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Phytobezoar: A train can hide another

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ABSTRACT

INTRODUCTION AND IMPORTANCE: Acute bowel obstruction is a life-threatening condition; late or incomplete management worsens the prognosis. Bezoars are a rare etiology of this disease, and the diagnosis can be confusing. This study aims to present and discuss a very rare case of concomitant bezoars.
CASE PRESENTATION: We report the case of a 22-year-old male with a history of mental retardation who was admitted to the emergency department for acute intestinal obstruction with diffuse abdominal guarding. Laboratory findings revealed a biological inflammatory syndrome and an electrolyte imbalance. The abdominal X-ray was without abnormalities. Intraoperatively, a phytobezoar in the jejunum was initially discovered. However, the entire digestive tract's meticulous exploration discovered a concomitant vegetable bezoar in the stomach.
CLINICAL DISCUSSION: Phytobezoar obstruction is very rare and usually located in the distal small bowel, related to the reduced intraluminal diameter, the decreased mobility, and the higher water absorption in this portion. The clinical presentation is non-specific and reflects acute intestinal obstruction in the majority of cases. The abdominal CT-scan is useful for diagnosis. However, Surgeons should not delay the intervention until they recognize the etiology preoperatively because it is not always obvious. Besides, surgeons should explore the entire gastrointestinal tract during the intervention; a second phytobezoars' location is undoubtedly exceptional but exists, as evidenced by our case.
CONCLUSION: When phytobezoar obstruction, urgent care is required, and the intraoperative exploration of the entire digestive tract is a simple gesture with capital importance. It allows to prevent avoidable complications, especially a second surgery.
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1. Introduction

Bezoar is the accumulation of indigestible or poorly digestible substances in the gastrointestinal tract [1]. There are four types of bezoars: phytobezoars, trichobezoars, pharmacobezoars, and lactobezoars. The most common type is phytobezoars, which are composed of undigested fiber from vegetables or fruits [2]. Phytobezoars account for less than 4% of small bowel obstructions [3] and double localization accounts for only 10,75 % of total cases of phytobezoars [4]. Rarely, they can form and stop in the stomach due to flexible gastric volume [1]. Being bifocal is even rarer. Herein, we report a very rare case of intestinal obstruction caused by a double phytobezoar in an adult man. This work has been reported in line with the SCARE 2020 criteria [5].

2. Presentation of case

We report the case of a 22-yeal-old male who was transported to the emergency department by a non-emergency patient transport service with abdominal pain, bilious vomiting, and fever evolving for ten days. He had a personal and family history of mental retardation and was on antiepileptic drugs. Careful interrogation of the patient's family dnied any patient's history of tobacco, alcohol, or illicite drug use. The physical examination revealed a mildly dehydrated patient, with neither pallor nor jaundice. The body temperature was 38,5°c. The heart rate was 110 beats/minute, arterial blood pressure was 120/80 mmHg, and respiratory rate was 22 cycles/minutes. Abdominal examination revealed a slightly distended abdomen with diffuse guarding. No abdominal mass was palpable, and no organomegaly was noted. Bowel sounds were sluggish. Both rectum (by digital examination) and hernia orifices were empty. The rest of his physical examination yielded no additional information. Laboratory findings revealed a biological inflammatory syndrome: WBC of 13200elt/l and CRP of 48 mg/l, and an electrolyte imbalance with hypokalemia (K+ level 2.9 mmol/l), and hyponatremia (Na+ level 131 mmol/l) was noted. The abdomi-

Abbreviations: CT, computed tomography.

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Fig. 1. Intraoperative view showing vegetable bezoar in the jejunum.

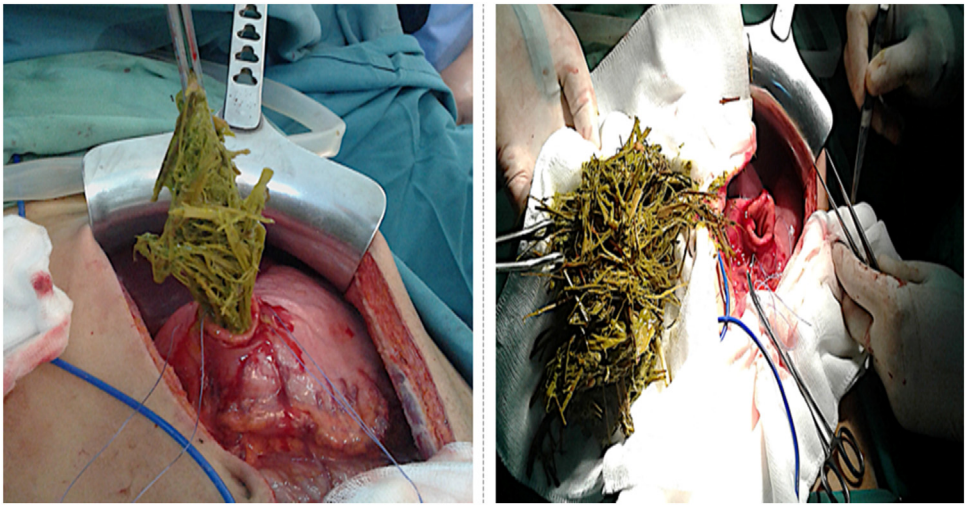

Fig. 2. Intraoperative view showing concomitant vegetable bezoar in the stomach.

nal X-ray showed air-fluid levels, and the CT scan was unavailable. The patient underwent emergency laparotomy through a midline incision. He was operated on by a chief resident of surgery under the supervision of a senior assistant professor of surgery. The intra-operative findings revealed two foreign bodies in the stomach and jejunum (80 cm from the Treitz angle). It was a vegetable bezoar (heap of hay) (Figs. 1 and 2). The bezoars in the stomach were pulled out through a longitudinal gastrostomy. However, small bowel resection with end-to-end manual anastomosis was performed to remove the intestinal phytobezoar. The operative time was approximatively 120 min. The patient was given a post operative antisecretory treatment with pump inhibitors, an intravenous antibiotic therapy based on amoxicillin/clavulanate 1 g /62,5 mg three takes per day associated with 1 g of paracetamol every six hours and a daily prophylactic subcutaneous Enoxaparin injection. Oral feeding was started on the third postoperative day, and the patient had an uneventful recovery. He was discharged on postoperative day five. The patient was put on the same previously detailed postoperative medical treatment for seven days. The patient attended two follow-up visits after 7days and two months. Final physical examination revealed a fully recoverd and satisfied patient with a healed wound.

3. Discussion

Phytobezoars are usually constituted in the stomach [2]. The disopyrobezoar, related to the persimmon, is the most commonly reported type of phytobezoar [6]. Previous gastric surgery and vagotomy are the main risk factors that decrease gastric motility and delay gastric emptying favouring phytobezoars development. Other risk factors include hypothyroidism, diabetes mellitus, advanced age, neuropathy, myotonic dystrophy, dehydration, poor mastication, bolus intakes of indigestible vegetable foods, Crohn's disease, and gastrointestinal carcinoma [7,8]. Sometimes part or all of the mass may leave the stomach and get stuck in the distal small bowel. This embedding site's main factors are reduced intraluminal diameter, the decreased mobility, and the higher water absorption in this portion [9]. Clinical presentations of intestinal phytobezoar vary from no symptom to acute abdominal syndrome, and it depends on bezoars' location. A small bowel obstruction often expresses the bezoar, and abdominal pain is present in 96–100 % of cases associated with nausea and vomiting [9]. Necrosis of the intestinal wall with possible intestinal perforation may occur. A plain abdominal X-ray confirms intestinal obstruction without determining its etiology. The CT scan allows diagnosing the

obstruction, determining the etiology, the obstruction site, and shows the signs of radiological severity with a specificity of about 65 % [10]. Surgical indications depend on the size, consistency, and location of the bezoar. Small bezoars can be removed with endoscopic treatment. However, for larger bezoars, surgery is usually necessary [3]. Three surgical therapeutic choices can be adjusted: the removal after fragmentation and milking of the bezoar into the caecum, Enterotomy or gastrotomy-extraction, and gastric or intestinal resection-anastomosis in the case of necrosis or perforation [3,9]. Some authors have reported dissolution with Coca-Cola® lavages with good results [3,8].

The first key message underlined in this clinical case is that the phytobezoar does not present specific features for the diagnosis: The clinical presentation depends on the foreign body's anatomical location, and the radiological exams lack accuracy due to the resemblance of the phytobezoar to feces [9,11]. Subsequently, the patient's particular profile and his past medical history should mainly guide the diagnosis [3,12]. The second key message also emphasized is that a phytobezoar found during surgery never relieves the surgeon from the obligation to search for another [9]. The phytobezoar can be found throughout the digestive tract, and a concomitant phytobezoar is rare but not exceptional [3,13]. It is mandatory to make a meticulous exploration of the entire digestive tract and give this simple gesture capital importance to prevent avoidable complications, especially a second surgery [9].

4. Conclusion

The phytobezoar represents a very rare cause of acute intestinal obstruction without diagnostic peculiarities. Thus, the diagnosis remains challenging preoperatively. The abdominal CT scan can improve the diagnosis, but it should not delay management. The major learning point highly underlined in this case report is that exploring the entire digestive tract intraoperatively is an imperative procedure that can be life-saving. As any other case report, this work does not offer the ability to deliver epidemiological information on incidences or prevalences, comparing data concerning differents valid management modalities or generalize the findings to a wider population.

Declaration of Competing Interest

None.

Funding

None.

Ethical approval

An ethical approval was obtained from the Jendouba Regional Hospital Medical Ethics Committee N° JH26Y21. We confirm that all methods were performed in accordance with the ethical guidelines of the 1975 Declaration of Helsinki.

Consent

Consent to participate: Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

AM contributed to the work conception, ET wrote the manuscript.

The final version of manuscript was read and approved by all authors.

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References

[1] F. Tan, H. Mo, X. He, H. Pei, An unusual case of gastric outlet obstruction caused by multiple giant persimmon phytobezoars, Gastroenterol. Rep. 7 (February (1)) (2019) 74–76.
[2] N. Razavianzadeh, B. Foroutan, F. Honarvar, M. Forozeshfard, Small bowel obstruction attributable to phytobezoar, Oxf. Med. Case Rep. 2016 (December (12)) (2016), omw092.
[3] S. Occhionorelli, M. Zese, S. Targa, L. Cappellari, R. Stano, G. Vasquez, A rare case of a double phytobezoar causing gastric and jejunum obstruction in an adult man: a case report, J. Med. Case Rep. 10 (December (1)) (2016) 350.
[4] S.-E. Park, J.Y. Ahn, H.-Y. Jung, S. Na, S.J. Park, H. Lim, et al., Clinical outcomes associated with treatment modalities for gastrointestinal bezoars, Gut Liver 8 (July (4)) (2014) 400–407.
[5] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, SCARE Group, The SCARE 2020 guideline: updating consensus Surgical CAse REport (SCARE) guidelines, Int. J. Surg. Lond. Engl. 84 (December) (2020) 226–230.
[6] K.A. Paschos, A. Chatzigeorgiadis, Pathophysiological and clinical aspects of the diagnosis and treatment of bezoars, Ann. Gastroenterol. 32 (3) (2019) 224–232.
[7] Y. Taha, K. Salman, F. Alrayyes, S. Alrayyes, An unusual case of phytobezoar-induced small bowel obstruction, J. Surg. Case Rep. 2019 (November (11)) (2019), rjz296.
[8] S. Mahir, A.M. Salih, O.F. Ahmed, F.H. Kakamad, R.Q. Salih, S.H. Mohammed, et al., Giant phytobezoar; an unusual cause of gastric outlet obstruction: a case report with literature review, Int. J. Surg. Case Rep. 67 (2020) 154–156.
[9] S.H. Oh, H. Namgung, M.H. Park, D.-G. Park, Bezoar-induced small bowel obstruction, J. Korean Soc. Coloproctol. 28 (April (2)) (2012) 89–93.
[10] K.A. Pujar, Phytobezoar: a rare cause of small bowel obstruction, J. Clin. Diagn. Res. (2013) [Internet]. [cited 2021 Jan 16]; Available from: http://www.jcdr.net/article_fulltext.asp?issn=0973-709x&year=2013&volume=7&issue=10&page=2298&issn=0973-709x&id=3504.
[11] S. Ooi, K. Hong, Small bowel obstruction caused by dried apple, Int. J. Surg. Case Rep. 25 (March (10)) (2015) 154–157.
[12] Y.-B. Zhang, Z.-G. Gao, Q.-X. Xiong, L.-F. Zhang, D.-T. Cai, J.-B. Cai, Clinical experience in the treatment of children who swallowed multiple magnetic foreign bodies: a report of five cases, World J. Pediatr. 13 (June (3)) (2017) 274–277.
[13] K.A. Paschos, A. Chatzigeorgiadis, Surgical and endoscopic treatment of a double phytobezoar causing ileus and jaundice: a case report, Iran. J. Med. Sci. 44 (January (1)) (2019) 70–73.

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