



PERFORATION OF THE SIGMOID COLON AFTER INGESTA OF A FOREIGN BODY.

Juan Pablo Landeros-Ruiz*

General Surgery Department / Hospital Regional Valentín Gómez Farías, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE)/Zapopan Jalisco, México *Corresponding Author

Lourdes Marlene Zuñiga-Ramos

Anesthesiology Department / Hospital Regional Valentín Gómez Farías, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE)/Zapopan Jalisco, México

Mayra Paola Padilla Sanchez

General Surgery Department / Hospital Regional Valentín Gómez Farías, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE)/Zapopan Jalisco, México

Diana Sofia Blanquet Campos

General Surgery Department / Hospital Regional Valentín Gómez Farías, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE)/Zapopan Jalisco, México

ABSTRACT

Introduction: The ingestion of a foreign body (FB) is uncommon, yet important cause of gastrointestinal injury; it has more incidence in the pediatric population. Less than 1 % of the FB is associated with complications, particularly gastrointestinal perforations. **Case report:** We present the case of a 76 years old female, who refers lower quadrant abdominal pain of 48 hours of evolution, with gradually exacerbation over 1 day. The CT Findings reveal the presences of pneumoperitoneum and a high-density FB in the architecture of rectosigmoid colon, she underwent exploratory laparotomy with trans -surgical findings: Perforation of 0.5 cm in rectosigmoid union, with the protrusion of a bone with perilesional edema. Treated with suturing in two planes, with good evolution. **Discussion and conclusions:** Most ingested FB pass through the GI tract uneventfully within 1 week, and is more common among children and older individuals. Patients with dentures, alcoholics and psychiatric patients are at high risk of FB ingestions. In the case of perforation due to foreign body, different techniques can be performed; the most common are: In the stomach, primary suture, in the small bowel, primary suture or segmental resection with anastomosis, and in the colon, sigmoid and rectum, primary suture, wound eversion by colostomy, segmental resection with anastomosis, and segmental resection with proximal colostomy.

KEYWORDS : Foreign body, perforation, sigmoid colon, general surgery.

INTRODUCTION

The ingestion of a foreign body (FB) is an uncommon, but important cause of gastro-intestinal gastro – intestinal (GI) injury; it's more often found in the pediatric population. Less than 1 % of the FB is associated with complications, particularly GI perforations. (1) Ingested FB may perforate anywhere along the GI tract; they are usually reported to lodge in the hypopharynx or upper esophagus, or to impact at areas of angulation and narrowing loops such as duodenal loops, duodenojejunal junction, ileocecal valve, appendix, and sigma colon. Clinical presentation is variable. When it happens in the bowel, many patients will show signs of localized peritonitis. Localized abdominal symptoms may mimic inflammatory conditions, depending on the site of perforation. (2) FB perforations may be subacute or chronic, with the object slowly eroding through the bowel wall, producing a chronic inflammatory process that has few symptoms; such cases are sometimes uncovered incidentally months later. Linear foreign objects can migrate into adjacent organs with the resultant fistulation, abscess formation, or septicemia. (3) The options for surgical approach can be made with diagnostic laparoscopic and exploratory laparotomy, the surgical technique can range from simple suturing of the perforation to rectosigmoid resection with terminal colostomy, it's also needed the extraction of the FB and thoroughly cleaning of the abdominal cavity. (4)

Case Report.

We present the case of a 76 years old female, medical history of hypertension of 27 years of evolution treated with amlodipine, she refers lower quadrant abdominal pain of 48 hours of evolution, with gradually exacerbation over 1 day. The patient complains of loose stools without hematochezia. On abdominal examination, the clinician noticed left lower

tenderness and muscle tension, with normal bowel sounds; laboratory results showed, increased white blood cell count (17×10^9) and increased neutrophils (13×10^9). Because of the symptoms and physical examination were suspicion of complicated diverticulitis, an abdominal computed tomography (CT) scan was performed. The CT Findings reveal the presences of pneumoperitoneum (figure 1A) and a high- density FB in the architecture of rectosigmoid colon, (figure 1B), for this reason the patient received an emergency exploratory laparotomy, finding a perforation of 0.5 cm in sigmoid colon, in the mesenteric border with the protrusion of a bone head with perilesional fibrin, (Figure 2) the FB its extracted, the borders of the perforation clean. The perforation was managed with suturing in two planes, and removal of the FB, which was confirmed to be a chicken bone of 5 cm in length (figure 3). The patient received antibiotic therapy, the oral feeding initiates at 24-hour post-surgery, well tolerated and no signs of complication, upon further investigation the patient reported eating chicken 1 week before the symptom onset, which supported the operative finding, discharge was ordered 3 days after surgery.

DISCUSSION

Most ingested FB passes through the GI tract uneventfully within 1 week, and is more common among children and older individuals. Patients with dentures, alcoholics and psychiatric patients are at high risk of FB ingestions. (5). The length of the foreign body is a risk factor for obstruction, particularly in children under 2 years of age, because they have considerable difficulty in passing objects longer than 5 cm through the duodenal loop into the jejunum. In infants, FB of 2 or 3 cm in length may also become impacted in the duodenum (6). Gastrointestinal (GI) tract perforations may arise due to a multitude of etiologies. The stomach and duodenum are the

most frequently involved sites; causes of perforation in these areas include peptic ulcer disease (7). Perforation of the mesenteric small bowel is rare, and occurs in only 0.4% of all cases of GI tract perforation. Chron's disease, diverticulitis, ischemia, bevacizumab therapy, and colonoscopy are known causes of large bowel perforation; less than 1 % of ingested FB causes GI tract perforation. In the large intestine, the most common areas for FB to cause complications are in the ileocecal and rectosigmoid regions. The American Society for Gastrointestinal Endoscopy divides ingested FB into the following groups (I) food bolus, generally of meat; (II) blunt objects, such as coins; (III) long objects, longer than 6-10 cm, such as tooth-picks; (IV) Sharp- pointed objects, such as fish bones or small bones; (V) disk batteries; and (VI) narcotic packets wrapped in plastic or latex (8). Most patients who are found to have GI FB do not recall consuming the offending agent. Clinical presentation may be acute or chronic; they may be broadly classified as acute peritonitis, which may be localized or generalized, or an intraabdominal mass or abscess formation (9). Clinical manifestations can range from hemorrhage to bowel obstruction, or even ureteric colic, but they can also pass as asymptomatic. The imaging test with the greatest diagnostic potential is abdominal computerized tomography, as it provides information about the site of perforation, the nature of the object, the presence of pneumoperitoneum, regional fat infiltration, and associated intestinal occlusion. (10) Pneumoperitoneum is rarely seen in preoperative radiological test because perforation is caused by the progressive impactation of the FB in the intestinal wall and the site is covered with fibrin, omentum or adjacent bowel loops, which prevents the leakage of gas or fluid into the abdominal cavity. (11) Antibiotic therapy is essential in the case of intestinal perforation, there is a wide variety of antibiotics regimens, that includes, cephalosporins, imidazole and piperacillin- tazobactam, more recently , the wide spectrum antibiotic such as the carbapenems can be used with good results. (12) The type of surgical treatment depends on the characteristics of intestinal lesion the time of evolution, the degree of contamination, the patients age, the associated comorbid diseases, the patients general condition and the surgeons experience. After the Fb is extracted, different techniques can be performed; the most common are: In the stomach, primary suture, in the small bowel, primary suture or segmental resection with anastomosis, and in the colon, sigmoid and rectum, primary suture, wound eversion by colostomy, segmental resection with anastomosis, and segmental resection with proximal colostomy (Hartman procedure). (4)

In a retrospective review made by Brian K.P et al in the Singapore general hospital between 1990 and 2005, that includes a series of 62 consecutive patients surgically treated, found that patients who had ingested FB had a median age of 58, and 37 (60%) were male. Of the 59 FB recovered, 55 (93%) were toothpicks and dietary FB such as fish bones or bone fragments. A definitive preoperative history of FB ingestion was obtained for only two patients, and 36 of 52 patients (69%) wore dentures. Altogether, 18 (29%) perforations occurred in the anus or distal rectum, and 44 perforations were intraabdominal, with the most common abdominal site being the distal ileum (39%). Patients with FB perforations in the stomach, duodenum, and large intestine were scientifically more likely to be afebrile ($P < 0.001$) compared to those with FB perforations in the jejunum and ileum. (13)

In other retrospective review made by J.I. Rodriguez- Hermosa et al. between 1995 and 2006, with a series of 33 patients, described that the site of perforation was the stomach in two (6.1%) cases, jejunum in three (9.1%), distal ileum in seven (21.2%), ileocecal region in three (9.1%); the colon in ten (30.3%) and rectum eight (27.3%). The most common FB ingested were non-digestible components of food (fish bones,

small bones, mollusks shells and vegetable bezoars) in 21 cases (63.6%), followed by metallic objects in six (18.2%) and toothpicks in another six (18.2%). All patients were treated surgically. After exploratory laparotomy, the surgical technique ranged from simple suturing of the perforation to rectosigmoid resection with terminal colostomy; in all cases the FB was extracted and the abdominal cavity was clean. (4)

CONCLUSIONS.

Bowel perforation by a non-sharp FB it's rare complication of object ingestion, and can be a life-threatening condition that needs always an adequate treatment, it can present a wide spectrum of acute or chronic clinical manifestations. The definitive treatment must always be surgery, to repair the involved organ and cleaning of the abdominal cavity.

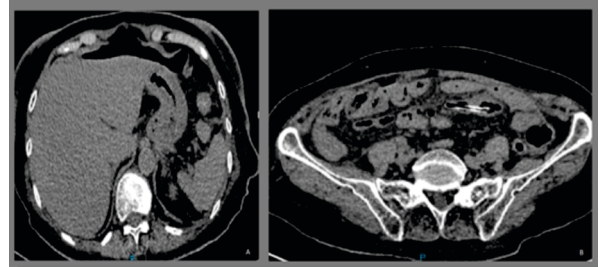


Figure 1. Abdominal computed tomography A: Pneumoperitoneum in abdominal cavity B: FB located in recto sigmoid region.



Figure 2. Perforation due to a FB located in the sigmoid flexure, with perilesional edema and fibrin.



Figure 3. FB of 5 cm confirmed to be a chicken bone after the interrogatory.

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