

**Case report****An unusual case of small bowel perforation due to ingestion of foreign body**Dr. Deepak Kumar Singla^{1*}, Dr. Manoj D Sonkar¹, Dr. Gaurav Thami², Dr. Nivesh Agrawal³^{1*}Department of Surgery, B.P.S Govt. Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India.²Department of Pathology, B.P.S Govt. Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India.³Department of Surgery, B.P.S Govt. Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India.**ARTICLE INFO:****Article history:**

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ABSTRACT

The accidental or intentional ingestion of a variety of foreign bodies is commonly found worldwide in a wide variety of individuals and age groups. This is significant as often there is a lack of history and patients present with a variety of nonspecific signs and symptoms. As a result, there is always a delay in clinical diagnosis causing significant morbidity and mortality. There are a variety of radiological modalities available to diagnose them and management varies according to clinical scenario and may include both invasive as well as noninvasive modalities.

1. Introduction

The ingestion of foreign bodies intentionally or accidentally is found worldwide especially in pediatric age group, elderly, mentally subnormal individuals, alcoholic and drug abusers proving to be a major cause of morbidity and mortality. The range of foreign bodies ingested may vary geographically and may range from fish bones, chicken bones, dentures, toothpicks to various metallic objects like hairpins, razors or coins. There is a classification given by The American Society for Gastrointestinal Endoscopy which has classified ingested foreign bodies likely to cause gastrointestinal perforation into the following groups:

1. Food bolus, generally of meat;
2. Blunt objects, such as coins;
3. Long objects, longer than 6–10 cm, such as toothpicks;
4. Sharp-pointed objects, such as fish bones or small bones;
5. Disk batteries, and
6. Narcotic packets wrapped in plastic or latex

Most of the foreign bodies ingested pass in an uncomplicated manner within a week or so and the incidence of perforation is only around 1% requiring surgical intervention. We hereby present a case of ileal perforation due to ingestion of ballpen in a mentally subnormal patient without any prior history who was admitted as a case of acute abdomen to our side.

2. Case report

A 30 year old male presented to emergency ward with complaints of abdominal pain, abdominal distention, vomiting and inability to pass flatus and stool for 5 days duration. The patient was febrile and his vitals were pulse rate 102/minute, BP 112/70 mm of mercury, respiratory rate 24/minute. On clinical examination, abdomen was tense, tender, distended and bowel sounds were absent. PR examination was within normal limits. Abdominal skiagrams showed gas under diaphragm and a provisional diagnosis of intestinal perforation was made. The patient was subjected to emergency blood investigations which revealed raised blood counts and deranged renal function tests. The patient was taken up for exploratory laparotomy under general anaesthesia after taking high risk consent. Intraoperatively peritoneal cavity was found to be full of fecal matter with severe fibrinopurulent peritonitis and pus pockets here and there. A thorough search for bowel perforation was made and to our surprise there were two perforations about 5cm apart in distal part of ileum about 15cm proximal to ileocecal junction with a ball pen of size around 12 cm protruding out through proximal perforation and entering the distal one (though the patient never gave the history of ingestion of any foreign body whatsoever) (**figure 1, 2**). The pen was taken out and resection of the perforated bowel loop was done with double barrel ileostomy after thorough lavage of peritoneal cavity.

Postoperative period was uneventful and patient was discharged in satisfactory condition on 10th postoperative day and underwent ileostomy closure 3 months afterwards.

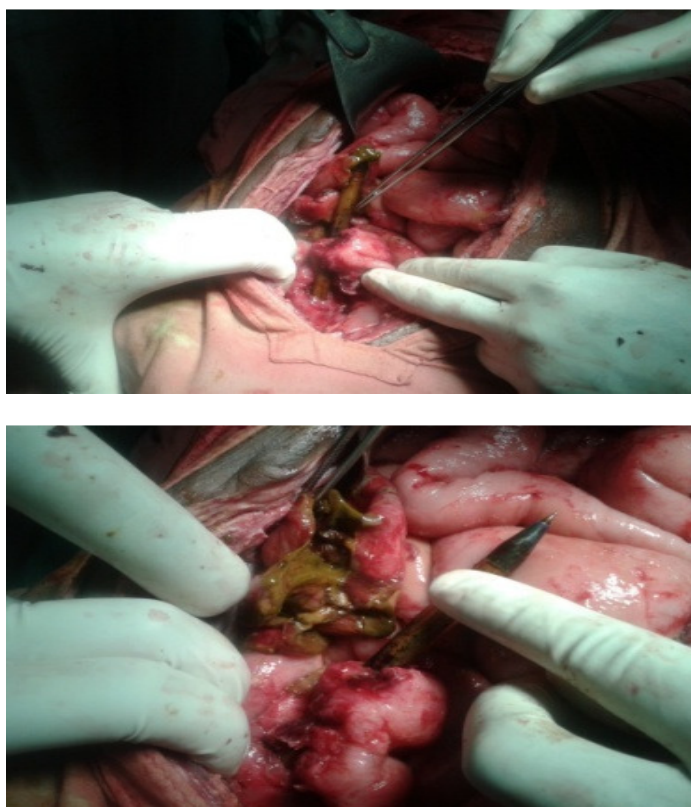


Figure 1, 2: Showing two perforations about 5cm apart in distal part of ileum about 15 cm proximal to ileocecal junction with a ball pen of size around 12 cm protruding out through proximal perforation

3. Discussion

Ingestion of clinically significant foreign bodies is commonly found in pediatric age group, alcoholics, mentally challenged individuals and edentulous patients[1]. The common culprits include fish bones, toothpicks, meat bones, dentures[2-5] and most of them pass uneventfully with complications requiring surgical interventions in less than 1% patients[6]. The anatomical areas where FB impaction is most likely include narrow, angled or pouching zones, zones with adhesions or surgical anastomosis and zones containing diverticules⁶. Risk of perforation is higher in old people, those with history of surgical intervention, previous bowel pathology, alcoholic and psychiatric patients[7,8]. Sharp and elongated objects are most likely to cause perforation[9]. Most common sites of perforation have been reported to be in areas of narrowing and angulations as in ileocecal region and rectosigmoid region[10]. A preoperative diagnosis is rarely made as in majority of cases there is lack of history or lack of predisposing factors leading to accidental ingestion of foreign bodies[11]. Most of the symptoms are nonspecific and mimic other commonly occurring conditions like appendicitis, inflammatory bowel diseases and diverticulitis[12]. The patient may present with features of acute abdomen or may present with chronic abdominal illness or may

be asymptomatic only to be diagnosed in due course of time[13]. Patients with gastric, duodenal or large bowel perforation due to foreign bodies are more likely to be diagnosed late as they usually present with chronic symptoms than those with small bowel perforation who usually present with symptoms of acute abdomen of uncertain origin[14]. The patient should be subjected to thorough history and clinical examination with a special emphasis upon personal history, dietary habits and mental status. Plain radiography remains the most useful means of detecting radio-opaque foreign bodies as fish bones and metallic objects. In addition it may show free gas under diaphragm suggesting bowel perforation though incidence is far lower as perforation in these cases occurs due to gradual and progressive erosion of bowel which allows it to be covered with fibrin or omentum impeding the escape of any significant amount of gas. USG abdomen helps in detecting foreign bodies including those which are nonradio-opaque due to their reflectivity and variable posterior acoustic shadowing. In addition easy availability, repeatability and cost effectiveness further adds to its diagnostic utility. The ever increasing diagnostic ability of newer USG systems with clearer images has made it even more sensitive in detecting foreign bodies[15-18]. Computed tomography (CT) scan of the abdomen has been reported to have a high sensitivity to identify intestinal perforation caused by alimentary foreign bodies especially multidetector CT (MDCT) with its high resolution and multiplanar reconstruction which is considered to be the modality of choice in preoperative diagnosis of foreign body as it may detect the foreign body along with any intra abdominal collection, free fluid or gas[19,20]. Most common complications include peritonitis, pyoperitoneum, intestinal obstruction, hemorrhage, enterovesical, colovesical or colorectal fistula, septicemia, endocarditis and omental pseudotumours²¹. The treatment of perforation peritonitis secondary to foreign body includes exploratory laparotomy with primary repair of the defect or resection of perforated bowel with anastomosis or exteriorization of bowel loop as the case may be, along with thorough lavage of peritoneal cavity and proper antibiotic coverage[6,10,22]. The endoscopic and laparoscopic approaches are also used wherever feasible [23].

4. Conclusion

The accidental or intentional ingestion of foreign bodies is found worldwide causing significant morbidity and mortality. The possibility of ingestion of foreign body, therefore, should always be taken into consideration in any patient presenting with acute or chronic abdominal pain as it may completely alter the clinical management of the patient.

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