

Induced sepsis secondary to colonic phytobezoar: A rare case report

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ABSTRACT

Introduction: The word bezoar derives from the Persian term “padzahr” or from the Arabic term “badzehr,” both terms meaning antidote or antivenom. Bezoars are classified in trichobezoars, lactobezoars, pharmacobezoars, and phytobezoars, which constitute the most common type of bezoar. Bezoars are responsible for 0.4–4% of all cases of mechanical intestinal obstruction.

Case Report: A 55-year-old female patient, who arrived at the emergency department, presenting intestinal obstruction characterized by the absence of evacuations and being unable to channel gasses with diffuse abdominal pain, nausea, and vomiting of five days of evolution. Only important antecedent was days prior to the interrogation of profuse intake of sunflower seeds. Abdominal X-ray showed distension of colonic loops, air-fluid levels, and an image compatible with coprostasis at sigmoid colon. Preoperative tests with neutrophilic leukocytosis with a white blood count of 27,000. Abdominal tomography showed the large bowel with abundant fecal material causing dilation of intestinal loops and abundant liquid in the pouch of Douglas. The patient underwent surgery where it was found a hyperemic and slightly phlegmonous sigmoid colon with thick content inside. Resection of the affected segment and primary colorectal anastomosis were performed. The extracted piece was

opened with evidence of sunflower seeds, and was sent for histopathological study, where perforation was found. The patient was discharged five days after surgery with satisfactory evolution.

Conclusion: Phytobezoars represent a very rare cause of intestinal obstruction, even more so in the large intestine. Bezoars should always be taken into account as a possible cause of intestinal obstruction.

Keywords: Bezoar, Intestinal obstruction, Phytobezoar, Sunflower seeds

How to cite this article

Jaime CAL, Aviléz CTP, Cereceres SJR, Carreón DH. Induced sepsis secondary to colonic phytobezoar: A rare case report. *Edorium J Surg* 2024;10(2):5–9.

Article ID: 100060S05CJ2024

doi: 10.5348/100060S05CJ2024CR

INTRODUCTION

The word bezoar derives from the Persian term “padzahr” or from the Arabic term “badzehr,” both terms meaning antidote or antivenom. The first case of a bezoar was described in 1779 by Baudamant in Paris. Bezoars are masses formed of poorly or completely indigestible materials in the gastrointestinal tract, mainly in the stomach or small intestine. Bezoars are classified in four groups depending on their content: trichobezoars are composed of ingested hair, pharmacobezoars of medication, lactobezoars of milk residues, and phytobezoars of undigested fibers of fruits, vegetables, or seeds, constituting the most common type of bezoar.

Bezoars are responsible for 0.4–4% of all cases of mechanical intestinal obstructions and phytobezoars account for only 2% of intestinal obstructions, which

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Received: 22 October 2024

Accepted: 28 November 2024

Published: 24 December 2024

occur mainly in the small intestine. Bezoars as a cause of large bowel obstruction is a rare finding and can be confused with neoplasia or fecal impaction [1–4].

CASE REPORT

A 55-year-old female patient with no significant medical history. The patient arrived at the emergency department presenting with intestinal obstruction characterized by the absence of evacuations and being unable to channel gasses with diffuse abdominal pain, as well as nausea and vomiting of five days of evolution. Only important antecedent was days prior to the interrogation of profuse intake of sunflower seeds.

Physical examination with evidence of abdominal distension and generalized tympany to percussion, painful abdomen in superficial and deep palpation, with no evidence of peritoneal irritation. A rectal examination was performed with an empty rectal ampulla at the time of the examination. Diagnostic protocol was initiated based on erect and supine abdominal X-ray with distension of colonic loops, air-fluid levels, and with an image compatible with coprostasis at the level of sigmoid colon without evidence of gas in the rectal ampulla (Figures 1 and 2). Her preoperative tests with neutrophilic leukocytosis with a white blood count of 27,000, hemoglobin of 8.9 g/dL, hematocrit of 33.4%, and platelets of 364,000. Subsequently, it was decided to complement diagnostic protocol with an abdominal tomography showing the large bowel with abundant fecal material causing dilation of intestinal loops predominantly toward the sigmoid and descending colon and thickening of the walls of up to 11 mm, as well as abundant liquid in the pouch of Douglas (Figures 3 and 4).

Given the marked leukocytosis, the intestinal obstruction and the presence of free fluid in the pouch of Douglas, it was decided to perform diagnostic laparoscopy where great distension of the small intestine loops and colon was identified. Therefore, the surgery was converted to exploratory laparotomy due to the high risk of inadvertent perforation. A hyperemic and slightly phlegmonous sigmoid colon was found in a segment of approximately 30 cm with thick content inside with evidence of purulent material in the pouch of Douglas (Figure 5). The colosigmoid junction was identified to release the mesocolon and distal stapling was performed at the junction of the colon and rectum. Subsequently, cutting and electrofulguration of the sigmoid mesocolon was performed, resecting approximately 30 cm, the left told fascia was released, as well as the splenic angle of the colon with ligasure and the piece was resected. A 31 mm circular stapler anvil is placed to perform colorectal stapling with a transanal circular stapler and surgical cleansing is performed due to the presence of purulent-citrine material. Finally, the extracted piece was opened with evidence of a large amount of sunflower seeds, consistent with phyto bezoar, and was sent for

histopathological study, where perforation secondary to ischemic change with transmural necrosis was found (Figure 6).

The patient presented satisfactory progress and was discharged 10 days after surgery with satisfactory evolution, channeling gasses, evacuating and tolerating oral administration.



Figure 1: Supine simple abdominal X-ray with distension of colonic loops and coprostasis at the level of sigmoid colon without evidence of gas in the rectal ampulla.



Figure 2: Erect simple abdominal X-ray with distension of colonic loops, air-fluid levels, and coprostasis at the level of sigmoid colon without evidence of gas in the rectal ampulla.

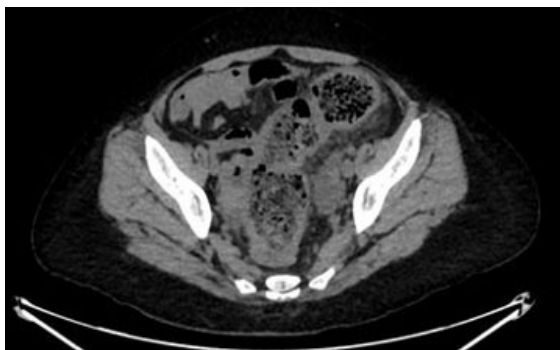


Figure 3: Transverse cut of simple abdominal tomography showing the large bowel with abundant fecal material causing dilation of intestinal loops predominantly toward the sigmoid and descending colon and abundant liquid in the pouch of Douglas.



Figure 4: Coronal cut of simple abdominal tomography showing the large bowel with abundant fecal material causing dilation of intestinal loops predominantly toward the sigmoid and descending colon and abundant liquid in the pouch of Douglas.



Figure 5: Hyperemic and slightly phlegmonous sigmoid colon.



Figure 6: Sigmoid colon excision with a large amount of sunflower seeds consistent with phytobezoar.

DISCUSSION

Multiple factors may contribute to the formation of bezoars. Gastric surgery appears to be the most common risk factor (vagotomy, partial gastrectomy, antrectomy, and pyloroplasty), all of which facilitate the passage of poorly undigested material into the small intestine. Other risk factors include rapid swallowing, poor mastication, medications that delay gastrointestinal motility, hypothyroidism, and neuropathy. The material composing the bezoar may be ingested unintentionally by people with psychological disorders or by healthy people without thinking of the side effects. Among all types of bezoars, phytobezoars are the most common formed by excessive intake of high-fiber food, which contains large amounts of cellulose, hemicellulose, lignin, and tannins [1, 5, 6].

Bezoars may be asymptomatic or may present with multiple gastrointestinal signs and symptoms depending on their anatomical location. Patients with colonic bezoars present with abdominal pain, abdominal distension, nausea, vomiting, constipation, diarrhea, and anorexia. Some cases can become complicated and present as intestinal obstruction, intestinal perforation, and subsequent peritonitis [7, 8].

Bezoars causing mechanical obstruction can be detected radiologically. Plain abdominal X-ray can show air–fluid levels, as well as shape and size of the bezoar; however, it may be difficult to differentiate from feces or abscess within the colon. Computed tomography (CT) scans will provide appreciation of a mass within the intestinal lumen with a mottled gas appearance and with proximal intestine loops dilation [6, 9].

There are several treatment options for colonic bezoars. Conservative treatment may be considered in uncomplicated cases and involves digital evacuation and enemas. If conservative treatment fails, small bezoars

can be removed with endoscopy by fragmentation and extraction, while surgery is necessary for larger bezoars. Surgical indications depend on the characteristics of the bezoar such as the size, consistency, anatomical location, and complications. Surgical treatment involves colotomy and colorrhaphy in cases of intestinal obstructions, while in the presence of necrosis or intestinal perforation, sigmoidectomy is indicated [2, 10].

CONCLUSION

Intestinal obstructions are frequently found in the emergency service. Although phytobezoars are the most common type of bezoars among all, they represent a very rare cause of intestinal obstruction, even more so in the large intestine. Despite bezoars' low incidence, they should always be taken into account as a possible cause of mechanical intestinal obstruction.

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Acknowledgments

We thank the staff of Centro Medico de Especialidades for their support and constant drive to learn.

Author Contributions

Cesar Alberto López Jaime – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Carlos Tadeo Perzabal Aviléz – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Danai Hernández Carreón – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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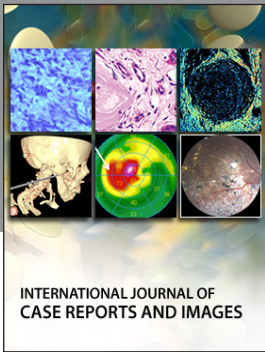
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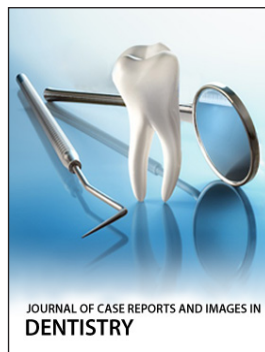
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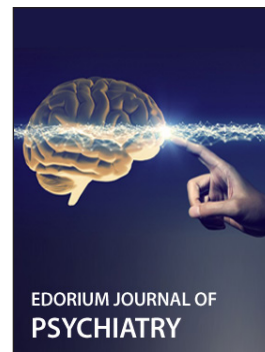
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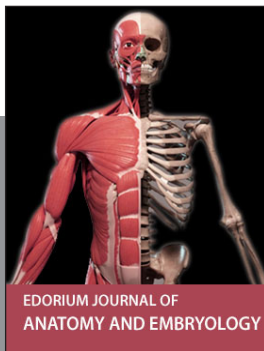
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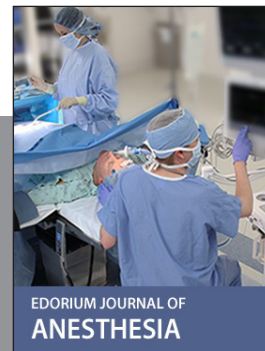
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