

Barium-induced Appendicitis in a 13-year Old Girl

The Editor,

Sir,

Barium-induced appendicitis (BIA) appears to be an extremely rare consequence of routine upper gastrointestinal (GI) tract studies. We report the case of a 13-year old girl with barium-induced appendicitis one month after upper GI contrast study.

A 13-year old girl was admitted to the gastroenterology department because of nausea and vomiting followed with chronic postprandial epigastric pain, lasting for two weeks. Standard laboratory and blood tests were within the normal range, except for slightly increased white blood cells (12.6×10^9). Her medical history was attributed to gastric ulcer and the patient underwent a barium meal. Administration of antacids and H₂ blockers provided a satisfactory response and she was discharged from hospital after five days. One month after the barium study, the girl was hospitalized again in the paediatric surgery department because of pain in the right lower quadrant, nausea, vomiting and fever up to 38 °C. She had persistent peritoneal tenderness over McBurney's point. A supine plain abdominal radiograph revealed retained barium in the appendix (Fig. 1). The white blood cell count was elevated (14×10^9) and biochemical analysis indicated inflammation (C-reactive protein – 23 mg/L).



Fig. 1: Radiography after barium enema study shows barium within the lumen of the appendix.

Abdominal ultrasound revealed appendicular inflammation and the girl was taken to the operating room with a presumptive diagnosis of inflamed appendicitis. At surgery, acute suppurative appendicitis was found. Histopathology

confirmed the diagnosis. An operative specimen was found to contain barium appendicolith (Fig. 2). Postoperative

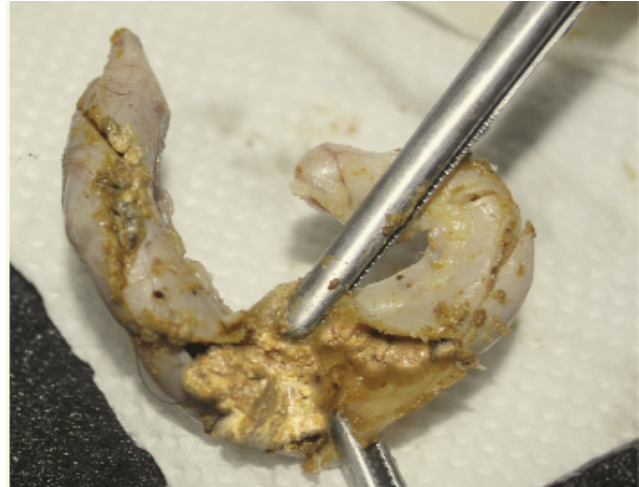


Fig. 2: Macroscopic view of the appendix filled with barium.

course was uneventful and the girl was discharged from hospital after seven days.

Barium in the appendix can be seen in 80–90% of patients during routine upper GI contrast studies (1), and most patients have spontaneous evacuation of the barium filled appendix within 48 hours to a few days. Occasionally, barium-fecal appendicolith can occur, causing impaction, triggering a cascade of inflammation and appendicitis as the final result (2).

Barium-induced appendicitis is a rare entity, with still unclear pathogenesis, and it is still being debated how to explain the cause-effect relationship between appendicitis and barium retained in it.

Although barium has been considered an inert agent to intestinal mucosa, reports suggest that mucosal barium injection can produce granulomatous reaction (3) causing luminal obstruction. Maglinte *et al* stated that barium represents a nidus for appendicolith formation (4), facilitating luminal obstruction, inflammation and appendicitis (5).

Interval appendectomy in asymptomatic patients is not justified, since Bowcock announced his results (6), but all patients should be informed that appendicitis can develop. Abdominal pain in the right lower quadrant, vomiting and fever should arouse suspicion for appendicitis. Appendectomy is the treatment of choice and pathohistological examination must confirm retained barium appendicolith in the resected appendix.

Keywords: Appendicitis, barium

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Erratum

“Truncus Arteriosus: Surviving at 46 Years without Intervention” by S Williams-Phillips was published in the March 2013 issue of the West Indian Medical Journal. In the legend for the Figure on page 274, LA refers to **left atrium**, and not left artery as indicated.