Case Report

Infrequent cause of small bowel obstruction in a child: A lemon

Abdullahi Yusuf Ali \( ^{a,\ast} \), Ahmet Biyikli \( ^{a} \), Abdishakur Abdi Mohamed \( ^{a} \), Abdullahi Dhaley \( ^{b} \), Ismail Gedi Ibrahim \( ^{c} \)

\( ^{a} \) Department of Pediatric Surgery, Mogadishu Somalia Turkish Training and Research Hospital, Somalia
\( ^{b} \) Department of Pediatric, Mogadishu Somalia Turkish Training and Research Hospital, Somalia
\( ^{c} \) Department of Radiology, Mogadishu Somalia Turkish Training and Research Hospital, Somalia

A R T I C L E    I N F O

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A B S T R A C T

Introduction: Small bowel obstruction in children induced by phytobezoar impaction is reported here. Bezoars are classified into four types: phytobezoars, trichobezoars, pharmacobezoars, and lactobezoars. We present here the first case of lemon shelves induced by small intestinal obstruction without previous gastrointestinal surgery and diagnosis was made erect abdominal x-ray.

Case presentation: We present a case of a three-year-old boy who presented with a history of abdominal pain, distension, and bilious vomiting, for the preceding one week. The child had no previous history of gastric or intra-abdominal surgery. The definitive diagnosis was not known before the operation. The case was diagnosed at laparotomy and removed through a distal enterotomy.

Clinical discussion: In surgical practice, small bowel obstruction is a prevalent problem. Phytobezoar is a rarely mentioned cause of mechanical small intestine obstruction, accounting for only 0.4–4% of all cases. The lemon shelves measuring 35 cm and 75 cm had impacted the terminal ileum of our patient, causing an obstruction that could only be discovered after an enterotomy as it was not feasible to be fragmented and milked into the cecum and an open appendectomy was performed because of the socio-economic reason.

Conclusion: The total bowel obstruction is treated with both laparotomies and milking through the ileocecal junction or enterotomy and direct extraction.

1. Introduction

Phytobezoars are gastrointestinal concretions that are made up of plants, plant products that are undigested or partially digested, such as seeds, Fibers from fruits and vegetables [1]. Bezoars are classified into four types: phytobezoars, trichobezoars, pharmacobezoars, and lactobezoars [2]. Although the exact incidence of phytobezoars is uncertain, they may account for 0.4–4% of cases of acute mechanical bowel obstructions [3]. They are a well-known etiology of intraluminal bowel obstruction in humans, despite their rarity. Swain was the first to report a postmortem human bezoar in 1854 [4]. We present here the first case of lemon shelves induced by small intestinal obstruction without previous gastrointestinal surgery and diagnosis was made erect abdominal x-ray.

2. Case report

A three-year-old boy presented to our emergency department with a history of abdominal pain, distension, and bilious vomiting, for the preceding one week. He weighed 13 kg and his temperature was normal with a pulse rate of 132/min. He had no history of prior abdominal surgery, melena, change in bowel habits or drug history. His abdomen was distended and diffusely tender. There was no palpable mass. On digital rectal examination, there was a small amount of stool in it. Physical examination was otherwise unremarkable and complete blood count showed leucocytosis. Upright plain film of the abdomen revealed multiple air-fluid levels consistent with Small Bowel Obstruction (SBO) and there was no free air in the abdomen or air in the bowel wall (Fig. 1). An ultrasound exam was performed that showed moderately distended bowel loops with no evidence of intussusception. Exploration laparotomy was performed under general anesthesia, distal small bowel...
obstruction was confirmed with complete obstruction of the terminal ileum, by phytobezoars of lemon shelves (Fig. 2). There were two lemon shelves at about 35 cm and 75 cm from the ileocecal valve proximally but the first one (35 cm) caused complete bowel obstruction (Fig. 3). The mass was removed through a distal enterotomy as it was not feasible to be fragmented and milked into the cecum and an appendectomy was performed (Fig. 4). Enterotomy was closed by continuous wedge anastomosis. A thorough exploration of the small bowel and the stomach for a concomitant phytobezoar was unremarkable. The post-operative period was uneventful recovery, where he was started on nourishing fluid and a soft diet on day two. He was discharged eight days later with amoxiclav 400 mg, 70 ml suspension BD, Flagyl 500 mg suspension TDs, and ibuprofen 100 mg/5 ml 100 ml suspension BD. He was found to be well during follow-up in the pediatric surgical clinic one week later.

This work has been reported in line with the scare 2020 criteria [5].

3. Discussion

In surgical practice, small bowel obstruction is a prevalent problem. The literature reveals a huge spectrum of aetiologies for intestinal obstruction. On the other hand, Phytobezoar is a rarely mentioned cause of mechanical small intestine obstruction, accounting for only 0.4–4% of all cases [6]. There are generally four types of bezoars. The most prominent are phytobezoars, which are made up of non-digestible fibers including cellulose, hemicellulose, lignin, and fruit tannins and are made up of plant matter including celery, grape skin, prunes, and persimmons. Trichobezoars are gastrointestinal concretions of hair fibers that are most frequently found in the people with a history of psychiatric susceptibility and children with mental disorders [7]. Medication bezoars that bind in bulk, such as cholestyramine, kayexalate resin, carafate, and antacid are made up of pharmaco-bezoars. Lactobezoars are milk curds that appear in low birth weight neonates who are fed a highly concentrated formula within the first week of life [7]. Soluble and undigested fibers are far more common in adults and are rarely reported in childrens [8]. The most common clinical symptoms are abdominal pain

Fig. 1. An erect X-ray shows dilatation of the small bowel.

Fig. 2. Phytobezoars of lemon shelves.

Fig. 3. Intraoperative removal of lemon shelves.

Fig. 4. Lemon shelves.
phytobezoars are diagnosed by radiological imaging approaches such as routine abdomen radiography in an upright posture, abdominal ultrasound, and abdominal computed tomography [9]. Distended intestinal loops, air-fluid levels, and thickening intestinal walls may be seen on plain abdomen radiographs. A confirmed diagnosis is often made during a laparotomy [10]. Both CT scans and ultrasound have been demonstrated to be useful in diagnosing phytobezoars caused by small intestinal obstruction [11]. Our patients did not get a CT scan because the plain erect abdominal film showed air-fluid level which was diagnosed for intestinal obstruction and ultrasonography was not informative. The lemon shelves measuring 35 cm and 75 cm had impacted the terminal ileum of our patient, causing an obstruction that could only be discovered after an enterotomy. We performed an open appendectomy because of the socio-economic status of the patient and the late presentation of appendicitis in our country, which can lead to perforation.

4. Conclusion

The phytobezoar of shelves of lemon caused small bowel obstruction without previous gastrointestinal surgery is very rare and difficult to make a definitive diagnosis before operation. The definitive management in total bowel obstruction is laparotomy, “milking” through the ileocaecal junction, or enterotomy and direct extraction Intraoperative all gastrointestinal should be examined.

Ethical approval

There is no need for ethical approval in the case reports in our hospital.

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Author contribution

Abdullahi Yusuf Ali wrote the manuscript and corrected the manuscript for its scientific basis. Abdishakur Abdi Mohamed and Abdullahi Ali Dhaley collected the data for the study. Ahmet Biyikli director of the Department of Surgery and the consultant surgeon who provided the case. Ismacil Gedi Ibrahim revised the manuscript for grammar and syntax mistakes. All authors have read and approved the final manuscript.

Registration of research studies

1. Name of the registry: Not applicable
2. Unique Identifying number or registration ID: Not applicable
3. Hyperlink to your specific registration (must be publicly accessible and will be checked): Not applicable

Guarantor

Dr. Abdullahi Yusuf Ali corrected the manuscript for its scientific basis.

Consent

Written informed consent was obtained from the patient’s father 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.

Provenance and peer review

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Declaration of competing interest

The authors have no conflicts of interest.

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