

on X-rays, as well as negativity for hereditary, metabolic, neoplastic, immunologic and infectious etiologies.

In summary, although rare, the diagnosis of Gorham-Stout syndrome should be considered in cases of focal or multifocal osteolysis in previously healthy young individuals who test negative for inflammatory, infectious, metabolic, and neoplastic conditions.

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**Intestinal obstruction by a phytobezoar in a patient with a history of gastroplasty**

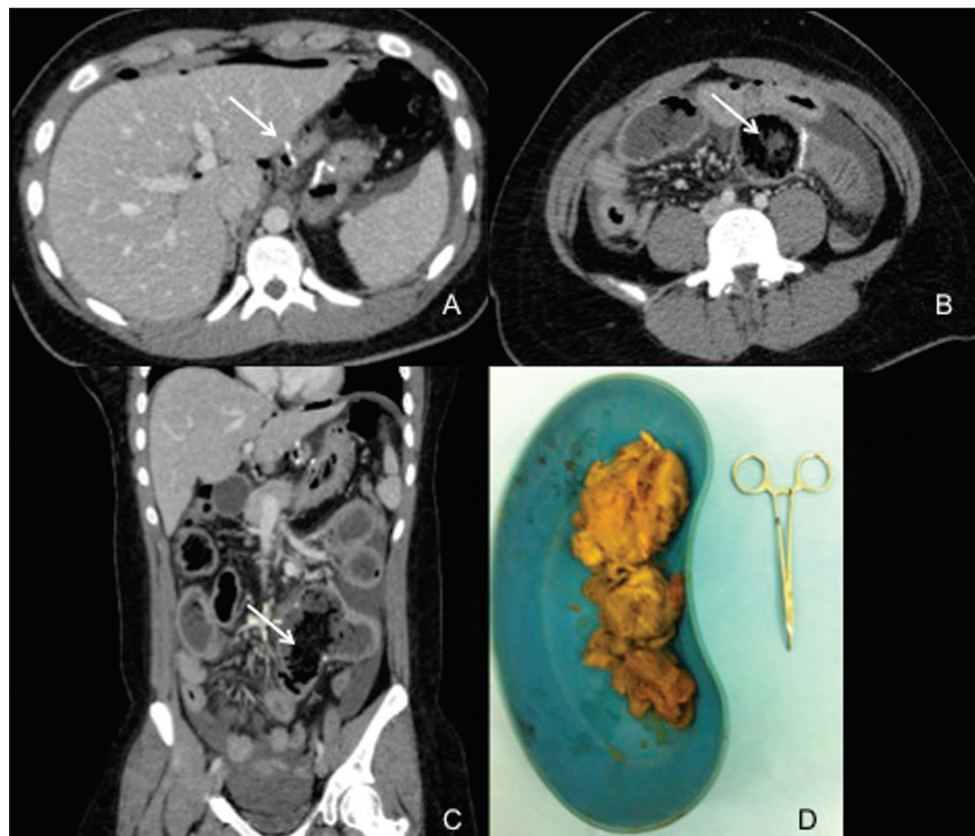
Dear Editor,

We report the case of a 28-year-old female patient with a one-year history of gastroplasty who was suffering from abdominal pain one day after eating a large amount of jackfruit. The physical exam revealed diffuse pain on palpation, positive abrupt decompression and absence of bowel sounds. Computed tomography (CT) of the abdomen and pelvis showed signs of intestinal

obstruction. Intraoperatively, intraluminal content, consistent with a phytobezoar (a jackfruit "bolus"), was observed impacting the distal anastomosis of the gastric bypass (Figure 1).

A bezoar is a mass of exogenous undigested material that accumulates in the gastrointestinal tract, usually in the stomach or ileus, and causes intestinal obstruction<sup>(1)</sup>. Bezoars are associated with predisposing factors such as poor mastication, psychiatric disorders, and impaired gastric motility.

Bezoars are classified, according to their composition, as phytobezoars (composed of vegetable fibers), lactobezoars (com-



**Figure 1.** CT of the abdomen and pelvis, with intravenous contrast. **A:** Axial sequence showing signs of gastroplasty (arrow) and a small amount of perisplenic fluid. **B:** Axial sequence showing distension of the jejunal loop related to enteric anastomosis, highlighting the accumulation of material with low-grade intraluminal attenuation, corresponding to a phytobezoar (arrow). **C:** Coronal reconstruction confirming the signs of intestinal obstruction and again showing significant distention of the small intestine loop that participates in the enteric anastomosis, containing an accumulation of material with low attenuation (phytobezoar, arrow). **D:** Surgical specimen. Material removed from within the jejunal loop related to the surgical anastomosis, characterized by a bolus of undigested agglomerated vegetable fiber (a jackfruit phytobezoar).

posed of milk), or trichobezoars (composed of hair). Phytobezoars account for 40% of all bezoars and are composed of materials of vegetable origin that human beings cannot digest (seeds, peels, roots, etc.); they develop through a multifactorial process. Individuals with a greater propensity to develop phytobezoars include not only vegetarians but also individuals who do not chew their food well, those with impaired gastric motility, and those with hypochlorhydria, as well as those who have undergone gastrectomy. A history of gastric surgery is a risk factor because it reduces the surface area of the stomach and acid secretions, causing inadequate digestion and allowing larger masses of agglomerated material to pass into the small intestine<sup>(1-3)</sup>. Phytobezoars can also occur in patients who have had bariatric surgery. In addition to the aforementioned factors, nonabsorbable sutures can act as vegetable fiber hooks, resulting in a bolus that forms in the anastomosis. Phytobezoar formation evolves to intestinal obstruction in 60% of cases.

CT has become the imaging examination of choice for the diagnosis of acute abdominal obstruction, because it is a rapid method that produces high-resolution images to confirm the obstructive scenario, often making it possible identify the etiological factor. On CT, intestinal obstruction is characterized by dilated proximal intestinal loops (with a caliber > 2.5 cm), distal loops that are collapsed or are proportionally smaller than the proximal loops, and intraluminal air-fluid levels<sup>(2,4)</sup>.

The diagnosis of a phytobezoar should be considered in cases of intestinal obstruction when there is an obstructive intraluminal focal mass that is of low density and contains images suggestive of air bubbles<sup>(2,4)</sup>. Modifying the amplitude and centering of the imaging window can facilitate the identification of aspects characteristic of a bezoar, which has been described as looking like "a lump of bread". The differential diagnoses of a phytobezoar include foreign bodies, abscesses, and a worm

bezoar. When the mass is seen in a colonic loop, a diagnosis of fecaloma should also be considered.

Jackfruit is common in the northern and northeastern regions of Brazil. Its potential to form phytobezoars is due to its large concentration of fibers and other components such as calcium, phosphorous, and iron<sup>(5)</sup>.

When assessing intestinal obstructions in patients who have undergone bariatric surgery, radiologists should be aware of the possibility of a bezoar as the cause. Preoperative clinical suspicion optimizes the surgical results.

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#### Pyogenic liver abscess as a late complication after embolization of a hepatic adenoma

Dear Editor,

A 28-year-old woman who had been taking an oral contraceptive (OC) for 10 years underwent magnetic resonance imaging (MRI), which showed multiple tumors. The tumors were isoattenuating in the pre-contrast phase, showed homogeneous enhancement in the arterial phase, and were isoattenuating again (with enhancement comparable to that of the liver parenchyma) in the subsequent phases (Figure 1A). The pathology study confirmed the diagnosis of adenoma. The largest tumor, measuring approximately 10 cm, was compressing the inferior vena cava, making the surgical approach difficult, and presented a high risk of intraoperative complications. We opted for arterial embolization, which was performed successfully, and no vascularization was observed on a follow-up computed tomography (CT) scan. Seven months later, the patient returned with complaints of abdominal pain, daily fever, and weight loss. At that time, an MRI scan showed a collection, consistent with abscess, near the site of the adenoma (Figure 1B). Ultrasound-guided percutaneous drainage was performed, and 800 mL of purulent secretion were drained (Figure 1C). After a seven-day course of antibiotic therapy with saline lavage of the abscess, the patient progressed to complete resolution of the condition. A follow-up MRI scan, acquired six months after the percutaneous drainage, confirmed that the treatment had been successful (Figure 1D).

Hepatocellular adenoma (HCA) is a rare benign tumor of the liver that is commonly seen in women of reproductive age and is associated with the use of OCs<sup>(1)</sup>. The annual incidence of HCA is 3–4 cases/100,000 women who have used OCs for an extended period of time. Approximately 25% of patients with HCA experience bleeding, the risk of which increases in parallel with an increase in tumor diameter. Malignant transformation occurs in up to 4% of all cases of HCA<sup>(2,3)</sup>. The risk of malignant transformation also increases as tumor diameter increases, and excision is generally recommended for tumors that are still larger than 5 cm in diameter after OC discontinuation<sup>(4)</sup>.

Transarterial embolization (TAE) is widely used for the treatment of bleeding adenomas and can be performed before elective surgery to reduce intraoperative blood loss. In HCA patients, TAE can reduce the size of large adenomas, multiple adenomas, or adenomas that are in a surgically inaccessible location, in order to reduce symptoms and the risk of bleeding<sup>(5-7)</sup>. Given that the risk of malignant transformation is directly proportional to the size of the adenoma<sup>(7)</sup>, TAE can reduce this risk. However, the role of TAE as an elective therapy in HCA is unclear, because it is not known whether it reduces the risk of hemorrhage or malignant transformation of residual HCA, despite reports of a reduction in tumor size<sup>(8)</sup>.

In patients with HCA, the most common complication of TAE is post-embolization syndrome, followed by transient renal insufficiency and cyst formation<sup>(8)</sup>. In the case presented here, the patient evolved to late liver abscess after embolization of