Embolization of Ruptured Hepatic Hydatid Cyst to Pulmonary Artery in an Elderly Patient
Multidetector computed tomography findings

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Abstract: Pulmonary embolism due to hydatid disease is an unusual condition resulting from the rupture of a hydatid heart cyst or the opening of liver hydatidosis into the venous circulation. A 78-year old male patient complaining of dyspnea, cough and severe chest pain was admitted to our emergency department. A multidetector computed tomography of the chest revealed the presence of multiple nodules in both lungs especially in left and multiple hypodense filling defect in left main pulmonary artery and its branches. In addition, coronal reformatted multidetector computed tomography images also showed two hypodense cystic parenchymal masses on the left lobe of the liver with a cystic embolus in the right atrium. Pulmonary embolism should be kept in mind in patients who have hepatic hydatidosis if suddenly chest pain and dyspnoea occurs, especially in regions where hydatidosis is endemic.

Keywords: Pulmonary embolism; Rupture; Echinococcosis; Hepatic; Multidetector computed tomography; Aged people; Case report; Turkey.

Hydatid disease is still an important worldwide health problem. Although more dominant in definite sheep-raising countries, worldwide travel has made hydatid liver disease much more prevalent in previously unaffected regions such as Northern Europe or North America. Hydatidosis is a parasitic infection produced by the larvae of Echinococcus granulosus. Humans may contact the infection either by direct contact with a dog, which is the definitive host, or by ingestion of foods or fluids contaminated by the E. granulosus eggs, which can be present in dog faeces.1–3 After ingestion, the embryos in the eggs release and migrate, most commonly to the liver and lungs; however, other organs can also become involved.2,3 The hydatid cyst of E. granulosus tends to develop in liver (50–70%), lungs (20–30%), or, less frequently, in other parts of the body, such as the brain, heart, and bones.1,6 Hydatid pulmonary embolism is an uncommon condition. It is usually seen in cardiac hydatidosis but it can be also due to inferior vena cava (IVC) or hepatic vein invasion in liver hydatidosis.5 We present multidetector computed...
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Case Report
A 78-year-old male patient was admitted to the emergency department of Kahramanmaras Sutcu Imam University Hospital, Kahramanmaras, Turkey, complaining of dyspnoea, cough and severe chest pain. The patient had undergone coronary artery bypass grafting 10 years before. On admission, the patient was dyspneic and mildly cyanotic. On examination, the respiration rate was 36 breaths/minute and chest auscultation revealed crackles in his lower left pulmonary fields. His blood pressure (BP) was 130/80 mmHg. The pulse rate was 96 beats/minute. The electrocardiogram was normal, there was no leg oedema, and a laboratory evaluation was within normal limits. The patient had no symptoms suggestive of an anaphylactic reaction.

An MDCT pulmonary angiography was performed on suspicion of a pulmonary embolism. The MDCT of the chest with intravenous contrast administration showed multiple cysts in both lungs, with a predominance in the lower left lung [Figure 1], and a hypodense mass located in the left main pulmonary artery which was consistent with an intra-arterial hydatid cyst [Figure 2]. In addition, coronal reformatted MDCT images also showed two hypodense cystic parenchymal masses on the left lobe of the liver and a cystic embolus in the right atrium [Figure 3]. The patient’s clinical history and imaging findings, and the prevalence of hydatid cysts in Turkey led to the diagnosis of a pulmonary embolism complicating a liver hydatid cyst. The patient refused surgical intervention and so was treated with a 30-day course of albendazole (Andazol®) 10 mg/kg/day in two divided oral doses, and cetirizine hydrochloride (Zyrtec®), oral 10 mg tablet, once a day. After several days, the patient’s dyspnea and chest pain resolved with medical treatment and was discharged with his consent.

Discussion
The growth of hydatid cysts is usually slow and asymptomatic, and clinical manifestations are caused by compression of the involved organs. Additionally, if hydatid cysts are not detected in time, the cyst may become life-threatening and rupture. Intrabiliary rupture is the most common and life-threatening complication but intracaval rupture of hydatid disease of the liver is a rare complication. Pulmonary artery embolism due to hydatid cyst is an extremely rare entity. There have been a few reports of embolisation following cyst rupture into the IVC or hepatic veins, but these reports have been made based mainly on post-mortem examinations.

To the best of our knowledge, this is the first case in the literature where a ruptured liver echinococcal cyst resulted in pulmonary embolus in an elderly patient. In other studies, all patients were...
Case Report

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Dissemination of the disease, anaphylactic shock, embolism, and pseudoaneurysm formation. The degree of the degenerative changes in the arterial wall, proximal or distal localisations of the pulmonary artery occlusion and irreversible parenchymal changes are factors influencing the selection of the operative procedure. Some patients who refuse surgery should be treated with albendazole due to the disseminated nature of the hydatidosis.

Conclusion

A ruptured liver echinococcal cyst resulting in pulmonary embolus in an elderly patient is extremely rare. Pulmonary hydatid cyst emboli should always be one of the differential diagnoses of the hypodense and/or cystic intr-arterial pulmonary mass in a patient with hepatic hydatid cyst adjacent to the IVC or hepatic veins.

References


