

PRIMARY ENTEROLITHIASIS AS A RARE CAUSE OF ACUTE SMALL BOWEL OBSTRUCTION IN AN ELDERLY PATIENT: A CASE REPORT

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We present a case of a 75 years old male patient presented to the emergency department with absolute constipation and abdominal discomfort for two days. Initial investigations were unremarkable and a non-contrast CT established the diagnosis of enterolithiasis which is a rare cause of small bowel obstruction. Enterolith is defined by the formation of gastrointestinal concretion in the setting of intestinal stasis.

INTRODUCTION

A 75-year-old male presented to the emergency department with absolute constipation and abdominal discomfort for two days. Initial investigations showed raised creatinine and mildly elevated bilirubin, with otherwise unremarkable findings. Ultrasound abdomen revealed distended small bowel loops with fluid suggestive of subacute intestinal obstruction, without evidence of mural thickening or masses. The ascending colon was distended with fecal matter and air, and small benign-appearing mesenteric lymph nodes were noted.

Enterolithiasis is an uncommon condition characterized by the formation of intraluminal gastrointestinal concretions due to intestinal stasis (Gupta et al., 2004). Enteroliths are often detected incidentally on imaging and represent a rare cause of acute small bowel obstruction (Agarwal & Khan, 2021). In this case, abdominal CT imaging confirmed the diagnosis. Surgery was performed, and enterotomy with enterolith extraction resulted in full resolution. Because the patient had no history of gallstones,

biliary-enteric fistula, or prior surgeries, the diagnosis of primary enterolithiasis was established (Chowdhury & Misra, 2016).

Enteroliths are broadly categorized into primary and secondary. Primary enteroliths arise from conditions leading to stasis such as diverticular disease, entero-anastomosis, blind pouches, small bowel tumors, and strictures caused by infectious or inflammatory disorders (Yuen & Ng, 2018). Secondary enteroliths are associated with gallstones passing through a cholecystoenteric fistula or, rarely, renal stones (Cortes et al., 2003). Primary enterolithiasis is relatively rare, most frequently documented in jejunal or duodenal diverticula, Meckel's diverticulum, post-hepatojejunostomy reconstructions, and Roux-en-Y anatomy (Maglinte et al., 2003). Secondary enterolithiasis has been reported in up to 80% of cases associated with tuberculosis and Crohn's disease (Chowdhury & Misra, 2016), and gallstone ileus remains the most common cause among the elderly (Cortes et al., 2003).

True primary enteroliths consist of substances normally found in chyme and are classified into cholic acid and calcium salt stones (Kurer et al., 2010). Cholic acid enteroliths form in low-pH environments

of the proximal small bowel, whereas calcium salt enteroliths develop under alkaline conditions, most commonly in the terminal ileum (Bhasin et al., 2007)..



(A) Dilated small bowel loops with multiple air–fluid levels, small bowel obstruction.



B) Hyperdense intraluminal enterolith within the small bowel, consistent with enterolithiasis causing obstruction (A CT Scan Image)



(C) 3D CT reconstruction shows a well-defined calcified enterolith lodged within the small bowel lumen

CT is considered the preferred modality for identifying enteroliths, determining their size and location, and assessing complications (Iwamoto et al., 2019). Oral contrast may improve visualization of radiolucent enteroliths (Lassandro et al., 2012). Imaging also assists in detecting associated conditions, such as strictures or fistulas, which contribute to stone formation and obstruction (Yuen & Ng, 2018). Evaluation of the gallbladder and biliary tree is essential to exclude gallstone ileus (Cortes et al., 2003). Enteroliths smaller than 20 mm are usually expelled spontaneously with peristalsis, whereas those larger than 25 mm commonly cause obstruction even without luminal narrowing (Kurer et al., 2010). Potential complications include intestinal gangrene, small bowel intussusception, obstructive cholangitis from duodenal stones, afferent loop syndrome, diverticulitis, iron deficiency anemia, gastrointestinal bleeding, and perforation (Bhasin et al., 2007). Surgical management remains the cornerstone of treatment for enterolith-induced obstruction. Digital fragmentation and manual milking may be effective in nearly half of case

(Maglinte et al., 2003). When unsuccessful or when complications exist, enterotomy and stone removal are required (Agarwal & Khan, 2021).

Conservative treatment with hydration, electrolyte correction, nasogastric decompression, and serial abdominal exams may be appropriate for small, non-obstructing enteroliths (<20 mm) in patients without luminal compromise (Yuen & Ng, 2018). Mortality in primary enterolithiasis is generally low but may reach up to 3% in patients with delayed diagnosis or severe obstruction (Kurer et al., 2010).

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