https://doi.org/10.22516/25007440.1284

Case report

Anorectal Abscess Due to Foreign Body Ingestion: A Case Report

Carlos Mauricio Martínez-Montalvo,[1*] Juan Pablo Pérez-Daza,[2] Johana Andrea Sisa-Rodríguez,[2] Wilmer Orlando Aponte-Barrios,[3] Édgar Germán Junca.[4]

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Citation:
Martínez-Montalvo CM, Pérez-Daza JP, Sisa-Rodríguez JA, Aponte-Barrios WO, Junca EG. Anorectal Abscess Due to Foreign Body Ingestion: A Case Report. Revista. colomb. Gastroenterol. 2025;40(2):372-376. https://doi.org/10.22516/25007440.1284

[1] Internal Medicine Physician, Universidad del Rosario. Gastroenterologist, Universidad Nacional de Colombia, Bogotá, Colombia.
[2] Surgeon, Resident in Radiology and Diagnostic Imaging, Universidad Nacional de Colombia. Bogotá, Colombia.
[3] Head of the Department of Radiology and Diagnostic Imaging, Universidad Nacional de Colombia. Bogotá, Colombia.
[4] Gastrointestinal Surgeon, Universidad Nacional de Colombia, Hospital Universitario Nacional de Colombia. Bogotá, Colombia.

***Correspondence:** Carlos Mauricio Martínez-Montalvo.
carlitos220792@gmail.com

Received: 13/09/2024
Accepted: 18/11/2024

Abstract

Introduction: An anorectal abscess results from the involvement of the anal glands. Its main cause is obstruction of these glands, followed by Crohn's disease, trauma, malignancy, and immunodeficiencies. Ingestion of a foreign body is a rare etiology, with toothpick trauma described in the literature. **Case Presentation:** A 36-year-old man with no relevant medical history presented with a one-week history of sharp abdominal pain, followed by perianal pain accompanied by fever and purulent drainage. Initial evaluation documented an anorectal abscess extending above the levator ani muscle. A subsequent MRI revealed a toothpick as the causative foreign body. The patient underwent surgical management and a 10-day course of targeted antibiotic therapy. **Conclusions:** Anorectal abscess due to foreign body ingestion is rare, often unrecognized, and imaging sensitivity is variable. Computed tomography is recommended as the initial imaging modality. Supra-levator involvement requires early and adequate drainage to prevent fistula formation.

Keywords

Rectal fistula, foreign body reaction, gastrointestinal tract, abscess.

INTRODUCTION

An anorectal abscess is an inflammatory suppurative condition resulting from the involvement of the anal glands in the intersphincteric plane; it is more common in men and can occur at any age, but has a peak incidence between 20 and 40 years of age[(1)]. Its primary cause is obstruction of the anal glands, followed by Crohn's disease, trauma, malignancy, and immunodeficiencies[(2)]. The most common locations are perianal (42.7%), ischiorectal (22.7%), intersphincteric (21.4%), and supralevator (7.3%)[(3)]. A rare cause is the ingestion of foreign bodies, with multiple associated objects having been described, one of which is toothpicks[(4)]. This type of object most frequently causes colon perforation, followed by duodenal perforation. At the anorectal level, an incidence of 7% has been described, with perforation occurring in approximately 70% of cases[(5)]. We present a case of inadvertent toothpick ingestion, with subsequent development of an anorectal abscess involving the supralevator space, documented upon a second review of the initial magnetic resonance imaging.

CASE PRESENTATION

A 36-year-old man with no significant past medical history was admitted with a one-week history of migratory, stabbing

abdominal pain initially located in the epigastrium, which later localized to the hypogastrium and left iliac fossa. This was followed by the subsequent appearance of pain in the perianal region, purulent discharge, and febrile peaks (38.7 °C) two days prior to admission. On physical examination, the abdomen was soft, depressible. In the lithotomy position, the perianal physical examination revealed a draining pus orifice at the 9 o'clock position, without inflammatory changes. On digital rectal examination, a mucosal bulge was palpated in the distal rectum at the posterior right quadrant. Admission paraclinical tests revealed leukocytosis with neutrophilia and elevated C-reactive protein (CRP), while the rest of the studies showed no abnormalities. Antibiotic coverage with ceftriaxone 2 g/day and metronidazole 500 mg/12 hours was initiated.

A rectosigmoidoscopy was performed, which found a mucosal bulge in the distal rectum, without mucosal changes or defects in continuity. A contrast-enhanced pelvic magnetic resonance imaging was performed, showing evidence of an anorectal abscess with supralevator involvement, with an approximate volume of 40 mL, reactive mesorectal and internal iliac lymph nodes, as well as puborectalis muscle myositis (**Figure 1**). Upon a second interview, the patient reported consuming a potato with a toothpick one week before the onset of symptoms. Consequently, a second review of the pelvic MRI images was performed, which revealed a linear foreign body perforating the internal anal sphincter and extending into the right ischiorectal fat (**Figure 2**). He was taken for surgical management with abscess drainage and foreign body extraction without complications, and a drain was left in place (**Figures 3** and **4**). Directed antibiotic therapy was administered for 10 days for a susceptible *Escherichia coli* isolate.

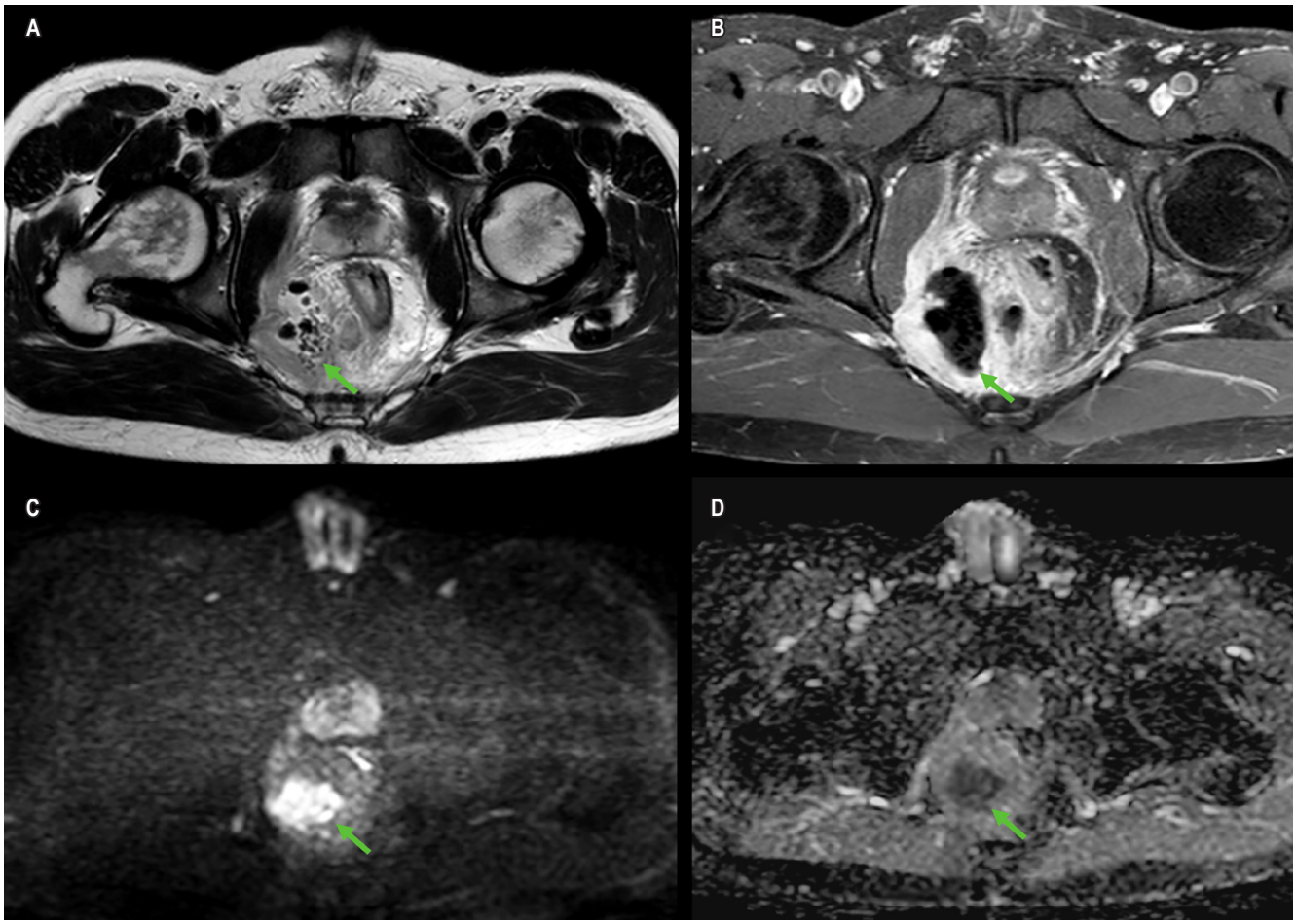

Figure 1. Imaging studies of the clinical case. **A.** Axial T2-weighted image. **B.** Axial T1-weighted fat-suppressed post-contrast image. **C.** DWI B800. **D.** ADC map. Initial findings from the contrast-enhanced pelvic MRI identifying the right supralevator abscess (arrow), demonstrating high signal intensity on T2WI with peripheral enhancement and diffusion restriction (high signal intensity on DWI B800 and low signal intensity on the ADC map) and internal gas bubbles. Images property of the authors.

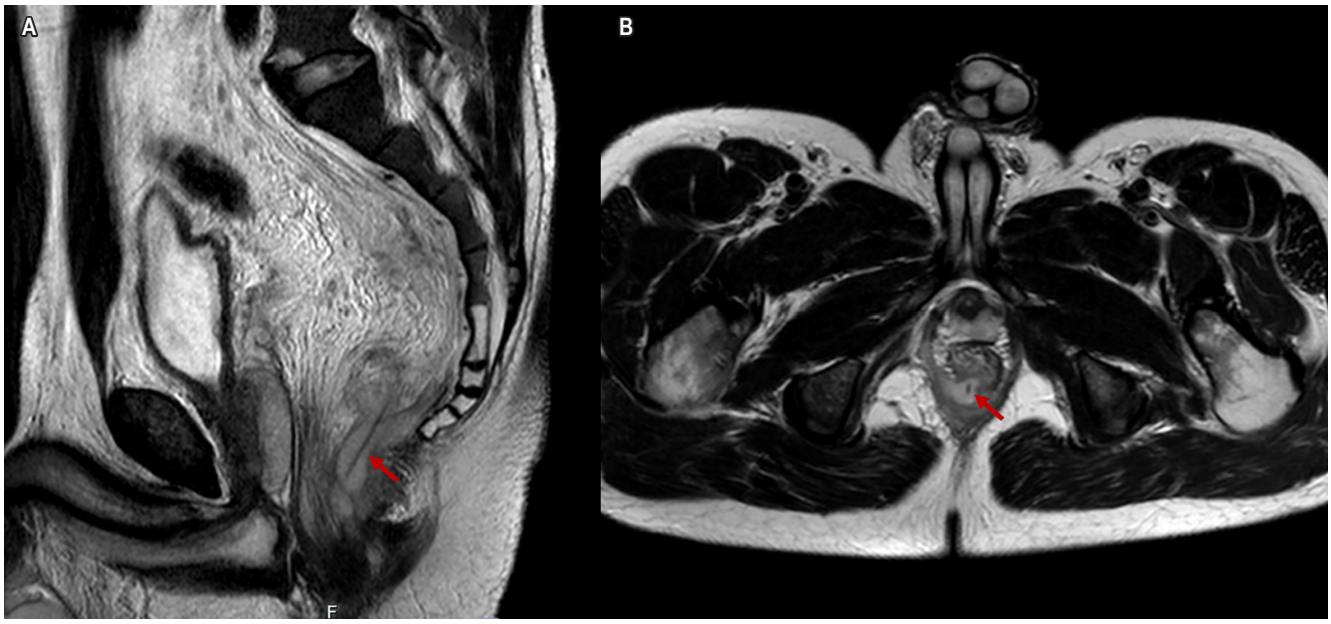

Figure 2. Toothpick (TP) evidenced on contrast-enhanced pelvic MRI. **A.** Sagittal T2-weighted image. **B.** Axial T2-weighted image. A hypointense linear image was identified, causing perforation of the internal anal sphincter at the 7 o'clock position and extending into the right ischiorectal fat. Images property of the authors.

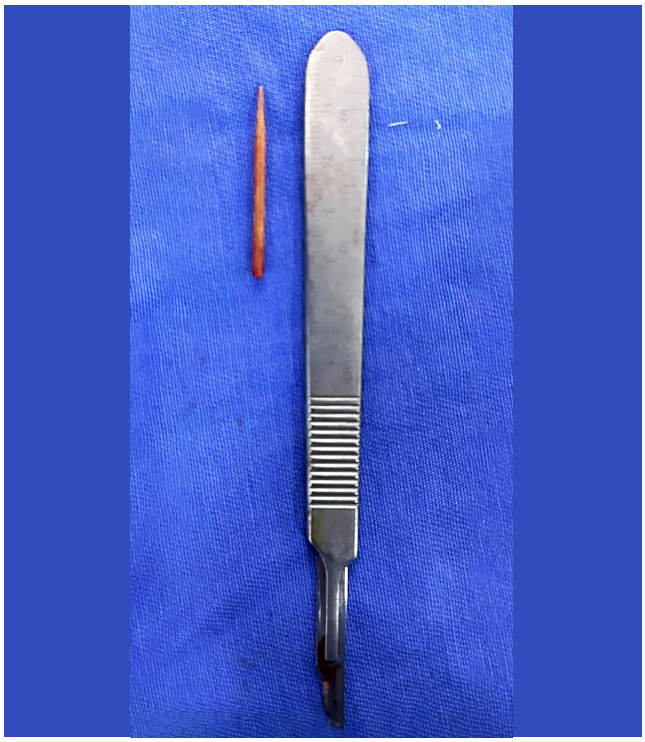

Figure 3. Toothpick (TP) extracted during the surgical procedure. Image property of the authors.

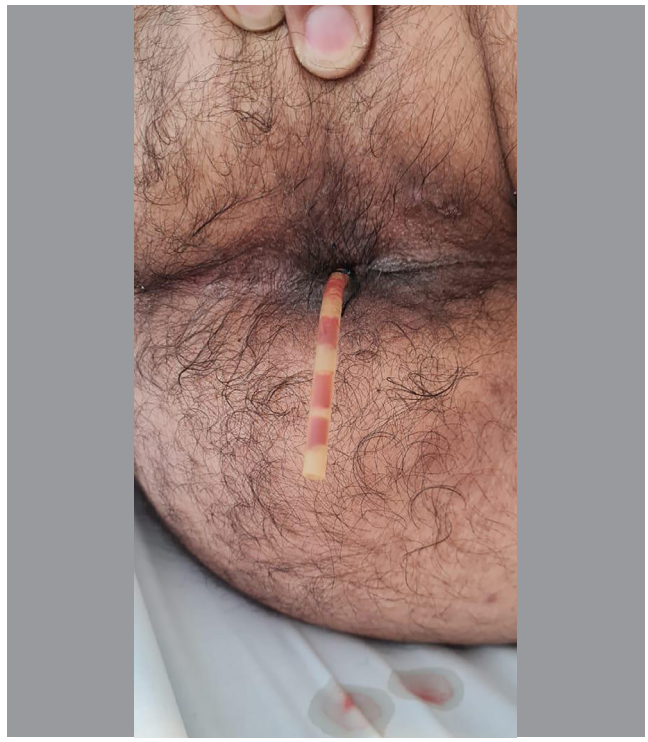

Figure 4. Postoperative abscess drainage with a transanal tube. Image property of the authors.

DISCUSSION

Ingested foreign bodies primarily lodge in the stomach without causing major complications; however, some patients may experience serious complications such as perforation, fistula, obstruction, or bleeding[6]. Toothpick ingestion is a rare event. One study compiling data from 1957 to 2012 reported 136 cases, of which 50% were inadvertent ingestions; the main symptom was abdominal pain (82%) followed by nausea (31%), and 70% had perforations. The most common location was the colon (37%) and the duodenum (23%), while the rectum was affected in only 7% (9 cases). More than half of the patients required surgical management, with a reported mortality rate of 9.6%[5]. Zhang et al. compiled cases from 2013 to 2022 and found 68 patients, identifying risk factors such as alcohol consumption, cognitive impairment, or even being hit while eating; most did not recall the moment of ingestion, and perforation occurred in 66.2%, mostly at the colorectal level. Sixty percent of the patients underwent surgical management, and only one patient died[4]. Complications in adjacent organs have been described in approximately 40% of cases, involving abdominal blood vessels, liver, abdominal muscles, kidneys, ureters, and mesentery[7].

In patients who report ingestion, abdominal pain—which occurs in 82% of them[5]—combined with the timing of ingestion are key points for determining the possible site of perforation, guided by imaging to look for signs of perforation (free gas, wall thickening, fat stranding, abscess, or signs of intestinal obstruction)[4], considering that a toothpick can remain in the abdomen for up to six months[8]. Available imaging modalities have variable performance; indeed, data show that 34% of cases are initially misdiagnosed[5]. The detection rate for toothpicks is 5.5% to 15% for radiography; 22% to 40% for ultrasound; 42.6% to 62.5% for computed tomography (CT); and 22.2% for magnetic resonance imaging (MRI)[4,5,9]. Therefore, CT is the imaging modality of choice for detecting this type of foreign body.

The initial MRI of our patient did not identify the foreign body, requiring a second review. Data exist showing that MRI is not recommended for detecting toothpicks, but if performed, the findings are a linear hypointensity on T1WI and T2WI. The most common local complication is an abscess, which demonstrates high signal intensity on T2WI with peripheral enhancement after contrast administration and diffusion restriction[10].

The patient developed an abscess above the levator ani muscle (supralevator). Involvement at this level is rare, with incidences ranging from 3% to 28% and a recurrence rate of up to 53%. Its importance lies in ensuring adequate drainage to avoid the risk of developing a supralevator fistula[11].

The approach for toothpick removal depends on its location, the presence of wall rupture, the type of abscess, and the involvement of adjacent organs. Endoscopic removal is initially preferred; however, if it traverses the wall, minimally invasive management via laparoscopy is preferred. Laparotomy is reserved for cases involving the small intestine, incomplete laparoscopic removal, or critically ill patients[4].

CONCLUSION

Foreign body ingestion is a common condition that usually resolves without complications, whereas anorectal involvement by a toothpick is rare. The initial approach with the highest diagnostic yield is CT and early drainage, especially in supralevator involvement, as it is a factor in preventing fistulous tracts.

Author Contributions

All authors contributed to the search, execution, writing, and production of the article.

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