

Unexpected cause of acute abdomen: trichobezoar stuck at sigmoid diverticulitis site

Causa inesperada de abdomen agudo: tricobezoar atascado en sitio de diverticulitis sigmoidea

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Summary

Obstruction in the colon is much less frequent than in the small intestine. Among its various causes, the most common are malignant neoplasms, volvulus, and diverticulitis. In contrast, bezoars are rarely responsible. CT imaging is the reference method for evaluating intestinal obstruction due to its high sensitivity and specificity, allowing for the determination of the location, cause, and presence of complications. We present a unique case not previously reported in the literature of an acute abdomen in a 56-year old man, without psychiatric history, who showed characteristic CT findings of a trichobezoar lodged in an area of acute diverticulitis, leading to intestinal obstruction. This case concluded with the resection of the affected segment and extraction of the intraluminal mass. Subsequently, the findings were confirmed by histopathology.

Resumen

La obstrucción en el colon es mucho menos frecuente que en el intestino delgado. Entre sus diversas causas se destacan por su frecuencia la neoplasia maligna, el vólvulo y la diverticulitis; a diferencia de estas, los bezoares raramente son los responsables. La tomografía axial computarizada (TAC) representa el método de imagen de referencia para la evaluación de la obstrucción intestinal, por su elevada sensibilidad y especificidad, lo que permite definir principalmente ubicación, causa y complicaciones. Se expone un caso particular, no descrito en la literatura, de un abdomen agudo en un hombre de 56 años de edad, sin antecedentes psiquiátricos, con hallazgos radiológicos característicos en TAC de un tricobezoar atascado en un sector de diverticulitis aguda, que desencadenó un cuadro de oclusión intestinal. Este caso concluyó en la resección del segmento afectado y extracción de la masa intraluminal. Los hallazgos fueron confirmados por histopatología.

Introduction

Intestinal obstruction is a frequent cause of acute abdomen. It occurs more frequently in the small intestine (85%) as opposed to the colon (15%) (1). Colonic obstruction has a variety of causes that differ according to age group and geographic location; however, the most frequent in adults are malignant neoplasia, volvulus and diverticulitis (60%, 10%-15% and 10% of cases, respectively) (2). On the other hand, bezoars represent an unusual cause of this entity (0.4 % to 4 %), occurring only if it develops a considerable size (2). The mechanisms by which diverticulitis causes this complication are due to wall edema and peripheral inflammation, abscess formation or intramuscular fibrosis (3).

The purpose of this paper is to document a case of intestinal occlusion due to a trichobezoar stuck in a sector of colonic diverticulitis; in addition, the role of computed axial tomography (CT) in this context is described and, at the same time, the radiological findings suggestive of this presentation and its main differential diagnoses, which are relevant in the approach to this abdominal emergency, will be reviewed.

Clinical case

A 56-year-old man presented to the Emergency Department for diffuse abdominal pain of several months' evolution. The pain intensified progressively in the last two hours, located mainly in the left iliac fossa, accompanied by nausea and vomiting. The patient had no history of surgery or disease. On physical examination he presented abdominal distension and decreased hydroaerial sounds. In the laboratory, the leukocytes were 12,000 mm^3. In the first instance, an abdominal

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X-ray was performed (Figure 1) and after the findings, his evaluation was continued with MDCT (Figures 2 and 3).

The case resulted in resection of the intestinal segment and removal of the endoluminal mass (Figure 4); the diagnosis was confirmed by histopathology.

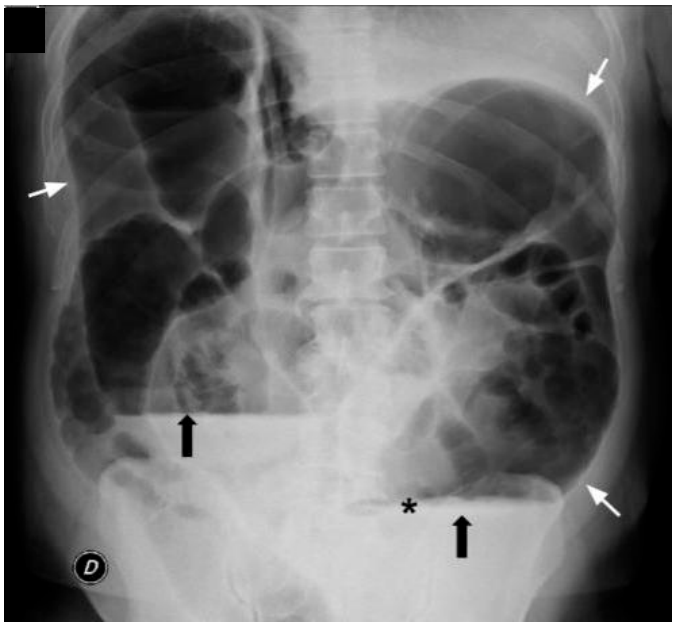


Figure 1. Standing abdominal X-ray (front). Colonic frame distension (white arrows) to the left lower quadrant (asterisk) accompanied by hydro-aerial levels (black arrows).

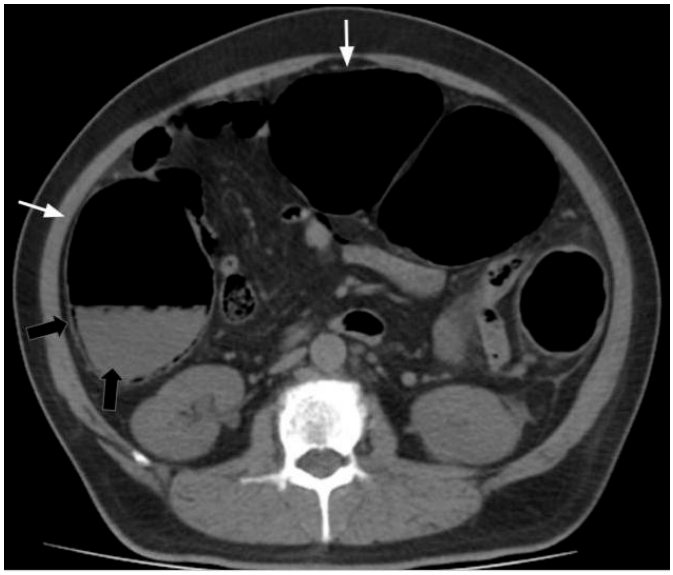


Figure 2. MDCT in axial section of the abdomen, without contrast medium. Colonic distension (white arrow) and intestinal pneumatosis in ascending colon (black arrow).



Figure 3. MDCT in axial section of the abdomen and pelvis without contrast medium. In the endoluminal space of the sigma there is an oval image, with a defined wall and high density, of heterogeneous content with isolated bubbles (white arrows), measuring 36 × 22 × 24 mm. Regular concentric parietal thickening of a short segment (less than 10 cm) of sigmoid colon (black arrows), in whose proximal sector there is, as an incrustation, the image described above (gray arrow), generating ascending intestinal distension. In addition, there is subtle rarefaction of the adjacent fat (white asterisk) and thickening of the homolateral lateroconal fascia (black curved arrow).



Figure 4. Macroscopy of the trichobezoar.

Discussion

A bezoar is a mass formed by the accumulation of undigested material in the gastrointestinal tract. It is classified according to its composition into: phytobezoar, trichobezoar, lithobezoar, pharmacobezoar, lactobezoar and plasticobezoar, the first being the most frequent (4, 5).

The trichobezoar is a mass composed mainly of hair and makes up 6% of all bezoars (5). It occurs most frequently in young women and can be located in any portion of the gastrointestinal tract, often in the stomach; it can even, in unusual circumstances, cross the pylorus into other intestinal segments, giving rise to Rapunzel syndrome. It is rarely found in the large intestine. These cases are usually described as psychiatric and behavioral disorders, mental retardation, separation from parents or abuse in 20%-30% of patients with tricholomania (4).

Colonic diverticulitis occurs due to obstruction of the diverticular ostium by a fragment of stool or food particles. It usually occurs in males over 70 years of age and is located in the sigmoid and descending colon (> 90% of cases). Complications are variable and include perforation, phlegmon, abscess, pylephlebitis, intestinal obstruction, hemorrhage and fistula (3). Intestinal obstruction is rare and two possible mechanisms are described, one of them is due to partial obstruction secondary to wall edema and peripheral inflammation or abscess formation; another possible mechanism occurs in the chronic stage due to multiple episodes of diverticulitis that generate intramuscular fibrosis, causing 10-20% of cases.

The clinical suspicion of intestinal occlusion is supported by imaging methods, placing X-rays and CT in the scenario. The latter takes a leading role due to its high sensitivity and specificity (96% and 94%), with respect to X-rays (84% and 72%) (1). The findings suggestive of colonic occlusion are distension proximal to the affected segment (> 9 cm in the cecum and > 6 cm in the rest of the colon) accompanied by hydro-aerial levels (3). Likewise, CT allows defining the location, distinguishing between high or low grade, functional or mechanical, between intraluminal, mural and extramural causes, and determining complications such as perforation and intestinal ischemia, which, if present, entail a high morbidity and mortality rate (2).

Trichobezoar in CT appears as a heterogeneous endoluminal mass with a speckled gas pattern or compressed concentric rings, whose peripheral region has high density (5, 6). In view of these imaging findings, other endoluminal colonic images such as fecaloma, barium concretions and foreign bodies could be considered as main differential diagnoses (7).

On the other hand, in colonic diverticulitis a segmental and concentric parietal thickening of the colon is identified, generally extending over a segment > 10 cm; although a short segment may be affected, fat rarefaction and vascular ingurgitation, absence of irregular borders or shoulder sign, thickening of the lateroconal fascia, absence of lymphadenopathy and distortion of the mucosal folds. It is important to mention that its main differential diagnosis is the stenosing malignant neoplasm of the colon and that on occasions, as in the case presented, the radiological differentiation between the two is a challenge (8).

Conclusion

Colonic occlusion is one of the most frequent causes of acute abdomen and occurs as a complication of various entities. CT plays a prominent role in this setting, allowing comprehensive assessment by delineating the affected segments, distinguishing the cause and investigating associated complications. Diverticulitis is one of the three most frequent causes as opposed to trichobezoar. Unusually, both etiologies are juxtaposed triggering this abdominal emergency. Both entities present characteristic CT findings; however, it can sometimes be challenging to distinguish between diverticulitis and malignant neoplasia. A case with similar outcome is not found in the literature.

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