

Intestinal obstruction due to gallstone ileus. A case report

Obstrucción intestinal por íleo biliar. Presentación de caso

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Summary

Gallstone ileus is an infrequent cause of mechanical intestinal obstruction that affects older adults, predominantly women. In most cases it is caused by the impaction of a gallstone into the bowel through a bilioenteric fistula and is clinically characterized by abdominal pain and acute or subacute emesis. Evaluation with abdominal imaging is required to confirm the diagnosis, determine the location of the ectopic stone and its size. Among the imaging modalities available, abdominal tomography is the gold standard; however, when it is not available, a simple abdominal radiograph can be used. Management is mainly surgical. This case is of importance given the rarity of its presentation being in a man, with a relatively small calculus; additionally, because of the relevance of abdominal imaging in the diagnosis of this pathology.

Resumen

El íleo biliar es una causa infrecuente de obstrucción intestinal mecánica que afecta a los adultos mayores, predominantemente a las mujeres. En la mayoría de los casos es causada por la impactación de un cálculo biliar en el intestino a través de una fístula bilioentérica y clínicamente se caracteriza por dolor abdominal y emesis aguda o subaguda. Se requiere una evaluación con imágenes abdominales para confirmar el diagnóstico, determinar la ubicación del cálculo ectópico y el tamaño del mismo. Entre las modalidades de imagen disponibles, la tomografía de abdomen es el estándar de oro; sin embargo, cuando no está disponible se puede utilizar una radiografía de abdomen simple. Su manejo es principalmente quirúrgico. Este caso es de importancia por la rareza de su presentación al ser en un hombre, con un cálculo relativamente pequeño; adicionalmente, por la relevancia que tienen las imágenes de abdomen en el diagnóstico de esta patología.

Introduction

Biliary ileus is a rare condition affecting 0.3% to 0.5% of patients with a history of gallstones. It occurs in less than 0.1% of all cases of mechanical obstruction and between 1% and 4% of non-strangulating mechanical small bowel obstructions (1). Obstructing gallstones usually migrate to the intestine through bilioenteric fistulas (2).

Case

An 80-year-old patient, with a history of arterial hypertension, consults for a clinical picture of one week of evolution characterized by abdominal pain and distension, absence of stool and flatus, associated with multiple episodes of biliary emetic count. Paraclinical tests showed hydroelectrolyte alteration such as hyponatremia and hypokalemia and metabolic alkalosis with hyperlactatemia. Abdominal radiography (Figure 1) showed significant distension of the small intestinal loops and the gastric chamber, as well as portal gas and gas in intrahepatic portal branches together with cholelithiasis, so a computed

axial tomography (CAT) scan of the abdomen was performed. The CT scan showed marked dilatation of the small intestinal loops and the stomach, with staggered hydroaerial levels due to an obstructive process (figure 2). A rounded calcific density image of 16 mm in diameter is identified as the cause of the obstruction, located in the terminal ileum towards the ileocecal valve (figure 3). This image of calcific density corresponds to a gall bladder stone, which is perforated, and has drained into the duodenum. There is thickening of the walls of the gallbladder, which is collapsed, with edema of the perivesicular fat due to associated inflammatory changes (figures 4 and 5); there are no cleavage planes between the gallbladder and the second portion of the duodenum due to the perforation; the biliary tract is of normal caliber. With these findings the patient underwent open surgery, where the findings of the CT of the abdomen were corroborated. Cholecystectomy, closure of the biliary fistula with the duodenum and extraction of the calculus from the ileal loops were performed. The patient was discharged without complications.

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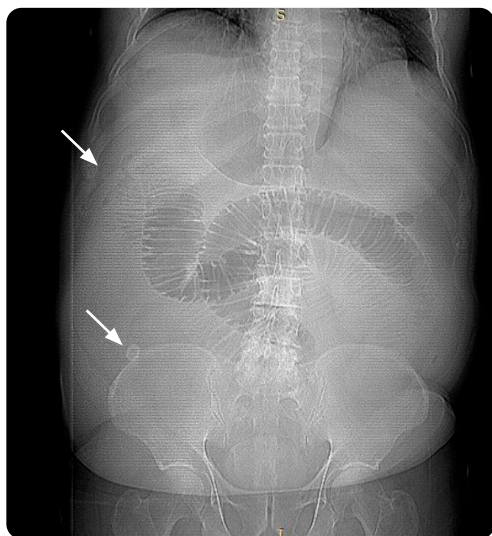


Figure 1. Standing abdominal X-ray: Significant distension of the small intestinal loops, as well as the gastric chamber, portal gas and intrahepatic portal branches (blue arrow). In the lower right quadrant there is rounded calcification corresponding to calculus at the level of the ileocecal valve (arrowhead).

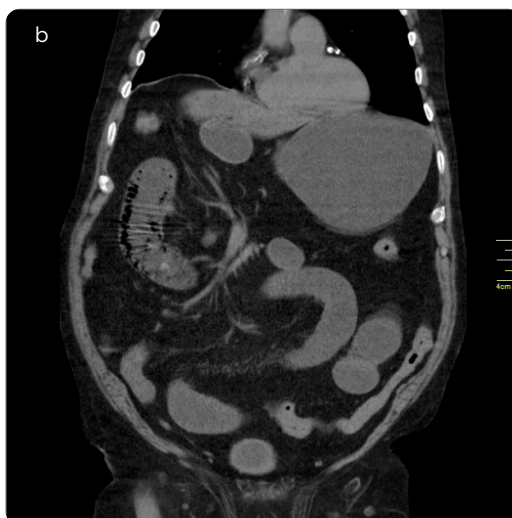


Figure 2. a and b) Simple CT of the abdomen, coronal: Distension of the middle small intestinal loops, with fecalization and collapse of small intestinal loops, due to high grade obstruction.

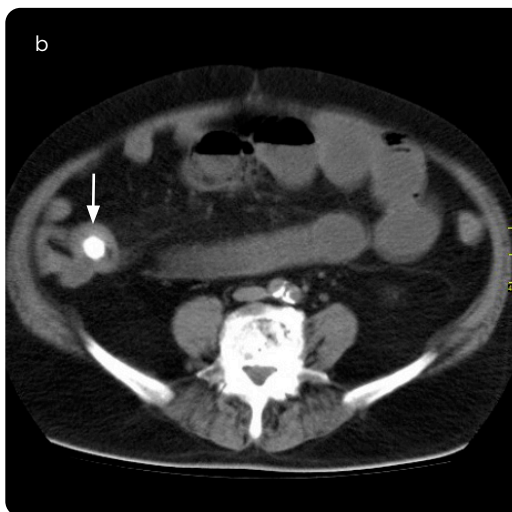


Figure 3. a and b) Simple CT of the abdomen, coronal and axial: Transition zone in the ileocecal valve. High density rounded image is identified, corresponding to biliary calculus.

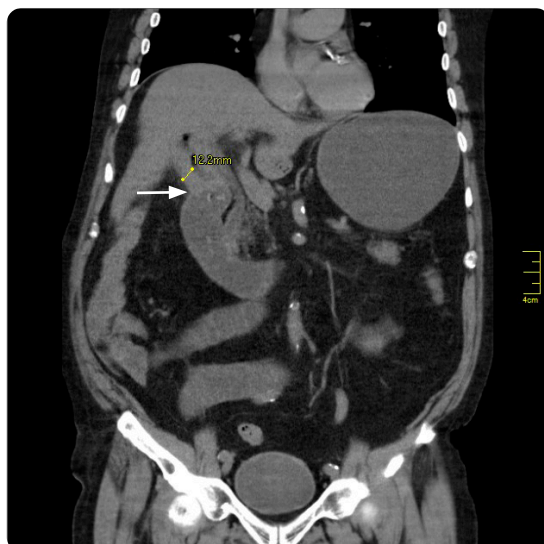


Figure 4. Abdominal CT, coronal image. Marked inflammatory changes of the gallbladder with thickening of the wall (12.2 mm). Loss of the cleavage plane between the gallbladder and the second portion of the duodenum due to the presence of duodeno-biliary fistula (blue arrow).



Figure 5. Perivesicular inflammatory changes adjacent to the bilioenteric fistula area (blue arrow).

Discussion

Biliary ileus represents less than 1% of small bowel obstructions and is more frequent in elderly women (3) in a ratio of 3.5-3.6:1 (4). The stones that cause the obstruction originate in the gallbladder and are mobilized to the intestine through an enteric fistula; the most common location is the terminal ileum, followed by the colon and very rarely the stomach (5).

On plain radiographic images of the abdomen, Rigler's triad has been described, consisting of hydroaerial levels, pneumobilia and an ectopic calculus (5); however, abdominal radiography has a sensitivity of 40-70 % in the diagnosis (4). The gold standard for the diagnosis of biliary ileus is CT, whose sensitivity exceeds 90%, and in this the most important findings are: pneumobilia in 88.89% of patients, intestinal obstruction in 96.3% and ectopic calculus in 81.48% of them (4).

Management depends on the size and morphology of the stone, since it is difficult for stones smaller than 2-2.5 cm to cause intestinal obstruction (6), and on the clinical stability of the patient. Small stones are treated expectantly; however, surgery is the management of choice, since in the same procedure the removal of the ectopic stone, cholecystectomy and closure of the fistula are performed (4).

This case is emphasized because it is not commonly presented in the environment, in order to be an academic review and to be taken into account among the differential diagnoses of abdominal pain in older adults; additionally, to take into account the imaging findings in both abdominal radiography and CT, which guide an early diagnosis and proper management. In the case presented, it is evident that an adequate anamnesis and the CT findings were of utmost importance in the timely diagnosis of this patient, since according to epidemiology, it is more common in women than in men and the size of the calculus in the patient was much smaller than expected according to the medical literature.

Conclusions

Biliary ileus is a rare pathology that if not diagnosed in time, can lead to fatal outcomes; a good anamnesis, clinical suspicion and imaging findings are the pillars for a timely diagnosis, in order to avoid complications arising from the pathology.

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