Cardiac Hydatidosis: A Case Report
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Citation

Abstract
Cardiac hydatidosis is a very unusual condition which can be isolated or occur in association with hydatid disease elsewhere in the body. We report here a twenty-two year old farmer who had hydatid cyst in the right ventricle with associated pulmonary lesions.

INTRODUCTION
Hydatid disease of the heart is a very rare condition. We describe here an interesting case of cardiac hydatidosis with associated pulmonary lesions.

CASE HISTORY
A twenty-two year old farmer presented with history of cough and breathlessness since two months. He also had one episode of expectoration of grape skins and hemoptysis. Clinical examination of the chest was normal except for scattered rhonchi on the right side of the chest. Chest radiograph showed a few round opacities of soft tissue density in the lower zones bilaterally. 2D echocardiogram revealed a multiloculated cyst in the right ventricle; there was good left and right ventricular function and no pulmonary arterial hypertension. Cardiac catheterization was performed that revealed a filling defect in the right ventricle. CT scan of the chest showed a hypodense lesion measuring 8x4.5x4 cms and 4-11 HU in the right ventricle suggestive of a cystic lesion. There were multiple nodules of varying sizes 1-4 cms of soft tissue density diffusely in both lungs predominantly in the lower lobes. Ultrasonography of the abdomen was normal. The provisional diagnosis was cardiopulmonary hydatidosis. The patient was operated through a midline vertical sternotomy under moderate hypothermia. Peroperatively a large hydatid cyst measuring 7x4cms was noted in the right ventricular cavity attached to the anterior wall of the right ventricle and posterior interventricular septum which was excised carefully avoiding spillage of the contents through an opening in the right atrium. The cavity was not obliterated to avoid compromising the right ventricular cavity. A few nodules were noted in the apical and posterior segments of the lower lobe of the left lung, which were negative on aspiration. Histopathological examination showed multiple membranous pearly white cysts with an eosinophilic laminated membrane and a germinal layer with no definite scolices.

Figure 1
Fig.1: 2D- Echocardiography showing a multiloculated cystic lesion in the right ventricle
DISCUSSION

Hydatidosis occurs in humans (intermediate host) when the ova of Echinococcus granulosus from canine (definitive host) faeces are accidentally swallowed. The larvae hatch in the duodenum and are carried to the liver, lungs and systemic circulation. Less than 10% of the larvae reach various organs through the systemic circulation. [1] The first indisputable case of cardiac Echinococcosis was described by Williams in 1836. Only about 0.5% - 1% of the hydatid cysts are found in the heart. [2] The reason for this rare occurrence appears to be the cardiac contractions that provide resistance to the presence of viable cysts. [3] Cardiac involvement can occur from systemic or pulmonary circulation or as direct extension from the adjacent structures. [4] It can occur in any part of the heart and the manifestations depend on the size, location and integrity of the cyst. Left ventricle is the commonest site (75%), followed by the right ventricle (15%), interventricular septum (5-9%), left atrium (8%), pericardium (8%), pulmonary artery (7%) and right atrium (3-4%). [5]

Patients can be asymptomatic or present with pain, either due to partial rupture into pericardium or cardiac insufficiency due to compression of the coronary vessels leading to myocardial infarction. [6] The cysts can also lead onto valve destruction or simulate valvular lesions. Cysts of the left ventricle are localized subepicardially and rarely rupture into the pericardial space. However, rupture is more frequent with the cysts in the right ventricle (RV) and intracavitary rupture can result in pulmonary embolism. Conduction disturbances and complete AV block can occur due to cysts in the interventricular septum.

Echocardiography, computed tomography (CT) and magnetic resonance imaging (MRI) are valuable diagnostic tools. Hydatid cyst appears as a circumscribed uni- or multilocular cystic lesion of fluid attenuation with a peripheral thin capsule. On T1W images of MRI, it is hypointense and on T2W images, the cyst contents appear hyperintense with a thin hypointense capsular rim. The daughter cysts have a characteristic appearance - more hypointense than the parent cyst on T1W images and more hyperintense than the parent cyst on T2W images. A decrease in the hyperintensity and an increase in the hypointensity suggest a collapsing cyst and this feature helps in differentiating a viable cyst from a dying one. The imaging features can vary depending on coexisting infection, calcification or hemorrhage.

Serious potential complications are rupture and anaphylactic shock or cardiac tamponade, systemic embolism of daughter cysts, scolices or thrombi or pulmonary embolism [7,8] and sudden death. Hence, it is essential to treat the patient surgically with perioperative albendazole therapy.

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