

Perforated Viscus by an Unusual Foreign Body

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DOI: [10.36347/sjams.2023.v11i03.001](https://doi.org/10.36347/sjams.2023.v11i03.001)

| Received: 22.01.2023 | Accepted: 28.02.2023 | Published: 02.03.2023

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Abstract

Case Report

Introduction: Foreign body ingestion occurs infrequently but can be associated with rare risks including perforation, it is a potentially harmful disease with a high-cost hospital presentation, rarely associated with perforation or adverse outcomes and increasing in frequency worldwide. **Case Report:** An 87-year-old female patient with a history of arterial hypertension, Parkinson's disease and diverticular disease, presented to a primary care unit with a 72-hour generalized abdominal pain, that was later accentuated at the left lower quadrant, accompanied by constipation, abdominal distension, and general malaise. Abdominal and pelvic CT revealed pneumoperitoneum, pericolic panniculitis at the left lower quadrant, free fluid at the pouch of Douglas and a radiopaque foreign body of approximately 5 cm, located of the transition of the descending and sigmoid colon. An exploratory laparotomy was performed, finding coproperitoneum along with colon perforation due to a metallic foreign body (metal hair bobby pin). **Conclusions:** Perforated viscus due to foreign body is an infrequent cause of acute abdomen, which must be evaluated according to the patient's characteristics. Diagnosis should be promptly made, through a detailed clinical history, including psychiatric disorders, and image methods, mainly CT.

Keywords: arterial hypertension, Parkinson's disease and diverticular disease, pericolic panniculitis, Foreign body ingestion.

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INTRODUCTION

Foreign body ingestion occurs infrequently but can be associated with rare risks including perforation [1], it is a potentially harmful disease with a high-cost hospital presentation, rarely associated with perforation or adverse outcomes and increasing in frequency worldwide [2]. Mortality from this disease is exceptionally low with no deaths identified in two case series of 284 patients, though rates of endoscopic intervention remain high [3, 4]. Incidence is greatest among prison populations due to secondary gain [5], as well as individuals with previous trauma-related personality disorders. True incidence rates at a population level in Ecuador, however, remain unclear due to challenges with identifying cases and recording outcomes in heterogeneous populations, and due to a spectrum of outcomes ranging from asymptomatic

passage to empirical retrieval and emergency laparotomy [2].

CASE REPORT

An 87-year-old female patient with a history of arterial hypertension treated with Losartan 50mg PO daily, Parkinson's disease and diverticular disease; underwent appendectomy 60 years ago and sacrohysteropexy 32 years ago.

She presented to a primary care unit with a 72-hour generalized abdominal pain that was later accentuated at the left lower quadrant, accompanied by constipation, abdominal distension, and general malaise. A nasogastric tube was placed, seeing no output. A computed tomography (CT) of the thorax and abdomen was performed, finding pneumoperitoneum,

Citation: Marlon San Martín-Riera, Jonathan Coello-Vergara, Paul Vilatuña-Fustillos, Christian Suárez-Guzmán, Nathaly Villacís-Flores, Martín Angulo-Mejía, Lourdes Ormaza-Castro, Juan Guerrero-Huilca, Bairon Sabando-Farías, Génesis Carreño-Oliveros, Jefferson Peñafiel-Moreira, Andrea Villarreal-Juris. Perforated Viscus by an Unusual Foreign Body. Sch J App Med Sci, 2023 Mar 11(3): 491-494.

deciding transferal to a more complex unit to offer proper management.

The patient arrived at the Emergency Department of Luis Vernaza Hospital, with a temperature of 37.5 °C, 100/60 mmHg blood pressure, heart rate of 115 beats per minute, respiratory rate of 20 breaths per minute, and oxygen saturation of 98% at

room air. Weight was 70 kg, with a body Mass Index (BMI) of 31.11 kg/m². Physical exam revealed pallor, severe abdominal pain, abdominal distension, and tenderness that did not improve with analgesics, Blumberg's sign, and diminished bowel sounds. Patient also presented tremor of the upper limbs due to previously described disease.

Table 1: Laboratory tests

Variable	Reference	At admission-value	At discharge-value
Hematocrit (%)	36 – 46	30.6	26.7
Hemoglobin (g/dl)	12 – 16	10.4	9.1
Leucocytes (por mm ³)	4.5 – 11	13.13	10.97
Differential count (%)			
Neutrophils	40 – 70	87.5	77.3
Lymphocytes	22 – 44	8.9	13.8
Monocytes	4 – 11	2.7	6.2
Eosinophils	0 – 8	0.2	2.0
Basophils	0 – 3	0.2	0.3
Platelet count (per mm ³)	150 - 400	261	509
Erythrocytes (per mm ³)	4.0 – 5.2	3.50	3.3
Procalcitonin (ng/ml)	≤ 0.5 low risk of septic shock 0.5 to 2.0 moderate risk of septic shock ≥2.0 high risk of septic shock	10.02	0.12

Chest CT showed normal mediastinum, with no evidence of lymphadenopathy or cardiomegaly, clean pleural spaces with no evidence of pleural effusion, and clear lung parenchyma with no opacities, apical scars, or granulomas (CORADS-1).

Abdominal and pelvic CT revealed pneumoperitoneum, pericolic panniculitis at the left

lower quadrant, free fluid at the pouch of Douglas and a radiopaque foreign body of approximately 5 cm, apparently metallic (according to Hounsfield units), located at the transition of the descending and sigmoid colon; also, presence of multiple diverticula without active inflammatory disease, and absent cecal appendix (Image 1). Patient denied having consciously or accidentally ingested any foreign body.

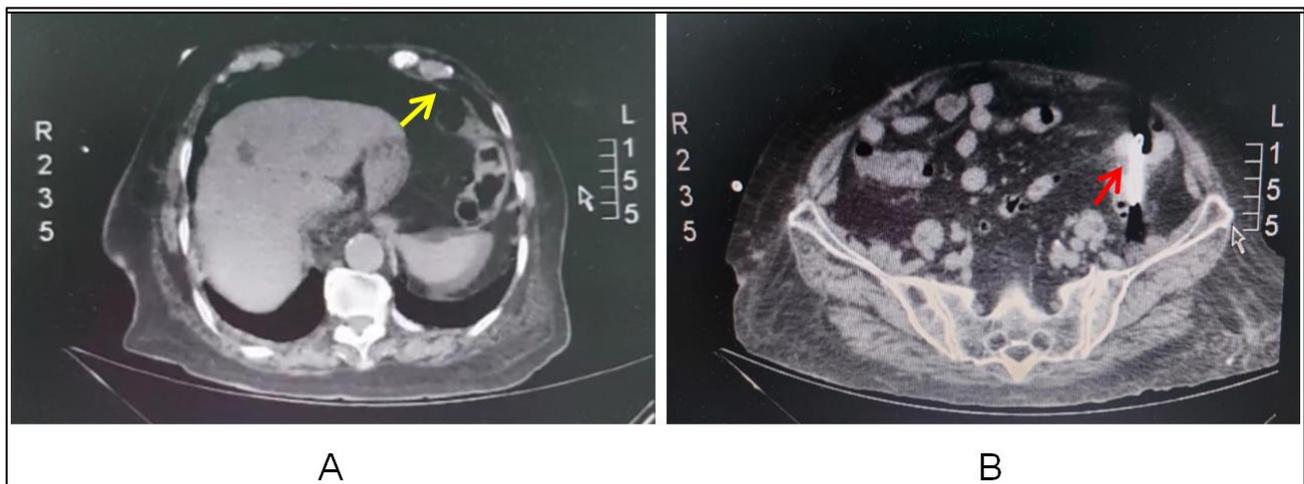


Image 1: Abdominal CT at admission. A: pneumoperitoneum. B: foreign body at the transition of the descending and sigmoid colon

Based on the laboratory tests, the physical examination and the radiological findings, the diagnosis of acute abdomen due to colon perforation was made.

Treatment

An exploratory laparotomy was performed. When approaching the peritoneal cavity, coproperitoneum along with colon perforation was seen at the anatomical limit between the descending and the

sigmoid colon due to a metallic foreign body (metal hair bobby pin) (Image 2). A severe adhesion syndrome was also found. After adhesiolysis, the foreign body was extracted, followed by detachment of the descending colon. Due to severe abdominal

contamination, a loop colostomy was made. Jackson-Pratt drain was left towards the Douglas pouch; abdominal wall closure was performed by tissue planes from peritoneum to skin.

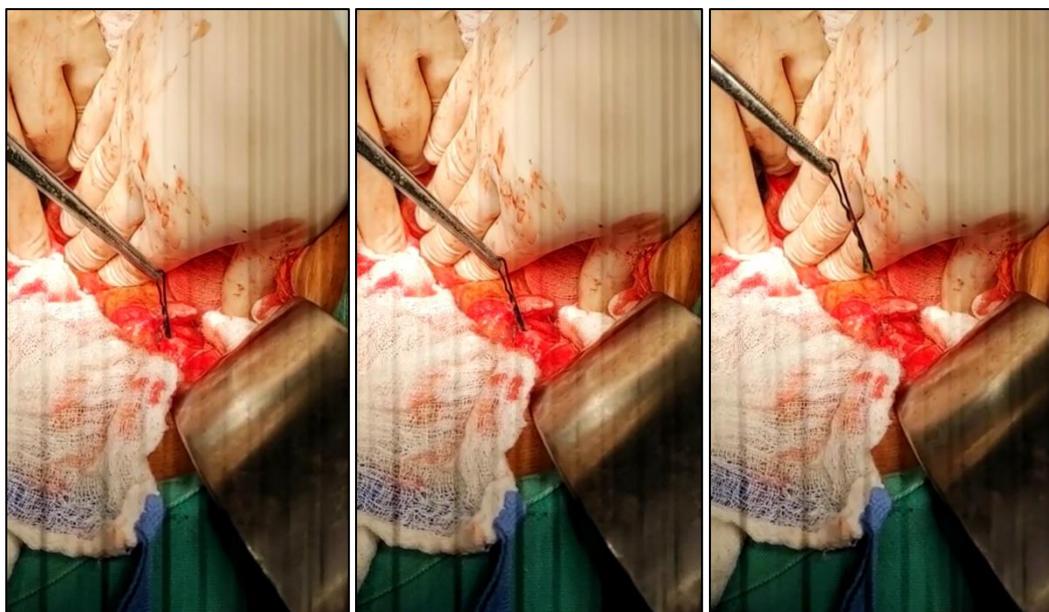


Image 2: Colon perforation and foreign body extraction (metal hair bobby pin)

Post-surgical, the patient was transferred to an intensive care unit (ICU) where she was on invasive mechanical ventilation for 10 days, without requiring vasoactive drugs. After extubation, she remained at intermediate care for 8 days. A new abdominal and pelvic CT was performed for reassessment, finding no intra-peritoneal collections or free fluid, laboratory tests were normal. Drain was removed and patient was then discharged home.

DISCUSSION

Several studies have demonstrated that a diagnosis based solely on a patient's medical history, physical examination, and laboratory tests is not reliable enough, even though these aspects are essential parts of the workup in a patient presenting with acute abdominal pain.

In this scenario, foreign-body ingestion is a common phenomenon, but they are mostly excreted in stool. Once sharp bodies are ingested without being realized, perforation of intestine is possible, and misdiagnosis may occur [6]. Clinical presentation of foreign body gastrointestinal tract perforation is nonspecific, in many cases with clinical signs of acute abdomen, which can mimic appendicitis, diverticulitis, ulcer peptic disease, and other common inflammatory conditions [7, 8].

Even though, traditionally, imaging workup starts with abdominal radiography, numerous studies

have proven low sensitivity and accuracy for this method in the evaluation of acute abdominal pain as well as various specific diseases such as perforated viscus, bowel obstruction, ingested foreign body, and ureteral stones. CT, and in particular CT after negative ultrasonography, provides a better workup than plain abdominal radiography alone [9].

The benefits of CT lie in decision-making for management, planning of a surgical strategy, and even avoidance of negative laparotomies. Based on abundant available evidence, major advances in diagnostic imaging, and changes in the management of certain diseases, the conclusion is that there is no place for plain abdominal radiography in the workup of adult patients with acute abdominal pain presenting in the emergency department in current practice [9, 10].

Differential diagnosis in this case should be focused on pathologies that cause an acute abdomen including complicated diverticulitis, severe adhesion syndrome, blunt trauma, acute abdomen due to cystic ovarian disease, etc. [11].

On the other hand, in this patient, it must be noted that the relevant history of Parkinson's disease does not encourage an assessment for psychiatric disorders; this point is not even acknowledged at the outpatient time, where follow-up by Psychiatry should be highly recommended.

It also should be emphasized that resection of the colonic segment with diverticulosis was not performed due to the lack of evidence of diverticulitis, for which antibiotic therapy was administered: piperacillin/Tazobactam 1.5 grams intravenous every 6 hours during 14 days.

CONCLUSIONS

Perforated viscus due to foreign body is an infrequent cause of acute abdomen, which must be evaluated according to the patient's characteristics. Diagnosis should be promptly made, through a detailed clinical history, including psychiatric disorders, and image methods, mainly CT.

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