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CMIG Extra: Cases 28 (2004) 59–61

**Computerized
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Case report

MRCP findings of gallbladder perforation and pericholecystic abscess

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Received 12 August 2003; accepted 17 November 2003

Abstract

We report a case of gallbladder perforation with contained pericholecystic abscess, diagnosed by MRCP. MRCP demonstrated direct communication between the gallbladder lumen and a pericholecystic abscess, with associated cholelithiasis. MRCP can be helpful in diagnosis of clinically silent gallbladder perforation in patients with right upper quadrant pain.

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Keywords: MRCP; Gallbladder perforation; Pericholecystic abscess

1. Introduction

Gallbladder perforation is reported in 8–12% of patients with acute cholecystitis [1]. We present a case of gallbladder perforation with contained pericholecystic abscess, diagnosed by MRCP. Although the MR findings of traumatic gallbladder perforation have been described [2], to our knowledge no prior MR cases of pericholecystic abscess due to cholecystitis-related gallbladder perforation have been reported.

2. Case report

A 67-year-old man presented with dehydration and intermittent right upper quadrant pain. His past history is significant for a left hemicolectomy for a cecal cancer 1-year prior. The post-operative course was complicated by a small bowel obstruction and perforation with subsequent ileostomy formation. The patient has had recurrent hospitalizations for dehydration secondary to poor oral intake related to a cerebrovascular accident and a high output ileostomy.

At the time of presentation, the physical examination showed an ill-appearing, malnourished dysarthric man

without abdominal tenderness, rebound, guarding or peritoneal signs. He had no fever, nausea or vomiting. Laboratory data was unremarkable. Ultrasound demonstrated multiple gallstones and wall thickening consistent with hyperplastic cholecystitis. MRCP performed 6 weeks later demonstrated multiple gallstones and gallbladder wall thickening. In addition, a pericholecystic fluid collection was noted eroding into the anterior abdominal wall (Fig. 1). This fluid collection communicated with the gallbladder lumen suggesting a perforated gallbladder with adjacent abscess formation. Multiple sinus tracts were noted in the anterior abdominal wall towards the skin. The common bile duct was normal and no biliary dilatation was seen. At surgery, a ruptured gallbladder with adjacent phlegmon containing gallstones was found penetrating the peritoneum and abdominal wall muscles. Cholecystectomy, and anterior abdominal wall debridement were performed.

3. Discussion

The clinical diagnosis of gallbladder perforation is difficult to establish. Imaging plays a crucial role in diagnosis and complications of cholecystitis. Delay in diagnosing complications can lead to serious morbidity and mortality. Pericholecystic abscess can develop in cases of acute cholecystitis with a prevalence of 2.1–19.5% in different series [3]. After the introduction of MRCP,

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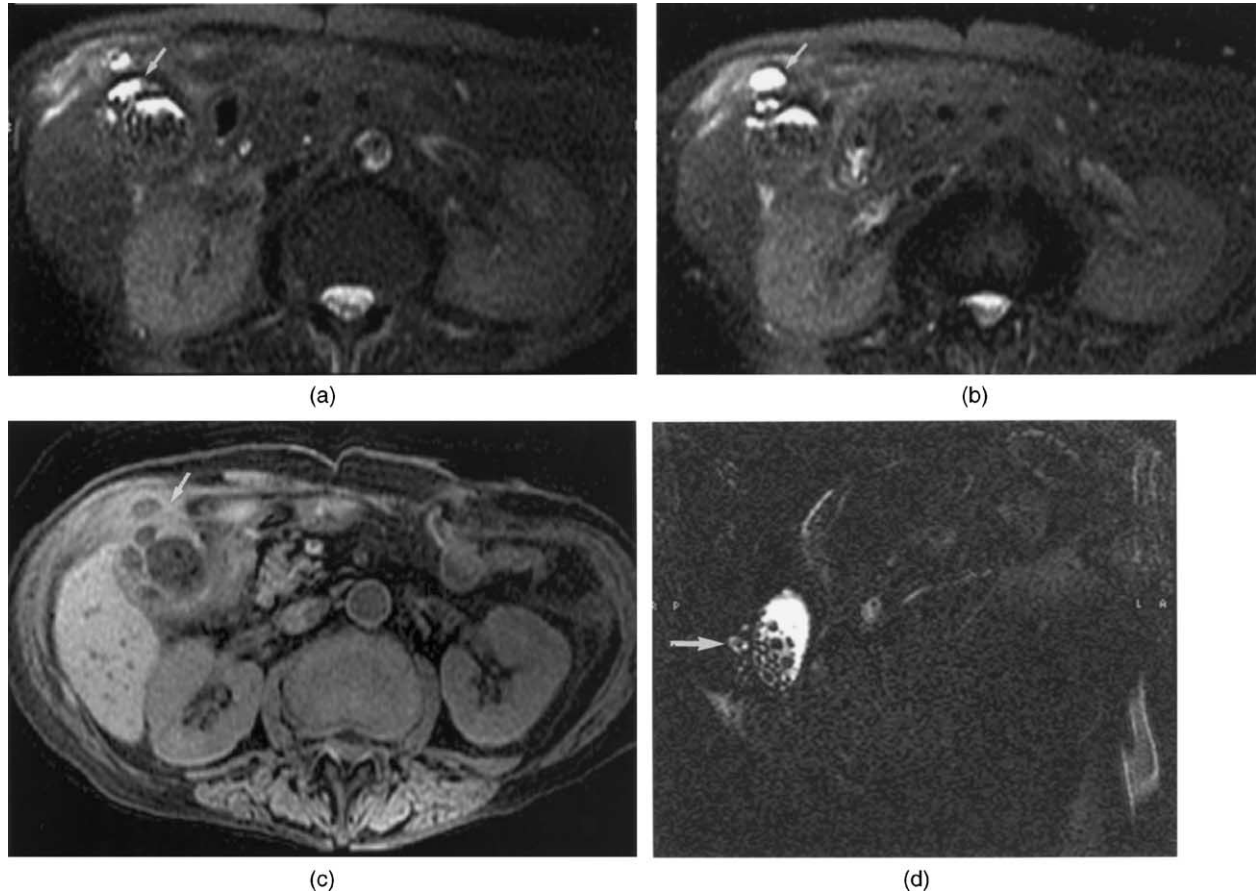


Fig. 1. Sixty-seven-year-old male with chronic right upper quadrant pain. (a, b) Single shot fast spin echo axial T2 weighted images demonstrate multiple gallstones within the gallbladder and loculated pericholecystic fluid extending into the abdominal wall (arrows). (c) Axial fast multiplanar spoiled gradient echo T1 weighted image shows a thick-walled gallbladder with inflammatory changes extending into the abdominal wall (arrow). (d) Coronal thick slab single shot fast spin echo image demonstrates numerous gallstones outside the gallbladder lumen (arrow).

improved non-invasive imaging of the biliary system became possible. In addition to diagnosis of gallstones, MRCP depicts biliary anatomy using cross-sectional and thick slab projection images.

In this case, MRCP demonstrated multiple gallstones and communication of the gallbladder with a pericholecystic abscess extending into the anterior abdominal wall. In the literature, CT findings of contained perforation have been described [1]. CT can identify an abscess, but has low sensitivity for diagnosis of gallstones. US findings and classification of pericholecystic abscess have been described [3]. However, pericholecystic abscesses communicating with the gallbladder might be difficult to diagnose with US. The advantage of MRCP is its superb ability to detect stones in the bile ducts, biliary dilatation, and the relationship of a pericholecystic fluid collection to the abdominal wall and gallbladder. This information can aid in surgical planning.

In debilitated patients with a complicated medical history, diagnosis of gallbladder perforation can be delayed due to a relatively indolent course, as in this case. Ultrasound might show non-specific thickening and irregularity of the gallbladder wall. MRCP can be helpful

in the diagnosis of clinically silent gallbladder perforation in patients with right upper quadrant pain.

4. Summary

MRCP has gained widespread use as a sensitive test for the diagnosis of choledocholithiasis and evaluation of the biliary tree. This manuscript describes a case of clinically silent gallbladder perforation in a debilitated patient with right upper quadrant pain. The MRCP documented communication between the gallbladder lumen and adjacent pericholecystic abscess, with associated cholelithiasis. It illustrates the utility of MRCP for detecting this serious complication of cholecystitis.

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