Transdiaphragmatic intrathoracic rupture of a hepatic dome hydatid cyst

68 year old female patient admitted with a 2-month history of right upper quadrant abdominal pain and malaise.

A 68 year old female patient was admitted with a 2-month history of right upper quadrant abdominal pain and malaise. PA and lateral chest X-rays (Fig.1a,b) revealed a right middle lobe consolidation abutting the minor fissure and obscuring the ipsilateral heart border as well as the medial half of the right hemidiaphragm. A faint curvilinear calcification projecting below and above the expected location of the right hemidiaphragm was barely visible (Fig. 1b). Subsequent abdominal US examination showed a round lesion with a mixed echogenic pattern and a calcified wall in segment VIII of the liver (Fig.2a). Abdominal CT demonstrated a round cystic lesion containing near-water density material as well as multiple air bubbles and a calcified wall, located in the VIII hepatic segment (Fig.3a). The superior portion of the lesion extended cephalad into the right thoracic cavity and was surrounded by an atelectatic middle lung lobe (Fig.3b). The transition zone between the right hemidiaphragm, the liver and the middle lobe of the right lung was indistinguishable (Fig.3c). A focal discontinuity and outward bulging of the lateral cyst wall was observed at the intrathoracic portion of the cystic lesion (Fig.3d). The final diagnosis was confirmed at surgery.

Discussion:

Involvement of the diaphragm and thoracic cavity occurs in 0.6%-16% of cases of hepatic hydatid disease (1). Transdiaphragmatic migration of hydatid disease from the posterior segments of the right hepatic lobe has been reported to be a common complication and is probably related to their proximity to the diaphragm (2). The bare area of the liver has been shown to be the most common route of transdiaphragmatic migration, a finding that has been attributed to the lack of peritoneal covering in this particular area (2). Extension of right liver lobe hydatid disease through the diaphragm via other routes, as in our case, is less common. Transdiaphragmatic migration varies from simple adherence to the diaphragm to rupture into the pleural cavity, seeding in the pulmonary parenchyma and chronic bronchial fistula (1,2,3,4). In this particular case, a subdiaphragmatic hepatic hydatid cyst migrated through the anterior portion of the right hemidiaphragm and ruptured into the middle lobe of the right lung. The presence of air within the lesion suggested communication with the bronchial tree. The focal bulge of the cyst wall was indicative of the rupture site. Chest radiography findings of thoracic involvement are: pleural effusion, elevation of the diaphragm, lung consolidation and atelectasis. US can help to confirm the presence of a hepatic hydatid cyst and show pleural effusion. CT is valuable for demonstrating transdiaphragmatic migration and evaluating the thoracic...
component (1,2).

**Differential Diagnosis List:** Transdiaphragmatic intrathoracic rupture of a hepatic dome hydatid cyst

**Final Diagnosis:** Transdiaphragmatic intrathoracic rupture of a hepatic dome hydatid cyst

**References:**


Figure 1

Description: Posteroanterior chest X-ray shows a middle lobe consolidation obscuring the right heart border and the medial half of the ipsilateral hemidiaphragm. Origin:
Description: Lateral chest X-ray shows a barely visible curvilinear calcification projecting below and above the expected location of the right hemidiaphragm (arrows). Origin:
Description: Abdominal US examination shows a round lesion with a mixed echogenic pattern and a calcified wall in segment VIII of the liver. Origin:
Figure 3

a

Description: Unenhanced CT scan demonstrates a round cystic lesion containing near-water density material as well as multiple air bubbles and a calcified wall, located in the VIII hepatic segment. Origin:

b

Description: Unenhanced CT scan shows the superior portion of the hepatic cystic lesion extending cephalad (arrows), surrounded by an atelectatic middle lobe. Segmental and subsegmental middle lobe bronchi are seen coursing through the collapsed middle lobe (arrowheads). Origin:

c

Description: Unenhanced CT shows an indistinguishable transition zone between the right hemidiaphragm, the liver and the middle lobe of the right lung. Origin:
Description: CT depicts a focal discontinuity and outward bulging of the lateral cyst wall at the intrathoracic portion of the cystic lesion (arrow). Origin: