic accuracy, reduced postoperative pain, faster recovery, and shorter hospital stays [6]. Importantly, most published cases of small bowel perforation from ingested foreign bodies report surgical resection with primary anastomosis [7,8]. In contrast, our patient underwent simple perforation closure which is less invasive and preserved bowel length, without postoperative complications. This can be attributed to small perforation which we could

identify as the chicken bone was protruding into the peritoneal cavity at the site of perforation and early presentation of the patient to us as the peritoneal contamination was minimal.

Additionally, while laparoscopy in foreign body perforation is reported, it remains underutilized, particularly in patients without peritonitis or free air on imaging [9]. Our case thus demonstrates that minimally invasive management can be both safe and effective, even in diagnostically ambiguous presentations.

The rarity in our case was the jejunal perforation by ingested chicken bone, lack of clinical signs of peritonitis, lack of pneumoperitoneum on abdominal radiograph and management by laparoscopic approach.

3. Conclusion

Unusual foreign bodies like chicken bone can cause perforative peritonitis at unusual sites like jejunum. A strong index of suspicion and clinical acumen is required to diagnose such cases where the clinical and radiographic signs of peritonitis are lacking. CT scan abdomen is a useful tool in diagnosing such cases. These perforations can be managed effectively by laparoscopic approach by skilled surgeons when the patient presents early.

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