

Inflammatory Subcutaneous Pseudotumour due to Migrating Foreign Body through Concealed Colonic Perforation: A Case Report

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ABSTRACT

Foreign body ingestion though a common occurrence, rarely leads to bowel perforation. Thus, foreign body migration presents a diagnostic challenge. The author presents a case report of a 75-year-old female with an inflammatory subcutaneous pseudotumour due to migrating foreign body through a concealed colonic perforation. The patient presented with insidious abdominal pain and fever since two months, with local tenderness and palpable lump in right lumbar region on examination. The diagnosis was initially made on ultrasound and confirmed on Computed Tomography (CT). Surgical removal of the foreign body was done.

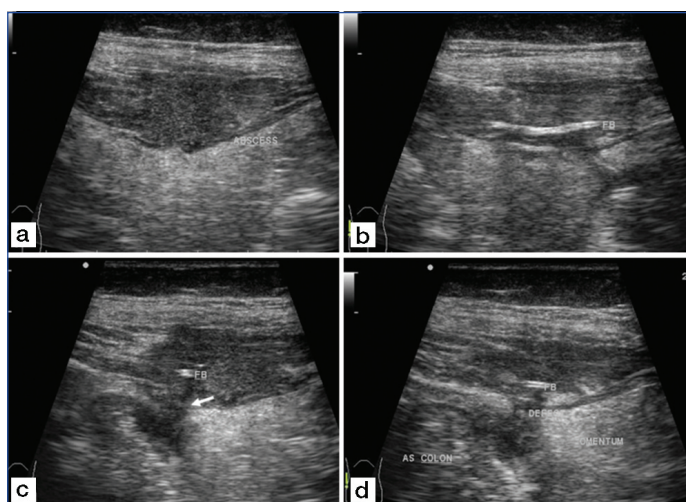
Keywords: Abscess, Chicken bone, Computed tomography, Foreign body ingestion, Ultrasound

CASE REPORT

A 75-year-old female patient presented to the department with insidious onset of pain in abdomen of two months duration, localised to the right lumbar region. The patient also had continuous low grade fever and complained of loss of appetite. The patient had no other complaint or any history of systemic illness. The patient had no specific past medical history, but, recalled that she had eaten a chicken dish for dinner few weeks before the onset of symptoms. On general examination, the patient was well oriented, moderately built and well nourished. The patient was afebrile and her vitals were stable. Oral cavity examination revealed that the patient was edentulous. On per abdominal examination, there had tenderness and palpable firm lump measuring 10×6 cm in the right lumbar region. There was no local rise of temperature and no movement with respiration on palpation. The lump was showing slight decrease in size on head raising and leg raising tests. The hernial orifices were normal. The lump in right lumbar region, probably fixed to anterior abdominal wall was thought to be probably arising from right kidney, ascending colon or anterior abdominal wall.

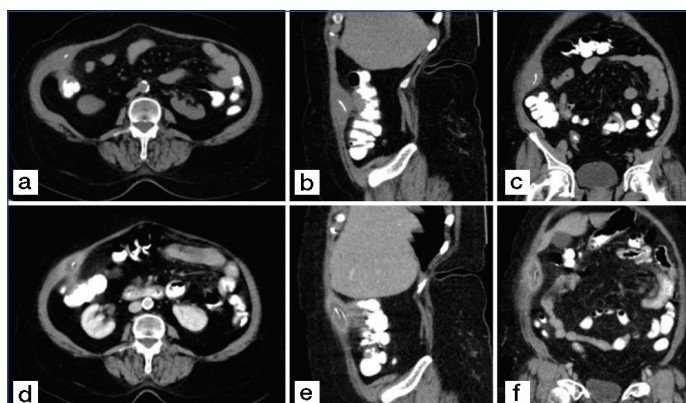
The plain radiographs were normal. The laboratory work up was unremarkable. Ultrasonography (USG) of the abdomen showed heterogeneous hypoechoic lesion of approximate size 4×1.5×1 cm in the peritoneal plane in the anterior abdominal wall in right lumbar region [Table/Fig-1]. A hyperechoic linear structure of size 2.5×0.2 cm was seen within the hypoechoic lesion which was suggestive of foreign body, likely a fish or chicken bone [Table/Fig-1]. The hypoechoic lesion was thought to be foreign body abscess and had an intra-peritoneal tract extending into the thickened wall of the ascending colon which was found to be adherent to the parietal peritoneum [Table/Fig-1]. One of the possibilities considered was foreign body abscess, most probably due to a fish or chicken bone that might have perforated through the ascending colon to enter the peritoneal space and the anterior abdominal wall. Other possible differentials considered were a necrotic mass or abscess involving the anterior abdominal wall.

The patient was subjected to contrast enhanced CT scan after two days. CT revealed an ill-defined, hypodense, peripherally enhancing collection measuring 4.4×3×2.2 cm in the anterolateral abdominal wall in the right lumbar region [Table/Fig-2]. There was an intraperitoneal extension reaching up to the anterior wall of the ascending colon showing reactive wall thickening and adjacent fat stranding. No extravasation of oral contrast from ascending colon into the lesion, pneumoperitoneum any definite communication



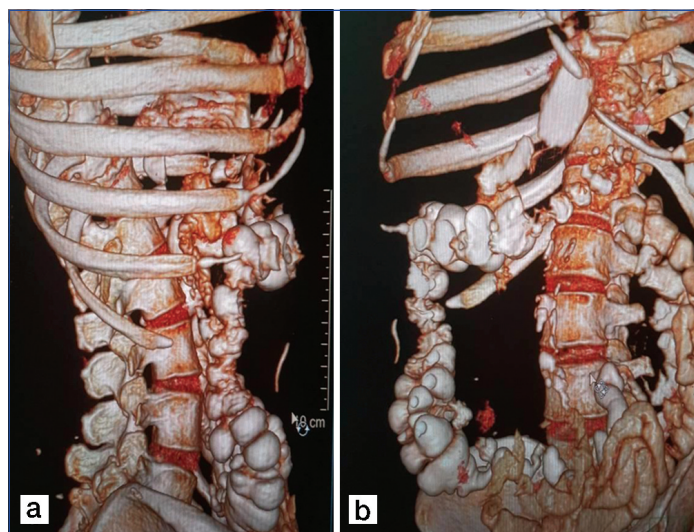
[Table/Fig-1]: a-d): USG image shows a heterogeneous hypoechoic lesion in the peritoneal plane; a) with a hyperechoic linear structure within the hypoechoic lesion; b,c) Representing abscess with the foreign body within. The abscess shows an intraperitoneal connection (white arrow) extending into the thickened wall of ascending colon which is adherent to the parietal peritoneum with adjacent inflamed omentum (c,d).

of the lesion with ascending colon was seen. A linear sigmoid shaped hyperdense (CT attenuation value: 322 HU) non enhancing structure of size 2.6 cm (length)×0.2 (thickness) cm was seen within the collection [Table/Fig-2]. The foreign body was very well demonstrated on Volume Rendering Technique (VRT) reformatted



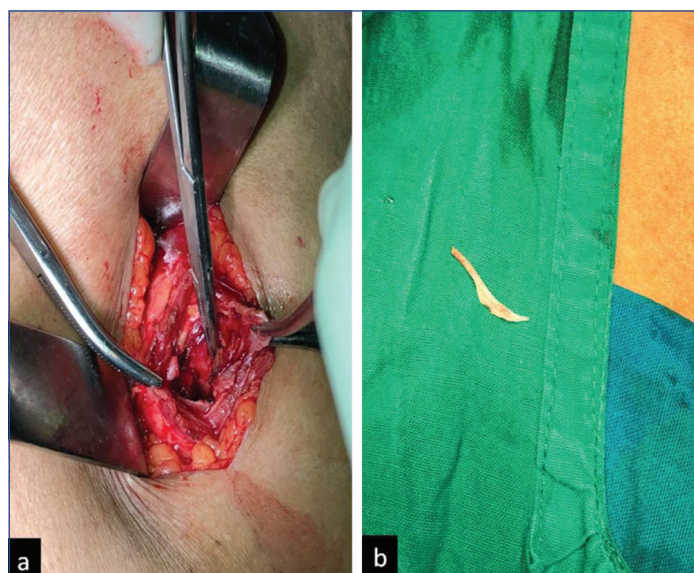
[Table/Fig-2]: a-f): CT image showing ill-defined, hypodense, peripherally enhancing collection in the anterolateral abdominal wall of the lumbar region on right side. A linear hyperdense non enhancing structure representing a foreign body is seen within the collection.

images [Table/Fig-3]. These findings were suggestive of chronic foreign body perforation with migration and resultant abscess as its complications. The abscess in the anterior abdominal wall was probably due to migrated foreign body from ascending colon with sealed-off perforation.



[Table/Fig-3]: a,b): Volume Rendering Technique (VRT) reformatted images show a radiodense curvilinear foreign body.

The patient underwent surgery under spinal anaesthesia. Ultrasound guided skin marking of the foreign body was done before the surgery. An abscess in the right lumbar region was opened and thick sludge with a 2.5 cm foreign body (a bone) was extracted from the abscess cavity [Table/Fig-4]. The foreign body was long thin, sharp ended, bone which had migrated by piercing through the ascending colon. The sludge was evacuated, and granulation tissue was curetted and sent for culture and sensitivity. The abscess was drained, and the foreign body was removed. The wound was closed with the drainage tube kept in-situ. The patient was administered broad spectrum antibiotics. The drainage tube was removed after 48 hours. The patient was discharged after five days. Follow-up after 15 days revealed no postoperative complications.



[Table/Fig-4]: a) Intraoperative photograph showing abscess in the right lumbar region. b) A curvilinear foreign body which was a long thin bone was found in the abscess cavity.

DISCUSSION

Foreign body ingestion is a common occurrence, especially in the children and elderly and is usually accidental in most cases [1]. Cerebrovascular strokes, mental disorders, bulimia, alcoholism or drug abuse, visual impairment, dentures and certain professions like carpentry are some of the predisposing factors [1,2]. The food

related substance like fish bones, chicken bones, vegetable fiber bezoars and toothpicks are most commonly ingested foreign bodies in adults [2,3].

The ingested foreign bodies usually pass through the Gastrointestinal (GI) tract without any complication in most cases. Rarely, sometimes they can get lead to impaction, bowel obstruction or perforation, abscess formation, septicaemia or haemorrhage with perforation and migration of the foreign body [1-3]. The likelihood of complications related to foreign bodies increases in cases with multiple foreign bodies, irregular or sharp objects, bones, magnetic foreign bodies and their duration in the GI tract [2-4]. The injected foreign body will usually pass uneventfully in the first week and rarely cause GI perforation [5]. Foreign body impaction and perforation can be more common at sites of angulation like duodenum, duodenojejunal flexure, colonic flexure and recto-sigmoid junction, regions of narrowing like ileocecal junction, intestinal strictures, diverticula, previous surgical sites causing stenosis in the bowel and adhesions. The acute cases usually present with severe abdominal pain, fever, localised peritonitis, septic shock and other presentations include generalised peritonitis, abscess formation, fistulas, obstruction and haemorrhage [5,6].

The foreign bodies which fail to pass may cause reactive fibrinous exudates and adhere to mucosa with possible perforation and extraluminal migration near the perforation site, adjacent or even distant organs [7]. It can even migrate to unusual locations such as back, urinary bladder, pancreas, and liver [7-10]. Chronic progressive foreign body perforation, migration and abscess formation are more common in duodenum, stomach, and colon compared to the small intestine; possibly due to the thicker wall, and the perforation site sealing due to being closely located to the omentum, adjacent bowel loops and solid organs like the liver. Therefore, the free intraperitoneal perforation and large pneumoperitoneum are also uncommon in such cases [5]. In the present case, the patient's foreign body had migrated outside the peritoneal cavity into the abdominal wall, presenting with a palpable lump in the right lumbar region. Extra-abdominal migration through the bowel wall with a sealed perforation is extremely rare, and we could not find any similar cases in the literature search.

The time of presentation from foreign body ingestion varies greatly and ranges from hours in acute cases to months and even years in those with more insidious onset symptoms. Rodríguez-Hermosa JI et al., reported mean time of 10.4 days with range of three days to two months between foreign body ingestion and perforation [2]. Diagnosis of such cases requires good history taking and a high index of suspicion. However, many patients may not recall the history of the foreign body ingestion, which makes it problematic to establish the exact timeline.

Plain radiography is usually the first screening investigation performed and helps in identification of radiopaque foreign bodies, like metallic and glass foreign bodies and most animal bones. It is not helpful in the identification of radiolucent objects like plastic or wooden foreign bodies and smaller, low-density fish and chicken bones [1].

Ultrasound plays an important role in detecting highly reflective foreign bodies including radiolucent objects made of plastic and wood, which may be missed on radiography. Ultrasound can also diagnose perforations, seen as a bright object piercing the bowel wall and offers added advantages of real time imaging focused on an area of interest [11]. The major limitation is operator dependency with highly variable sensitivity depending on operator experience. Another pitfall of ultrasound is difficulty in detection of foreign bodies situated in deeper tissues.

Computed Tomography is the most important imaging investigation for detecting all types of foreign bodies [12,13]. CT studies are highly efficacious in identifying and locating foreign bodies that have migrated into the peritoneal cavity or solid organs, identifying the site of perforation and associated complications. Presence of intestinal

wall thickening, pneumoperitoneum, regional inflammatory changes and associated intestinal obstruction can help in identification of the perforation site [13]. The use of negative oral contrast like water is recommended on CT, as positive oral contrast media can obscure smaller foreign bodies, chicken and fish bones in the intestinal lumen. In the present case, the presence of an abdominal wall abscess containing a foreign body; with thickening of the adjacent loop of colon and an intervening tract and fat stranding between the colon and the abscess was confirmatory of the diagnosis.

Endoscopic examinations are useful in diagnosis and retrieval of ingested foreign bodies, however localisation of the foreign body may be difficult compared to open surgery [14]. Surgical removal is indicated when the foreign body is sharp, large in size, impacted or toxic-like batteries [2]. An exploratory laparotomy or laparoscopic procedure is usually performed, involving removal of the foreign body. There may be need for repair or resection of the bowel wall depending on severity of bowel wall involvement and drainage of any abscess. Bowel wall repair was not required in the present patient as the foreign body has migrated from the large bowel into abdominal wall with sealing of the perforation site.

CONCLUSION(S)

Bowel wall perforation and migration in foreign body ingestion is a relatively rare; but well documented complications can be a diagnostic challenge due to variable and non specific presentations. Extra-abdominal migration in case of an ingested foreign body through the bowel wall with sealed perforation is extremely rare and need a high index of suspicion for an accurate diagnosis. In the present case, an important role of ultrasound and CT in the detection of foreign body perforation and migration has been demonstrated, as well as, the need for good history taking and a high index of suspicion.

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