CASE REPORT

Acute appendicitis resulting from rectosigmoid foreign body

Rahul Gupta a, Tariq Ahmed Mala b,*, Atul Gupta a, Arun Kumar Gupta a, Rozy Paul c

a Resident Pediatric Surgery, Department of Pediatric Surgery, SPMCHI, Sawai Man Singh Hospital, Jaipur, India
b Postgraduate Department of Surgery, Acharya Shri Chander College of Medical Sciences and Hospital Jammu (Jammu & Kashmir), Jammu, India
c Medical Officer, Jaipur, India

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Summary A case is presented of a rectosigmoid foreign body causing perforation of the rectosigmoid colon and ulcerating the base of the appendix that resulted in acute appendicitis in a 9-year-old boy, which was initially misdiagnosed. A preoperative diagnosis of acute appendicitis was made after clinical evaluation and abdominal ultrasound, suggestive of the same. An upright abdominal X-ray was also performed to rule out suspected perforation, which showed a radio-opaque shadow in the right iliac region, misdiagnosed as a fecalith. The abdomen was opened for appendectomy and the tip of a pen was immediately observed perforating the sigmoid colon, touching the base of the appendix and ulcerating it, resulting in appendicitis. Subsequently, the pen was removed from the perforation site. Sigmoid colon perforation was repaired and appendectomy was performed. There were no postoperative complications, and the patient was referred for psychiatric evaluation. Histopathology of the specimen confirmed acute appendicitis.

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1. Introduction

Although a foreign body in the rectum occasionally occurs, it is uncommon in Asia. In most cases, the mode of introduction is anal; sometimes a foreign body is swallowed, passes easily through the intestinal tract, and is lodged in the rectum. A foreign body in the rectum presents a considerable challenge for surgical management, and should be expeditiously treated because complications such as bowel perforation may occur. An extremely rare case of a 9-year-old boy with a rectosigmoid foreign body causing perforation of the rectosigmoid colon and ulcerating the base of appendix, resulting in acute appendicitis, is presented. Based on a search of the literature, this appears to be the first such case to be reported.

2. Case report

A 9-year-old boy presented with complaints of pain in the right iliac fossa with anorexia over the previous 3 days. On clinical examination, he was hemodynamically stable and afebrile, with marked tenderness in the right iliac fossa and rebound tenderness. Rectal examination was normal, and there were no signs of generalized peritonitis. Laboratory investigations revealed 80% polymorphonuclear leukocytosis, with a total leukocyte count of 11,900 mm$^3$; abdominal sonogram revealed similar results. An upright abdominal X-ray was concurrently performed to rule out suspected perforation, showing a radio-opaque shadow in the right iliac region, misdiagnosed as a fecalith (Fig. 1). A foreign body in the rectosigmoid was not suspected, and no free air was noted. A clinical diagnosis of acute appendicitis was made and the patient was prepared for appendectomy.

The abdomen was opened using a Lanz incision. The tip of a pen was immediately observed emerging from the incision, and a formal laparotomy was performed by elongating the incision. The tip of the pen was perforating the sigmoid colon and touching the base of the appendix and ulcerating it, resulting in appendicitis. The rectosigmoid perforation was 1 cm in diameter and the pen had sealed the perforation, thereby preventing peritoneal contamination (Fig. 2). The diagnosis was then changed to a rectosigmoid foreign body with perforation in the sigmoid colon. The foreign body, which was removed from the perforation site and retrieved with ease, was a ballpoint pen that was approximately 15 cm long. As the cause of the perforation was a foreign body, a biopsy was performed to search for any other perforation. There was no fecal contamination in the peritoneal cavity. The appendix was found to be grossly inflamed. An appendectomy was performed and the removed appendix was sent for histopathologic examination. The abdomen was closed in layers. Feeds were started on postoperative day 5. The patient was interviewed privately several times; however, he provided no history of inserting a pen into the rectum, neither himself (out of curiosity) nor another person. An enquiry of family members or any relatives indulging in unnatural sexual behavior with him was also conducted. The postoperative period was uneventful and the patient was referred for psychiatric evaluation. Histopathology of the specimen confirmed acute appendicitis with inflammation involving all layers of the appendix (Fig. 3).

3. Discussion

A rectal foreign body is reported only occasionally in the Asian subcontinent, with the majority of such reports being from the West. It has a bimodal age distribution, and is observed in people aged 20 years and older, generally involving an object having been inserted into the rectum for sexual gratification by either the patient or his/her partner. In elderly people, by contrast, a rectal foreign body is mainly the result of a prostatic massage or the breaking of impacted feces. Other causes are diagnostic and therapeutic instrumentation following ingestion, erosion from adjacent tissues, and assault. However, in our case, the patient was 9 years old, which is unusual. Males are more commonly affected than females.

Symptoms of a rectal foreign body are abdominal and rectal pain, discomfort, bleeding in the rectum, irretreivability, constipation, and/or urinary symptoms. In this case, the patient presented with pain in the right iliac fossa in addition to anorexia mimicking acute appendicitis. Considering the age of the patient and the mentioned complaints, a rectosigmoid foreign body was not suspected; thus, the patient was initially misdiagnosed.

Figure 2. The tip of the pen is perforating the sigmoid colon and touching the base of the appendix, which was grossly inflamed.
If interviewed privately, the patient may offer an accurate account of inserting the foreign body. However, in our case, despite interviewing the patient privately several times, he provided no history of inserting the pen into his rectum, by either himself or another person. Occasionally, having fallen onto the involved object is falsely reported.

Commonly reported rectal foreign bodies are plastic or glass bottles, cucumbers, carrots, wooden or rubber objects, bulbs, tube lights, axe handles, broomsticks, and vibrators. The object length may vary from 6 cm to 15 cm, and larger objects are more prone to complications. In our case, the foreign body was a ballpoint pen, which has been reported previously as a rectal foreign body.

In this case, the diagnosis of a rectosigmoid foreign body was not suspected, and rectal examination did not help because the pen was lodged high in the rectosigmoid. Rectal examination is the cornerstone of diagnosing a rectosigmoid foreign body, but it should be performed after radiography of the abdomen and pelvis to prevent accidental injury to the surgeon from sharp objects and to facilitate locating the foreign body.

Most (90%) cases without perforation are treated by transanal retrieval and endoscopic procedures. An impacted foreign body and perforation peritonitis are indications for surgical intervention. In our case, the ballpoint pen had perforated the sigmoid colon and ulcerated the base of the appendix because of its sharp tip, resulting in acute appendicitis.

Acute appendicitis induced by various types of ingested foreign bodies, such as a metal drill bit, needle, and foreign body of dental origin, has been reported. However, acute appendicitis resulting from a rectosigmoid foreign body is extremely unusual. Based on a search of the literature, this has yet to be reported.

A psychiatrist’s opinion must be sought for patients with a rectal foreign body for which the cause is uncertain, to prevent recurrence and to ensure that proper counseling is provided. In addition, for such a young child, insertion of a foreign body by others must be considered and ruled out. In addition, an enquiry of family members or any relatives indulging in unnatural sexual behavior must be conducted.

References