Idiopathic gallbladder perforation

Published on 10.02.2015

DOI: 10.1594/EURORAD/CASE.12328
ISSN: 1563-4086
Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Pathology Case Type: Clinical Cases
Authors: Angeli ML, Di Trapano R, Castellani F, Raguso M, Giuricin V, Simonetti G
Patient: 75 years, male

Clinical History:

A 75-year-old man presented at the emergency department after two hours of scattered abdominal pain, more severe in the right hypochondrium, with nausea and fever. The abdomen was tender. He had recently undergone a PET-CT examination for lung nodules control, which was negative for abdominal disease.

Imaging Findings:

Plain abdominal film of the abdomen was performed with no signs of bowel perforation or occlusion (Fig. 1). Vital signs and abdominal symptoms got rapidly worse. CT examination revealed a gallbladder distension with an interruption of the neck wall and a fluid collection in the gallbladder fossa (Fig. 2). Normal gallbladder wall thickness was documented. Fluid collection was also detected in perihepatic, perisplenic and pericolic spaces (Fig. 3, 4). Urgent laparotomic cholecystectomy and peritoneal lavages with isotonic saline solution were performed. Histopathology confirmed the rupture of the neck wall of the gallbladder with intact fundus wall. No histopathological abnormalities in gallbladder wall and lumen were found; both ischaemic and inflammatory causes of gallbladder perforation were excluded. Therefore idiopathic gallbladder perforation was the definitive diagnosis. Post-operative CT showed important reduction of abdominal fluid collection with drains in sub-hepatic and pelvic spaces (Fig. 5).

Discussion:

Gallbladder perforation can be idiopathic or secondary [1]. Secondary perforation occurs in 3% -10% of patients with acute cholecystitis [2]. Infection, obstruction by lithiasis, malignancy, trauma or iatrogenic causes may lead to gallbladder perforation [1]. It is uncommon if no lithiasis is detected [2]. Risk factors include corticosteroids therapy and systemic diseases such as diabetes mellitus and atherosclerotic heart disease [1]. Idiopathic gallbladder perforation is extremely rare [2]. We documented a perforation without any gallbladder disease. The fundus is the most common site of perforation, because of its poor blood supply; it suggests the importance of ischaemic mechanism [3, 4]. In our case an unusual perforation of gallbladder neck is described with typical symptoms and signs, without evidence of ischaemic cause. Affected patients are usually elderly; signs and symptoms include acute right upper abdominal pain and tenderness, guarding, fever, and leukocytosis [3, 4]. Differential diagnosis with other causes of acute abdomen (e.g. appendicitis, pancreatitis, salpingitis, bowel infarction or obstruction, perforated peptic ulcer, diverticulitis) may be difficult [3, 4]. Imaging techniques have an important role for differential diagnosis. Ultrasound (US) is usually the first investigation used in gallbladder diseases [4, 5]. US can investigate gallbladder wall and lumen, and gallbladder fossa [4, 5]. CT is more accurate than US in gallbladder perforation diagnosis; a visible defect in the wall and evidence of bile leakage are better detected [4, 5]. CT also allows identifying and evaluating possible outcomes such as bile peritonitis and abdominal abscess [5]. In our case CT played an important role in the diagnosis of idiopathic...
perforation, its outcomes and post-operative follow-up. Cholecystectomy and abdominal lavages are usually sufficient to treat gallbladder perforation as in our case [5]. Delay in surgical intervention results in increased morbidity and mortality, so early diagnosis has a crucial importance for the prognosis [6]. Our patient was promptly treated with surgery without any complications as documented with post-operative CT.

**Differential Diagnosis List:** Idiopathic gallbladder perforation, Acute appendicitis, Acute cholecystitis, Acute pancreatitis, Intestinal infarction, Perforated peptic ulcer, Diverticulitis, Intra-abdominal abscess, Bowel obstruction

**Final Diagnosis:** Idiopathic gallbladder perforation

**References:**


Figure 1

Description: X-ray of the abdomen.
No signs of bowel perforation or occlusion were documented. Origin: Department of Diagnostic Imaging and Interventional Radiology, University of Rome Tor Vergata
Description: CT of the abdomen after intravenous injection of contrast medium. A gallbladder distension with an interruption of the neck wall and a fluid collection in the gallbladder fossa were documented. Origin: Department of Diagnostic Imaging and Interventional Radiology, University of Rome Tor Vergata
Description: CT of the abdomen after intravenous injection of contrast medium. Fluid collections were documented in pericolic spaces. Origin: Department of Diagnostic Imaging and Interventional Radiology, University of Rome Tor Vergata.
Figure 4

Description: CT of the abdomen after intravenous injection of contrast medium. Fluid collection was documented in perihepatic and perisplenic spaces. Origin: Department of Diagnostic Imaging and Interventional Radiology, University of Rome Tor Vergata
Figure 5

Description: Post-operative CT of the abdomen after intravenous injection of contrast medium. It shows an important reduction of abdominal fluid collection with drains in sub-hepatic space. Origin: Department of Diagnostic Imaging and Interventional Radiology, University of Rome Tor Vergata