World Journal of Surgery and Surgical Research

Case Report
Published: 28 Dec, 2018

Foreign Body and Irradiated Bowel, Dual Synergy Causing Intestinal Obstruction- A Case Report

Varun Palanati, Santhosh Anand KS, Thirunavukkarassu S, Munikrishna S, Supreeth Reddy and Mayank Gurjar*

Department of Surgical Gastroenterology, Narayana Medical College and Hospital, India

Abstract

Bezoars are masses formed from mixed substances in the gastrointestinal system and account for fifth most frequent cause of Small Bowel Obstructions (SBO). Phytobezoar is the most common bezoar, which is a concretion of undigestible fibers from ingested vegetables and fruits. Chronic radiation enteritis can occur even after decades of exposure. We report a case of woman, who presented with recurrent partial SBO due to radiation, induced terminal ileal stricture and phytobezoar.

Keywords: Phytobezoar; Radiation stricture; Irradiated bowel

Introduction

The term "bezoar" refers to ingested foreign materials that accumulate within the gastrointestinal tract [1]. These represent a rare cause of intestinal obstruction that must be considered in the diagnostic workup. Radiation induced small bowel disease can present with armamentarium of symptoms Here we present a rare case of partial small bowel obstruction caused by multiple ileal strictures due to radiation superadded with phytobezoar.

Case Presentation

A 55-year-old woman presented with 8 months history of recurrent lower abdominal colicky pain and few episodes of bilious vomiting. She did not have anorexia or weight loss. She had received radiotherapy 18 years ago for carcinoma cervix. Physical examination revealed a soft abdomen with mild distension and normal bowel sounds. Laboratory findings on admission were normal except for mildly reduced serum albumin. A plain radiography of the abdomen revealed multiple air fluid levels. Contrast Enhanced Computed Tomography (CECT) showed segmental dilation of proximal small bowel loops and few collapsed distal ileal loops with two transition points. Proximal to these transition points, had one each intraluminal filling defects which were approximately 2 cm, ovoid and heterogeneous having an air pocket within (Figure 1).

Patient underwent laparoscopy and strictured segment of distal ileum was localized and exteriorized. There were 5 strictures spanning over 30 cm of ileum 50 cm proximal to ileocaecal junction. Two Phytobezoars of sizes (4 cm and 3 cm) were identified between these strictures the transition point along with segmental dilatation of ileum between strictures. Rest of the bowel was healthy (Figure 2). She underwent segmental ileal resection and primary anastomosis. Histological analysis of the specimen revealed vascular congestion, fibrosis of several areas of the serosa and submucosa with an increase of thickness of the vessel walls suggestive of an inflammatory radiation-induced damage. Postoperative period was uneventful and discharged on fifth post-operative day. Patient was doing well two months after surgery in the follow up period.

Discussion

Phytobezoars are the most frequent type of bezoars. They are composed of undigestible plant fibers, like cellulose and tannin that could be implicated in their formation. The risk factors for bezoar formation include vegetarian diet, poor mastication, diabetic gastroparesis, haemodialysis, narcotic or anticholinergic use and conditions that impair motility like Vagotomy and previous gastrectomies [2-4].

Although gastric bezoars are the most frequent site of bezoar formation, intestinal obstructions could also be caused by bezoars in the small bowel [5]. Interestingly intestinal bezoars are found in last 50 cm to 70 cm from the ileocecal valve because it is narrow, the intestinal motility is relatively slower, and a large amount of water absorption hardens the bezoar [6-8].

OPEN ACCESS

Correspondence:
Santhosh Anand KS, Department of Surgical Gastroenterology, Narayana Medical College and Hospital, Chinthareddypalem, Nellore, Andhra Pradesh, 524003, India, Tel: 91 9486116981;
E-mail: kssa.5149@gmail.com

Received Date: *06 Nov 2018*
Accepted Date: *26 Dec 2018*
Published Date: *28 Dec 2018*

Citation:
Palanati V, Santhosh Anand KS, Thirunavukkarassu S, Munikrishna S, Reddy S, Gurjar M. Foreign Body and Irradiated Bowel, Dual Synergy Causing Intestinal Obstruction- A Case Report. World J Surg Surgical Res. 2018; 1: 1084.

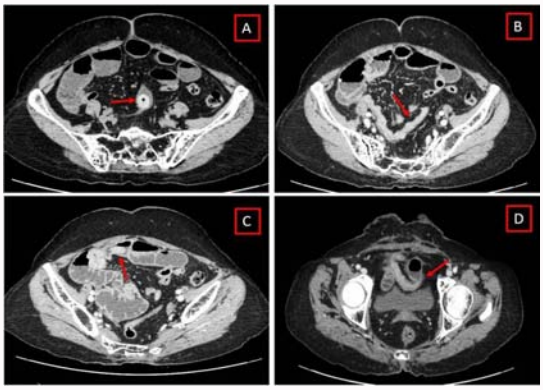

Figure 1: A: Phytobezoar. **B:** Collapsed distal bowel (arrowmark) and dilated proximal bowel. **C:** Phytobezoar causing ball valve effect. **D:** Stricture with transition zone.

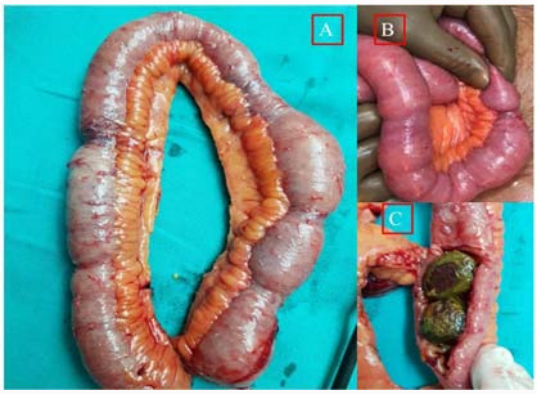

Figure 2: A: Resected segment showing multiple strictures. **B:** Demonstrating ball valve effect. **C:** Phytobezoars in between stricture.

Chronic radiation small bowel changes can present with spectrum of symptoms ranging from diarrhea, malabsorption, melena and stricture induced obstruction. These can even occur 6 months to 30 years following the radiation [9]. Multiple strictures in ileum cause segmental dysmotility and may form a blind loop. Irradiated bowel has defective digestion and absorption. These factors lead to the accumulation of fibers and bezoar formation.

The symptoms of bezoars can vary according to size, location and level of obstruction. Gastric bezoars usually present with frequent vomiting, upper abdominal pain and upper abdominal distension whereas bezoars in the small bowel usually present with symptoms of bowel obstruction like abdominal distension, abdominal pain and nausea and vomiting.

There is definite importance in early diagnosis through radiological investigation because surgical interventions can be delayed and complications will be increased if it is misdiagnosed as adhesive bowel obstruction, which may be treated with conservative managements [10]. X-ray is non diagnostic and abdominal sonography is operator dependant [11,12].

CECT abdomen is quick and objectively confirms the cause of obstruction, the level of the obstruction, as well as to find complications like bowel ischemia and perforation [10,13]. A bezoar appears like- a mass with mottled gas in the transition point [11]. Though this may mimic fecal matter, the latter are present in longer segments, not near transition points and seldom form encapsulated well defined wall like bezoars [14]. The diagnostic rate of abdominal CT for intestinal obstruction and bezoar are 73% to 95% and 65% to 100% respectively [10,11,13].

Though chemical dissolution and endoscopic removal have been tried in gastric bezoars surgical treatment is the only choice for intestinal obstruction. One should check for bezoar anywhere else in the bowel while operating in order to avoid recurrent small bowel obstruction [11].

Our patient had five strictures in terminal ileum, which were passable. But there were two phyto bezoars in the segments between strictures. A possible intermittent ball valve mechanism could have caused recurrent intestinal obstruction. To our knowledge, only two case reports have been found in the literature pertaining to radiation induced small bowel stricture and subsequent phytobezoar formation [9,15].

Conclusion

Although operating in an irradiated bowel is deferred and conservative treatment is tried in partial bowel obstruction following radiotherapy, it should be remembered that surgery is the only treatment if associated with bezoars.

Author's Contributions

Dr. Varun and Dr. Santhosh contributed in forming manuscript and critical review.

Dr. Thirunavukkarasu, Dr. Munikrishna, Dr. Supreeth and Dr. Mayank helped in reviewing the article.

References

1. Hall JD, Shami VM. Rapunzel's syndrome: gastric bezoars and endoscopic management. Gastrointest Endosc Clin N Am. 2006;16(1):111-9.
2. Zamir D, Goldblum C, Linova L, Polychuck I, Reitblat T, Yoffe B. Phytobezoars and trichobezoars: a 10-year experience. J Clin Gastroenterol. 2004;38(10):873-6.
3. Tebar JC, Campos RR, Parrilla-Paricio P. Gastric surgery and bezoars. Digestive Diseases Sciences. 1992;37(11):1694-6.
4. Pitiakoudis M, Tsaroucha A, Mimidis K, Constantinidis T, Anagnostoulis S, Stathopoulos G, et al. Esophageal and small bowel obstruction by occupational bezoar: report of a case. BMC Gastroenterol. 2003;3:13.
5. Hong SK, Lim TJ, Park YK. A clinical study of bezoars (108 cases). Keimyung Med J. 1986;5:68-73.
6. Jeong YH, Moon TI, Rhee JK, Chae KM. Clinical analysis of 17cases of bezoar. Korean J Gastroenterol. 1989;21:572-6.
7. Lee SG, Lee HY, Park KJ, Kim SH, Kim MC, Choi HJ, et al. The clinical analysis of 25 cases of bezoars. J Korean Surg Soc. 2005;68(5):407-13.
8. Park JS, Lee JI, Jeong JH, Lee JH, Moon HJ, Park JK, et al. The clinical analysis of 12 cases of bezoars. J Korean Surg Soc. 2009;77(3):177-83.
9. Glynn F, Mahmood M, Burns P, Udani P, Carroll K, Wilson I. Small bowel phytobezoar--a rare delayed complication of radiotherapy. Ir Med J. 2002;95(7):218.
10. Ho TW, Koh DC. Small-bowel obstruction secondary to bezoar impaction: a diagnostic dilemma. World J Surg. 2007;31(5):1072-8.
11. Bae KS, Jeon KN, Ryeom HK. Bezoar associated with small bowel obstruction: comparison of CT and US. J Korean Radiol Soc. 2003;48:53-8.
12. Ripolles T, Garcia-Aguayo J, Martinez MJ, Gil P. Gastrointestinal bezoars: sonographic and CT characteristics. AJR Am J Roentgenol. 2001;177(1):65-9.

13. Kim JH, Ha HK, Sohn MJ, Kim AY, Kim TK, Kim PN, et al. CT findings of phytobezoar associated with small bowel obstruction. Eur Radiol. 2003;13(2):299-304.

14. Zissin R, Osadchy A, Gutman V, Rathaus V, Shapiro-Feinberg M, Gayer G. CT findings in patients with small bowel obstruction due to phytobezoar. Emerg Radiol. 2004;10(4):197-200.

15. Quercioli A, Dallegri F, Ottonello L, Montecucco F, Borgonovo G. Intestinal Radiation-Induced Stricture Favours Small Bowel Obstruction by Phytobezoar. Report of a case. Gastroenterol Res Practice. 2009;2009:4.