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Case Report

Hydatid pulmonary embolism: An exceptional complication of hydatid disease

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ABSTRACT

We present an extremely rare case of a young man with hydatid pulmonary embolism caused by a direct invasion of the pulmonary artery by a hydatid cyst. Even if it is a benign parasitic disease, it can lead to serious complications such as arterial, systemic, or multivisceral dissemination or being responsible for an anaphylactic shock. Because of the clinical polymorphism, the diagnosis can be delayed. Therefore, it is necessary to know when conduct a chest CT angiography which is the gold standard for the positive diagnosis.

Introduction

The pulmonary hydatidosis is a frequent entity seen particularly in Mediterranean countries [1]. It frequently infects the liver and the lung [2] and mostly surgically treated with an uneventful recovery. However, some complications can occur making the prognosis bad. The hydatid pulmonary embolism is a very rare complication caused by rupture of a hepatic or cardiac hydatid cyst [3] or more rarely originating from a direct involvement of the artery pulmonary by a hydatic pulmonary cyst. We present a case of a young man, with no alarming clinical picture, turned to our imaging department to conduct a chest and abdominal CT scan under which we retained the diagnosis of pulmonary embolism by direct invasion of pulmonary artery.

Case report

A 28 year-old man, with history of hepatic hydatid cyst operated 3 times without any respiratory symptoms before this episode. The last surgery went back to 1 year ago. He was hospitalized in pulmonary department for hemoptysis of low abundance associated with night sweats without fever. The chest X-ray showed some nodular opacities and aerial rounded images prevailed in the right lung field (Fig. 1). The

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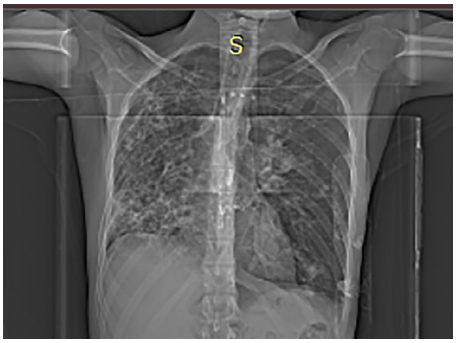

Fig. 1 – CT topogram: some nodular opacities and aerial rounded images prevailed in right pulmonary field.

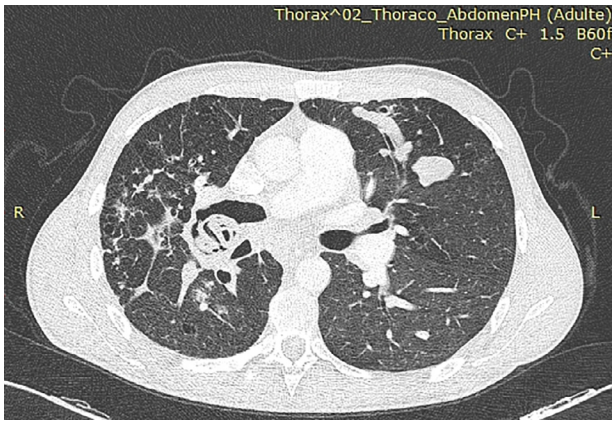

Fig. 2 – Axial CT scan of the chest on lung window: a heterogeneous cystic image containing air in the right main pulmonary artery.

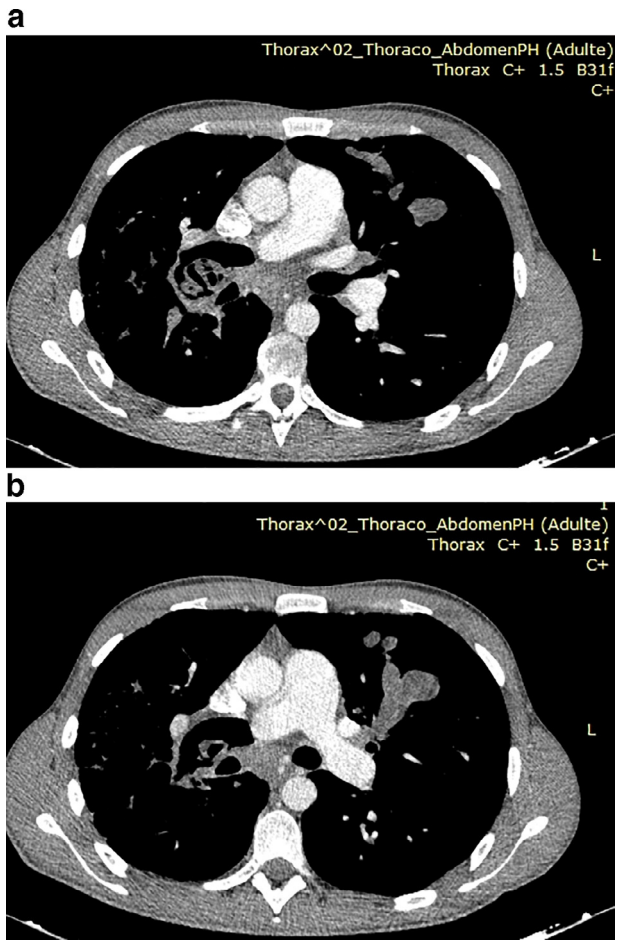

Fig. 3 – Axial CT scan of the chest on mediastinal window: Panel A: nonopacification of the right main pulmonary artery and its branches replaced by air. Panel B: intra-arterial cysts extending along the left lobar and segmental pulmonary arteries of lingula.

chest CT angiography showed multiple echinococcal cysts in both lung parenchyma, mostly univesicular with intra-arterial cysts extending along the left lobar and segmental pulmonary arteries of lingula. It also individualized an heterogeneous cystic image containing air in the right main pulmonary artery with nonopacification of its branches replaced by air (Figs. 2 and 3): it is a hydatid cyst fistulized in the bronchi and involving the right pulmonary artery responsible of its thrombosis. Thoracic MRI (Fig. 4) confirmed the cystic nature of the masses described above. After albendazole therapy and anticoagulants, the patient did well with partial resolution of his symptoms.

Discussion

Until now, pulmonary hydatid disease poses real public health problems. It is endemic in many Mediterranean countries [1]. The causative organism is a worm called *Echinococcus granulosus* that resides in the jejunum of dogs and produces eggs. These eggs, eliminated in the stools are then ingested accidently by intermediate hosts including humans; liberate an embryo in the duodenum, which enter the portal circulation through the intestinal mucosa. Most of them are trapped in the liver while the rest pass through it and disseminate to other organs then develop into hydatid cysts.

Its prognosis is generally good but can turn into a dramatic situation by the occurrence of complications.

Hydatid pulmonary embolism is an exceptional but a potentially life-threatening complication because of the risk of acute fatal complications such as anaphylactic shock [4].

The clinical picture is nonspecific and not always alarming, ranging from a simple discomfort associated with a skin rash to an anaphylactic shock at the acute phase [5] or general clinical signs of pulmonary embolism due to obstruction of pulmonary artery branches. It could also be incidentally discovered during a work-up of the lesions of the hydatid disease as the case of Rabah et al. [6].

The diagnosis is based on the imaging findings. The chest CT angiography is the gold standard. It shows the topography of hydatid cysts, the obstruction of pulmonary artery, its degree, and cardiac repercussion.

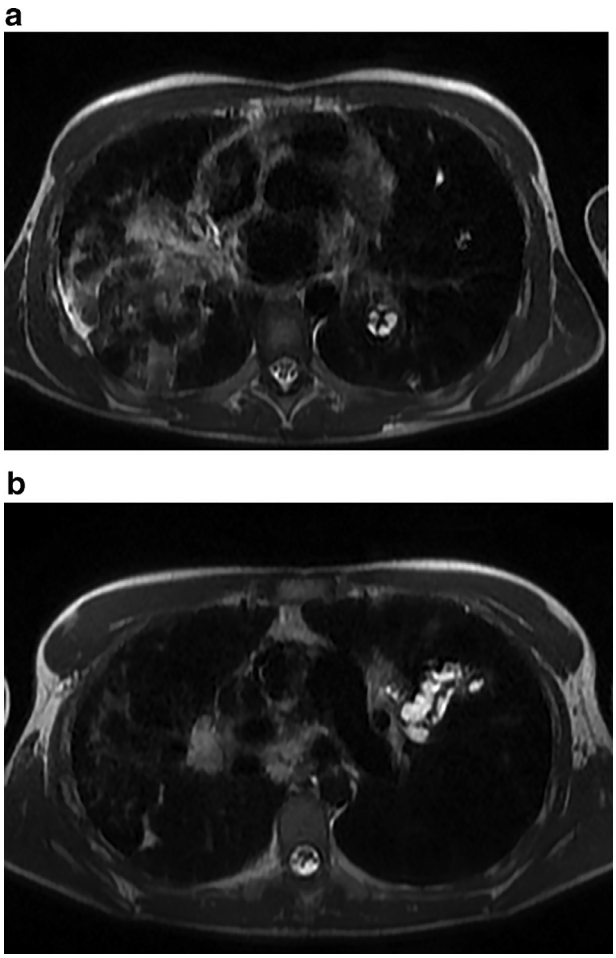

Fig. 4 – Panel A: axial MRI, T2-weighted sequence: multivesicular hydatid cyst on the lower left lobe. Panel B: axial MRI, T2 weighted sequence: intra-arterial cysts extending along the left lobar and segmental pulmonary arteries of lingula.

The treatment is difficult and still not codified. Surgical management is the first-line treatment for most cases of pulmonary arterial hydatidosis. It is based on resection of the hydatid cysts with more often a conserving surgery of pulmonary parenchyma [7]. The medical therapy helps to reduce the postoperative spread and can be used individually if there are contraindicated of surgical treatment. Therefore, the best treatment is prevention.

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