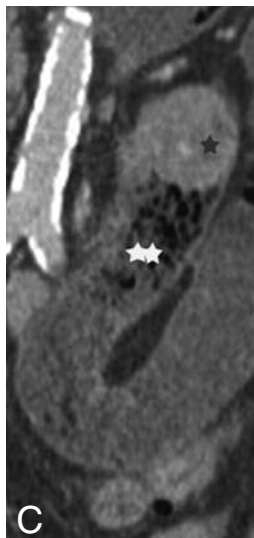
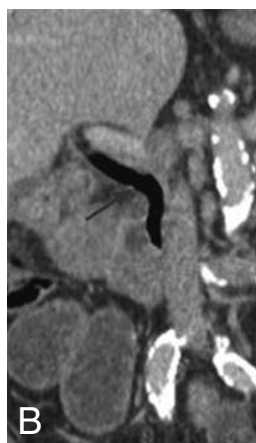
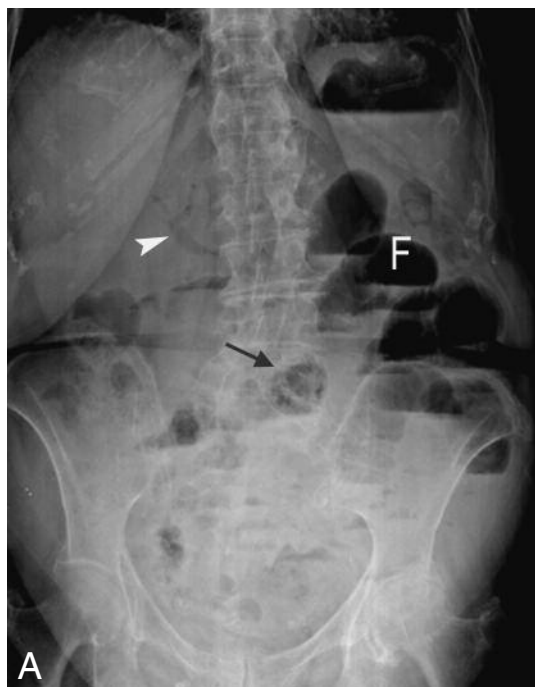


IMAGES IN CLINICAL RADIOLOGY



Rigler's triad in an 88-year-old woman

K. De Smet, M. De Maeseneer, Y.A. Talebian, B. Ilsen, P. Dewachter, J. De Mey¹

An 88-year-old woman was seen at the emergency department with sudden onset of abdominal pain and nausea. She had been constipated for a week. Medical history was positive for arterial hypertension, diabetes mellitus type II, and heart failure. Laboratory findings showed an elevation of cholestatic liver enzymes. CRP was within normal limits. An upright radiograph of the abdomen showed multiple air fluid levels (F) in the small bowel consistent with obstruction. Pneumobilia (short arrow) was also seen as well as an obstructing gallstone (long arrow). A CT of the abdomen was performed. This showed pneumobilia (long arrow), a small bowel faeces sign (white asterisk) in the jejunum consistent with obstruction, and a non radioopaque gallstone in the ileum (dark asterisk). A CT scan from a few years earlier shows signs of cholecystitis and the non radioopaque gall stone (dark asterisk). The patient was treated with laparoscopic enterotomy with removal of the gallstone and cholecystectomy. The cholecystoduodenal fistula was demonstrated.

Comment

Gallstone ileus is an unusual complication of biliary stone disease. It consists of a mechanical intestinal obstruction due to impaction of one or more large gall stones (larger than 2 cm). Gallstones usually enter the intestinal lumen through a cholecystenteric fistula. Most of these are between the gallbladder and the duodenum (cholecystoduodenal fistula). A history of prior biliary tract disease is present in 50 % of patients.

The most frequent site of stone impaction is the ileum because this is the smallest part of the small bowel. Other sites of obstruction include the jejunum, stomach, colon, and duodenum. Gastric outlet obstruction or Bouveret's syndrome occurs when the gallstone is located in the duodenal bulb.

Gallstone ileus accounts for only 2% of intestinal obstructions. It occurs more frequently in the elderly and in women. Clinical diagnosis is often delayed due to a variable clinical presentation. Clinical symptoms include abdominal pain and nausea. Characteristic features of intestinal obstruction are found in only 50-70% of patients. There may be alternate phases of improvement and relapse due to progression of the gallstone along the digestive tract. Laboratory findings may show elevated levels of alkaline phosphatase and bilirubin. A high mortality rate exists (20%).

Rigler's triad consists of pneumobilia, small bowel obstruction and a visualized gall stone. It is considered pathognomonic for gallstone ileus, but not frequently seen on the initial abdominal radiographs. Findings are easily identifiable on MDCT even if the gallstone is not calcified. MDCT in our case was not necessary for diagnosis but for determination of treatment.

In conclusion gallstone ileus is an unusual cause of intestinal obstruction. It has a high mortality rate if not diagnosed early. MDCT plays a crucial role in diagnosis and radiologists should be aware of Rigler's triad. It allows for an earlier diagnosis reducing morbidity and mortality.

¹. Department of Radiology, Univeriteit Ziekenhuis Brussel, Brussels, Belgium.