CASE REPORT

Giant granadilla's seeds phytobezoar rectal impactation: a very unusual case of intestinal obstruction

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SUMMARY

A 78-year-old Caucasian man presented to the emergency department with bloody diarrhoea, diffuse abdominal pain and fever with 1-week duration. He had just returned from Angola where he had been treated for a presumed *Clostridium difficile* infection without improvement. He had no relevant medical or familiar history except for hypertension and prostate benign hyperplasia. He was drowsy, feverish and eupnoeic. His oxygen saturation on pulse oximetry was 92%, blood pressure was 173/99 mm Hg and pulse rate 100 beats per minute. Except for a distended, silent and painful abdomen, particularly on lower quadrants, the rest of the examination was unremarkable. A CT showed a mesh-like mass inside the rectum conditioning colonic obstruction and distention. This turned to be a giant granadilla's seeds phytobezoar and was removed endoscopically. Five days later, the patient had a colonic perforation requiring total colectomy. He made a full recovery after rehabilitation for 3 months.

BACKGROUND

In the Middle East, probably because of dietary habits with frequent seeds consumption, rectal seeds bezoars are the most common cause of faecal impactation leading to hospitalisation. On the contrary, they are rare in the Western World.¹

Various types of seeds have been implicated in the formations of rectal phytobezoars like the ones from sunflower or the prickly pear.²

We would like to draw attention of the reader to the first reported case of faecal impactation due to giant granadilla's seeds (*Passiflora quadrangularis*).

CASE PRESENTATION

A 78-year-old Caucasian man presented to the emergency department (ED) with bloody diarrhoea, diffuse abdominal pain and fever. His complaints had been present for 1 week with the diarrhoea diminishing in frequency and quantity over time. He had just returned from Angola where he was treated with ciprofloxacin and metronidazole for a presumed *Clostridium difficile* infection.

The patient had a history of essential hypertension and prostate benign hyperplasia medicated with perindopril and tamsulosin. He used to travel frequently between Portugal and Angola and his

vaccination was up to date, including immunisation against hepatitis A, yellow fever and typhoid fever. He denied taking malaria prophylaxis recently. He had no relevant family history.

On clinical examination, he was drowsy but conscious and reactive with a tympanic temperature of 38°C. He was eupnoeic, with normal breath sounds, and his oxygen saturation on pulse oximetry was 92%. His blood pressure was 173/99 mm Hg and pulse rate 100 beats per minute. Apart from a distended, silent and painful abdomen, especially on palpation of the lower quadrants, the rest of the examination was unremarkable. A digital rectal examination reported as normal was performed in Angola just before patient transfer. We repeated it on patient's arrival to Portugal, but the amount of watery diarrhoea undermined an accurate examination.

INVESTIGATIONS

A discrete leucocytosis ($12.4 \times 10^9/L$) with neutrophilia (86.3%) was found along with elevated C-reactive protein (9.35 mg/dL). The remaining total blood count, renal and liver functions were normal.

The patient's abdominal radiograph was reported as normal before transfer to Portugal. Having that in consideration, we proceeded to an abdominal and pelvic CT which revealed marked distention of the colon with hydroaeric phenomenon and the presence of a mesh-like mass in the rectum (figure 1).

Previous blood, urine and stool cultures, typhoid fever and malaria screens performed in Angola were negative.

DIFFERENTIAL DIAGNOSIS

The symptomatic triad of abdominal pain, bloody diarrhoea and fever could indicate a *C. difficile* colitis or other serious intestinal infections. However, this seemed unlikely considering the previous negative investigations and antibiotic treatment held in Angola.

The elevation of the inflammatory markers and the septic appearance of the patient raised the suspicion to other causes of acute abdomen such as complicated inflammatory bowel disease, diverticular disease, appendicitis or neoplasms.

The CT scan, done to clarify the diagnosis, identified a mass appearing to be a faecaloma. However,

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Figure 1 Abdominal and pelvic CT showing marked distention of the colon and a mesh-like mass inside the rectum (arrows).

during the digital rectal examination, we found a large phytobezoar made of small seeds instead (figure 2).

The patient recognised the extracted seeds as being from the giant granadilla's fruit (*P. quadrangularis*). He told us that he had recently planted this tropical plant in his garden in Angola and ingested large amounts of its seeds over the past month.

TREATMENT

The digital rectal extraction of the phytobezoar was too painful to be carried on, so we submitted the patient to a rectumsigmoidoscopy under sedation (figure 3); countless seeds were removed.

Over the first 48 hours in the ward, the patient started to feel better, bowel sounds improved and he could tolerate oral liquid diet. However, on day 3, the abdominal pain went back and there were no bowel sounds or passage of gases or stools. An abdominal plain radiography at this stage showed the persistence of colonic distention. A rectal enema led to the expulsion of faeces, gas and more seeds with some relief.

On day 5, he got drowsier, abdominal pain and distention got worse and inflammatory marked started to rise again. An abdominal plain radiography taken with the patient sitting revealed a large pneumoperitoneum (figure 4). He was immediately started

on meropenem and rushed to the operating theatre. Parietal necrosis was found along the entire colon with hundreds of seeds inside it. A total colectomy with rectum preservation and protective ileostomy was performed. No malignancy was found on postoperative pathology examination.

After surgery, we started the patient on generous oral hydration, domperidone and lactulose to improve intestinal transit and prevent constipation. These measures have been maintained during follow-up.

OUTCOME AND FOLLOW-UP

The first 24 hours of postoperative recovery were held in the intensive care unit. The patient was next transferred back to the ward and improved slowly during the following 2 weeks until being discharge to a rehabilitation centre. He finally recovered complete autonomy after 3 months of rehabilitation and was discharged home. He was advised to avoid seeds consumption. We have been following him up in our outpatient clinic for 2 years without further complications.

DISCUSSION

A bezoar is an intraluminal mass of indigestible material found inside the gastrointestinal tract.^{3 4} Bezoars can be classified by

Figure 2 Giant granadilla's seeds (*Passiflora quadrangularis*) after removal by digital rectal examination.

Figure 3 Rectumsigmoidoscopy showing the phytobezoar composed of giant granadilla's seeds causing rectal impaction.

Figure 4 Large pneumoperitoneum showed on abdominal plain radiography.

their composition. Vegetable fibres, skins and seeds are responsible for the most common form—the phytobezoars.³ Recently, a mushroom phytobezoar causing small bowel obstruction has also been described.⁵ The other types of bezoars are the trichobezoar (composed of human hair), the lactobezoar (composed of lactose) and the pharmacobezoar (composed of medications).⁶

The main risk factor for the formation of bezoars is reduced intestinal motility resulting in slow intestinal transit. This can be caused by old age, dehydration, diabetes mellitus, hypothyroidism, previous abdominal surgery or inflammatory bowel disease among others entities.³ The stomach is the most frequent location of a bezoar, followed by the small intestine. Very rarely are bezoars found in the colon and rectum.⁷

Rectal impaction due to phytobezoars is a rare entity in the Western World. However, multiple types of seeds have been implicated in the reported cases such as sunflower, prickly pear, watermelon, popcorn kernels, pomegranate, wild banana or pumpkin seeds.^{1 2 8} As far as we know, this is the first reported case of a rectal impaction caused by a phytobezoar composed of giant granadilla's seeds.

Clinical manifestations of a bezoar typically result from its mechanical effects and include nausea, vomiting, abdominal pain and obstipation. They can ultimately lead to complications such as intestinal obstruction, ulceration, haemorrhage and perforation.¹ The digital rectal examination is of great value in the context of bowel obstruction investigation. If we had insisted on repeating it until a good examination was possible, we would probably have diagnosed and treated the patient earlier.

This patient presentation was similar to an infectious diarrhoea, and the intestinal obstruction was not suspected until he had a CT scan a week later. It is worth to remember that on early stages bowel obstruction can present as diarrhoea.⁹ This results from the increased intestinal motility trying to surpass the blockage what can only be done by loose stools while the stenosis is not complete.

Colonic obstruction is a frequent problem in ED with mortality rates as high as 20%. Most of these situations (90%) is caused by colonic or rectal carcinomas, volvulus or complicated diverticular disease. Rectal impaction more often affects ageing patients. Faecalomas are usually the culprit in this cases, with phytobezoars being a rarity.¹⁰ It was only after direct visualisation of the seeds by digital rectal extraction and endoscopy that the diagnosis of a rectal phytobezoar was possible in our patient. This is often the case due to CT scan similarities between the two entities. The phytobezoar appears on CT scans as a round or ovoid mass inside the gastrointestinal tract lumen, often with air bubbles inside it and a mesh-like appearance.³ A faecaloma usually looks very similar except for a less well-defined edge and a longer dimension.¹¹ This should prompt the question of recent seeds consumption during patient's history taking.

Phytobezoars causing rectal impaction often require endoscopic or surgical treatment. Contrary to disimpaction of faecalomas, the digital rectal disimpaction of phytobezoars is often so painful that it is virtually impossible to do it without sedation as we report.² After treatment, preventive approaches should be implemented to avoid recurrence. These include avoidance of seed consumption and approach to risk factors.

Although phytobezoars usually carry a very good prognosis, our case highlights their possible dangerous complications making it particularly remarkable. This should raise the awareness to closely monitor patients like ours after digital rectal disimpaction or endoscopic treatment. It could be of paramount importance especially if they had a prolonged course of disease since presentation and marked colonic distention with competent ileocecal valve increasing the risk of colonic perforation.

Learning points

- Phytobezoars are rare in the Western World but should be considered in travellers.
- A detailed clinical history and thorough physical examination, including digital rectal examination, may be the key to diagnosing rectal phytobezoar impaction.
- CT scan/endoscopy can be of paramount importance to clarify the diagnosis.
- Rectal phytobezoar impaction often requires endoscopic or surgical treatment.
- Rectal phytobezoar impaction usually has good prognosis if prompt and adequately treated but can evolve to ominous complications.

Contributors ARA wrote the summary, background, case presentation, investigations, differential diagnosis, treatment, outcome and follow-up, discussion and learning points. LDC and PR reviewed the whole article.

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