

## CASE REPORT

# RARE SMALL BOWEL OBSTRUCTION DUE TO PHYTOBEZOAR – CASE PRESENTATION

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### ABSTRACT

Phytobezoar is a rare cause of small bowel obstruction. This pathology represents 0.4%-4% of all mechanical bowel obstructions. Symptoms are similar to other small bowel obstructions. The most common localisation of the obstruction is represented by the terminal ileum. Phytobezoars are to be considered in patients who have had gastric surgery, a high fiber intake or psychiatric disorders. Also multiple sclerosis has shown to affect bowel motility, which is important to our case. Surgery is always indicated. A low fiber diet and prokinetics are indicated for the prevention of this pathology. We present the case of a 43-year-old female who was admitted to the ICU following a car accident. The patient presented bowel obstruction symptoms (nausea and vomiting, bloating, not passing gas and severe abdominal pain) the 5<sup>th</sup> day after admission and was transferred to the operating room for exploratory laparotomy. Intraoperatively, we discovered a phytobezoar which was confirmed by the histopathological exam.

### RÉSUMÉ

**Le phytobézard, une cause rare d'occlusion de l'intestin grêle – présentation de cas**

Le phytobézard est une cause rare de l'occlusion intestinale. Cette pathologie représente 0,4% – 4% de la totalité des obstructions mécaniques intestinales. Ses symptômes sont similaires aux autres occlusions intestinales. La plus commune localisation de l'obstruction est représentée par l'iléon terminal. Il faut prendre en considération les phytobézards chez les patients qui ont subi une opération gastrique, qui ont mangé beaucoup de fibres, ou qui souffrent de désordres psychiatriques. Une cause importante est constituée par la sclérose en plaques qui affecte la mobilité de l'intestin, importante dans notre cas. L'opération est toujours indiquée. En vue de la prévention de la pathologie il est indiqué un régime à bas contenu de fibres alimentaires et des prokinétiques. Nous présentons le cas d'une femme de 43 ans qui a été internée à la thérapie intensive par suite d'un accident de voiture. La patiente présentait

**Key words:** phytobezoar, rare small bowel obstruction, trauma patient, multiple sclerosis.

des symptômes d'occlusion intestinale (de la nausée, des vomissements, pas d'élimination de gaz, des douleurs abdominales sévères) et elle a été transférée dans la salle d'opération, pour laparotomie exploratoire d'urgence. En intra-opératoire, nous avons découvert un phytobézard qui a été confirmé par l'examen histopathologique.

**Mots clés:** phytobézard, occlusion de l'intestin grêle, patient traumatisé, sclérose en plaques.

## INTRODUCTION

Phytobezoar is a rare cause of small bowel obstruction. This pathology represents 0.4%-4% of all mechanical bowel obstructions<sup>1</sup>. Symptoms are similar to other small bowel obstructions. The most common localisation of the obstruction is represented by the terminal ileum<sup>1</sup>. Phytobezoars are to be considered in patients who have had gastric surgery, a high fiber intake or psychiatric disorders. Also multiple sclerosis has shown to affect bowel motility, which is important to our case. Surgery is always indicated. A low fiber diet and prokinetics are indicated for the prevention of this pathology.

## CASE PRESENTATION

A 43-year-old female was admitted to the ICU following a car accident. She presented occipital median and paramedian fracture, posterolateral left sinus fracture, ischiopubic fracture, left tibial and fibular fracture. The patient was hemodynamically stable, with no traumatic lesions visible to the abdomen or thorax.

The patient related that she had a history of multiple sclerosis and had had surgery for osteosynthesis and immobilisation of the lower left limb.

After 5 days of ICU care, the patient presented intense pain in the lower abdomen, lack of gas passing, nausea and vomiting. A simple abdominal X-ray was done showing one hydroaeric level in the right abdomen and diffuse aerocolia of the colon (Fig. 1). The chest X-ray was normal. Ryles aspiration tube showed gastric stasis.

After these examinations, the patient was transferred to the surgical theatre for exploratory laparotomy with suspicion of acute bowel obstruction. Intraoperatively, we found distended small bowel, with a palpable mass intraluminally, in the last 40 cm. We performed an enterectomy (Fig. 2) and disimpacted a large tumoral mass (Fig. 3), with biliary coloration, and cellulose-like texture to the feel. Enteroplasty in two layers was performed, due to a

circular stenosis of the mucosa at the site of the impacted phytobezoar. The patient returned to the ICU for close monitoring postoperatively.

On the 11<sup>th</sup> day postoperatively, the patient presented a small enterocutaneous fistula and we reoperated and performed a diverted ileostomy. The creation of the fistula was accounted for by hypoalbuminemia, denutrition, history of multiple sclerosis and the long term immobilisation of the patient. After the second intervention, the patient had an uneventful recovery and returned to the clinic for a follow-up and we decided and performed the 3<sup>rd</sup> intervention, which consisted of the reinstatement of the bowel continuity through segmental enterectomy with an entero-enteral, termino-terminal



**Figure 1.** Simple abdomen X-Ray showing a hydroaeric level in the right flank and diffuse aerocolia of the colon



**Figure 2.** Enterectomy performed to extract the phytobezoar



**Figure 3.** The extracted phytobezoar

anastomosis. Again, the patient had an uneventful recovery and was discharged from our clinic the 9<sup>th</sup> day postoperatively. The patient was discharged with a diet form, oleum parafini intake recommendation and prokinetic drugs.

## DISCUSSION

Small bowel obstruction is a common pathology encountered in surgical practice. Literature shows varied aetiologies for intestinal obstruction. However, phytobezoar is rarely reported as an etiological factor, accounting for a rare 0.4%-4% of all mechanical small bowel obstructions<sup>1</sup>. Phytobezoars are masses of poorly digested fruit and vegetable fibers that are found in the bowel and are mostly constituted from non-digestible cellulose, tannin and lignin from ingested foods<sup>2</sup>. The most common phytobezoar encountered is related to the ingestion of persimmon fruit<sup>2</sup>. Normally, the phytobezoar is found in the stomach and may reach the small bowel. The primary small bowel bezoars are very rare, and they are usually seen in patients with underlying small bowel diseases such as strictures, diverticula or tumors<sup>1</sup>. There are several predisposing factors that influence

phytobezoar formation. Some of the common factors are previous gastric surgery, excessive consumption of fruits rich in fibers, poor dental health, insufficient mastication, diabetic gastro paresis, kidney failure, hypothyroidism and the use of gastric motility affecting drugs<sup>3</sup>. There is a slight male preponderance reported<sup>3</sup>.

The treatment of choice for small bowel obstruction due to phytobezoar is surgery. Most bezoars in the small bowel are found 50 - 70 cm proximately from ileocaecal valve<sup>3</sup>. Slow intestinal motility and large amount of water absorption harden the bezoar, resulting in the lack of ability of the bowel to push it through its motility<sup>4</sup>. Surgical options reported are manual fragmentation of the phytobezoar and pushing it towards caecum. If this is not possible, enterotomy should be performed to remove the bezoar. Segmental bowel resection and anastomosis may be required in the presence of complications, such as necrosis of the bowel<sup>5</sup>. At the time of the laparotomy, the exploration of the abdominal cavity should be done, to exclude the presence of concomitant gastric bezoar or intestinal bezoars<sup>3</sup>. About one third of patients have multiple intestinal bezoars<sup>3</sup>.

The best way to manage this pathology is prevention, such as: good eating habits, avoiding high fiber diet, particularly in patients with gastric surgery, introduction of prophylactic medications to improve gastric motility and psychiatric follow-up in patients with psychiatric diseases<sup>1</sup>. Our patient was given prokinetics and oleum parafini intake recommendation at the time of discharge.

## CONCLUSIONS

Phytobezoar represents a rare part of small bowel obstructions, thus it is rarely incriminated. There

should be high suspicion in patients with small bowel obstruction who have previous history of gastric surgery, with excessive consumption of fruits rich in fibers, with poor dental health, with insufficient mastication, diabetic gastroparesis, kidney failure, hypothyroidism and the use of drugs which affect gastric motility. A CT scan should show the presence of intraluminal mass with a mottled gas pattern at the site of the obstruction<sup>4</sup>. Surgery is the treatment of choice in phytobezoar-induced small bowel obstruction. Diet modification is the best way of prevention.

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