Case study

An Uncommon Presentation of Intestinal Lithobezoar in an Elderly Female: A Case Report

Abstract

Intestinal litho-bezoars, comprising accumulations of ingested foreign bodies, are rare clinical entities often associated with unusual dietary habits. We present a case of a 73-year-old female who presented with abdominal distension and pain. Clinical examination revealed tachycardia, hypertension, low oxygen saturation, and tachypnea.An abdominal X-ray and non-contrast computed tomography revealed gaseous distension with a radio-opaque mass in the right iliac fossa. The patient underwent an emergency exploratory laparotomy, which revealed a hard, immovable mass located 40 cm proximal to the ileocecal junction. Enterotomy was performed, and a 5x4 cm single, ovoid, brown-colored, hard lithobezoar weighing 47 grams was extracted. The proximal bowel loop exhibited dilation and ischemic changes, necessitating a 15 cm ileal resection with a two-layer ileal anastomosis. Stone analysis confirmed the composition as calcium oxalate, with histologically identifiable vegetative material on the outer surface. Detailed dietary history revealed a lifelong habit of consuming mud. This case highlights the importance of considering rare etiologies in patients presenting with acute abdominal symptoms, especially in elderly individuals. Intestinal lithobezoars, though uncommon, should be considered in the differential diagnosis, particularly when associated with distinctive dietary habits. Timely recognition and intervention are crucial to prevent life-threatening complications and ensure optimal patient outcomes.

Keywords:foreign body,Lithobezoar, Mud consumption, Small bowel obstruction, pica

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Introduction

Pica is an eating disorder that is generally described as the continual consumption or mounting of substances devoid of nutritional value. It can impact infants, children, individuals with intellectual disabilities, and occasionally, even adults.[1] The exact prevalence of pica is uncertain, but it is estimated to affect around 75% of infants, 15% of toddlers aged two to three years, and between 10% and 33% of mentally retarded children living in institutions.[2] Pica has the potential to result in malnutrition and severe, life-threatening complications such as perforation of hollow organs and intestinal blockages.[3]

Obstructions in the gastrointestinal tract can result from the ingestion of foreign objects or the formation of bezoars, which are clusters of food or fiber that develop within the digestive system. Bezoars account for approximately 0.4-4.0% of all cases with mechanical intestinal obstruction. Various types of bezoars are commonly encountered such as Phytobezoars: these are often found in elderly individuals and postmastectomy patients. They consist of undigested plant material. Lactobezoars: typically seen in neonates, lactobezoars are formed from curdled milk. Trichobezoars: these primarily affect adolescent females with trichotillomania (a condition involving compulsive hair-pulling). Obstructions due to trichobezoars usually occur at the gastric outlet. Lithobezoars: these are rare and result from the accumulation of ingested stones. Instances of lithobezoars are infrequently reported in medical literature.[3-6]

Bezoars are solid masses created when non-digestible foreign materials combine with substances in the gastrointestinal tract. While these masses are typically located in the

stomach, they can pass through the pylorus and enter the small intestine. When bezoars become lodged in the small intestine, they are likely to result in a condition known as small bowel obstruction (SBO). [7-8] Mechanical obstruction of the small intestine can result from various factors, including gallstones, foreign objects, bezoars, tumors, adhesions, congenital abnormalities, intussusceptions, and volvulus. Among these factors, the type of intestinal obstruction caused by gallstones is specifically known as "gallstone ileus." Gallstone ileus is an uncommon and potentially severe complication associated with cholelithiasis (the presence of gallstones in the gallbladder).[9] Cases of SBO caused by small intestine-originated bezoars (referred to as BI-SBO) often involve pre-existing conditions in the small intestine, such as stenosis, diverticula, or the presence of tumors. The formation of bezoars can be attributed to various factors, including disorders affecting the movement of the stomach (gastric motility) and a history of gastrointestinal surgery. It's important to note that the clinical symptoms of BI-SBO are challenging to differentiate from those of intestinal obstruction stemming from other causes. Consequently, early surgical intervention becomes a vital and practical treatment approach. Delayed treatment, on the other hand, can significantly heighten the risk of complications and mortality associated with this condition.[10]Lithobezoars are very rare in childhood and are most often seen in neglected and emotionally disturbed children.[11-13] To the best of our knowledge, there have been no reported cases of lithobezoars in elderly patients. We present a rare case ofan elderly woman who had untreated pica, leading to the formation of a litho-bezoar that subsequently resulted in small bowel obstruction.

Case Presentation

A 73-year-old female presented to the outpatient department with a 7-day history of abdominal distension and pain. She had no significant comorbidities or prior surgeries. Clinical examination revealed tachycardia (pulse rate of 124/min), hypertension (blood pressure of 146/88 mmHg), low oxygen saturation (86% on room air), and tachypnea (36/min). Physical findings included pallor, pedal edema, and diffuse abdominal tenderness with sluggish bowel sounds.

An erect abdominal X-ray showed gaseous distension with a radio-opaque mass in the right iliac fossa (RIF). Hemoglobin levels were critically low at 5.1 g/dL, indicating hypochromic microcytic anemia. The platelet count was 100,000/mm³, and the white blood cell count was 12,800/mm³. Serum creatinine was 2.1 mg/dL, while other laboratory parameters were within normal limits.

The patient was admitted to the intensive care unit (ICU), and a non-contrast computed tomography (NCCT) of the abdomen revealed dilated bowel loops with a maximum diameter of 4 cm proximal to a calcified mass (Figure 1). Emergency exploratory laparotomy was performed, revealing a hard, immovable mass located 40 cm proximal to the ileocecal junction. Enterotomy was performed, and a 5x4 cm single, ovoid, brown-colored, hard lithobezoar weighing 47 grams was extracted (Figures 2 and Figure 3). The proximal bowel loop exhibited dilation and ischemic changes, necessitating a 15 cm ileal resection with a two-layer ileal anastomosis. Stone analysis confirmed the composition as calcium oxalate, with histologically identifiable vegetative material on the outer surface. Detailed dietary history revealed a lifelong habit of consuming mud.

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Figure 1. Non-contrast computed tomography showing dilated bowel loops with a maximum diameter of 4 cm proximal to a calcified mass

Figure 2. A hard mass with an ischemic bowel segment

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Figure 3. Intraoperative 5x4cm single ovoid brown coloredhard bezoar weighing 47gms

Discussion

Pica is an eating disorder characterized by the recurrent consumption of non-food items. It is most commonly observed in young children, pregnant women, individuals with learning disabilities, and patients with chronic renal failure who are undergoing dialysis. Some contributing factors for this disorder include iron deficiency, psychological elements such as poverty, parental neglect, broken families, and mental retardation.

Bezoars are defined as masses that are ingested, not food-related, and indigestible, found within the gastrointestinal system. They are categorized into true bezoars, which form due to the precipitation and deposition of substances from ingested food, and false bezoars, which result from the clumping and thickening of intestinal contents. These can be further divided into different types, such as pharmacobezoars, phytobezoars, lactobezoars, trichobezoars, and lithobezoars.[7, 8]Bezoars can manifest various clinical symptoms, including abdominal pain, nausea, vomiting, weight loss, diarrhea, constipation, intestinal obstruction, and even intestinal perforation. However, in many cases, they cause no noticeable symptoms. The formation of bezoars is typically associated with factors such as reduced intestinal motility or stasis, gastric acidity levels, and delayed gastric emptying.[14]

Lithobezoar is a term used to describe the accumulation of stones within the gastrointestinal tract (GIT). The most frequently encountered complications associated with lithobezoars are intestinal obstruction, followed by perforation and peritonitis.

There are few reported cases of pica causing colonic obstruction in children but we report a rare case of pica an ignored condition that can result in small bowel obstruction in an elderlywoman. Small bowel calculi tend to develop in alkaline conditions, and conditions like age-related hypochlorhydria and the use of proton pump inhibitors may exacerbate this. Gallstones are primarily associated with the proximal section of the small intestine, while calcium enteroliths are rarer and typically develop in the distal part of the small intestine.[9]

Clinical examination can potentially reveal their presence. When palpating the abdomen, healthcare providers may observe a “colonic crunch sign” and a “colonic crush sign”. A radiographic examination can confirm the diagnosis, with the appearance often likened to “corn on the cob”.Lithobezoars are a rare occurrence, and their exact prevalence remains unknown. In a literature search, only a few case reports of colonic litho-bezoars were

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identified, all of which involved young children presenting with acute abdominal symptoms.[3]

Lithobezoars in geriatric populations refer to the exponentially rare occurrence of bezoars composed of stones or other solid, indigestible materials in the gastrointestinal tract of elderly individuals. These stones can vary in composition but are often composed of minerals like calcium oxalate. The formation of lithobezoars is typically associated with specific behavioral or psychological factors, such as pica, which involves the persistent consumption of non-nutritive substances.

A comprehensive patient history serves as the primary diagnostic method. While CT scans and endoscopy are definitive diagnostic procedures, endoscopy may be the preferred minimally invasive treatment option for gastric bezoars.[15] However, for bezoars situated in the small intestine, an endoscopic approach is inadequate, and their diagnosis necessitates the use of CT imaging. CT scans also offer the advantage of visualizing multiple small bowel bezoars, which is especially valuable in surgical cases.[16]

Lithobezoars in geriatric individuals can present unique challenges in terms of diagnosis and treatment. Due to age-related physiological changes and potential comorbidities, these patients may be at higher risk for complications related to lithobezoar-induced gastrointestinal obstructions.

Healthcare providers need to be aware of the possibility of litho-bezoars in geriatric patients, particularly when evaluating those with abdominal symptoms or a history of unusual dietary habits like pica. Timely diagnosis and appropriate intervention, often involving surgical removal, are crucial for managing lithobezoars and preventing potential complications.

This case underscores the significance of considering pica and bezoar formation in elderly patients presenting with abdominal symptoms. The rarity of litho-bezoars in geriatric populations emphasizes the need for a high index of suspicion in diagnosing such cases. Prompt surgical intervention and thorough postoperative care resulted in a successful outcome for this patient.

Conclusion

Lithobezoar-induced small bowel obstruction is an exceptionally rare condition in geriatric patients. This case report highlights the importance of recognizing the potential consequences of pica and bezoar formation in the elderly, leading to early diagnosis and appropriate management to achieve favorable outcomes.

Consent

As per international standards or university standards, the participant's written consent has been collected and preserved by the author(s)

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