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Case Report

A Rare case of Left Ventricular Hydatid Cyst

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Abstract
Cardiac involvement by the hydatid disease is extremely rare and reported in 2% of cases.Cardiac hydatid cysts constitute a medical emergency, requiring prompt diagnosis through multiple imaging techniques. Early surgical intervention combined with pharmacological therapy is crucial, particularly for suspicious cystic lesions in regions where the disease is endemic. Here we report a 24-year-old female with no comorbidities and no significant past history,with history of pet dog exposure presented with acute pain in the peri umbilical region, grade 2 shortness of breath diagnosed as incisional hernia planned on surgery, in routine pre op evaluation diagnosed with left ventricular hydatid cyst.

Keywords: Left ventricular hydatid cyst, Cardiac, Hydatid disease, Echinococcosis

INTRODUCTION

Cardiac involvement by the hydatid disease is extremely rare and reported in 2% of cases. The coronary circulation and pulmonary veins are main access to heart. Due to the rich coronary blood supply, the left ventricular wall is the most common cardiac location followed by right ventricle.[1,2]Cardiac hydatid cysts constitute a medical emergency, requiring prompt diagnosis through multiple imaging techniques. Early surgical intervention combined with pharmacological therapy is crucial, particularly for suspicious cystic lesions in regions where the disease is endemic. It is vital for cardiologists and diagnostic specialists to maintain a high level of awareness regarding this condition.[3]

Case presentation

A 24-year-old female with no comorbidities and no significant past history, with history of pet dog exposure consumes mixed diet presented to hospital for incisional hernia surgery referred in view of ECG changes. Patient is having pain abdomen in the peri umbilical region and grade 2 breathlessness evaluated for pain abdomen with usg abdomen pelvis revealed a diagnosis of incisional hernia planned on surgery in pre op analysis with ECG changes like ST-T changes: 1 mm ST depression in v1,v2,v4,v5,v6 with t wave inversions and 2mm ST depressions in v3 and convex ST elevation 1mm in avR, with patient DLC within normal limits, RFT and LFT were normal with elevated Esr-62mm 1st hour, crp-36.5.2D ECHO was done, that showed normal chamber size. A kinetic Left ventricular apex with a lobulated intramyocardialmass in LV apex of 6 x 8mm.CECT chest was done, which showed 6 x 8 mm internal septations and no contrast enhancement in Left ventricular myocardial apex as patient is asymptomatic kept on routine follow up with 2D ECHO.

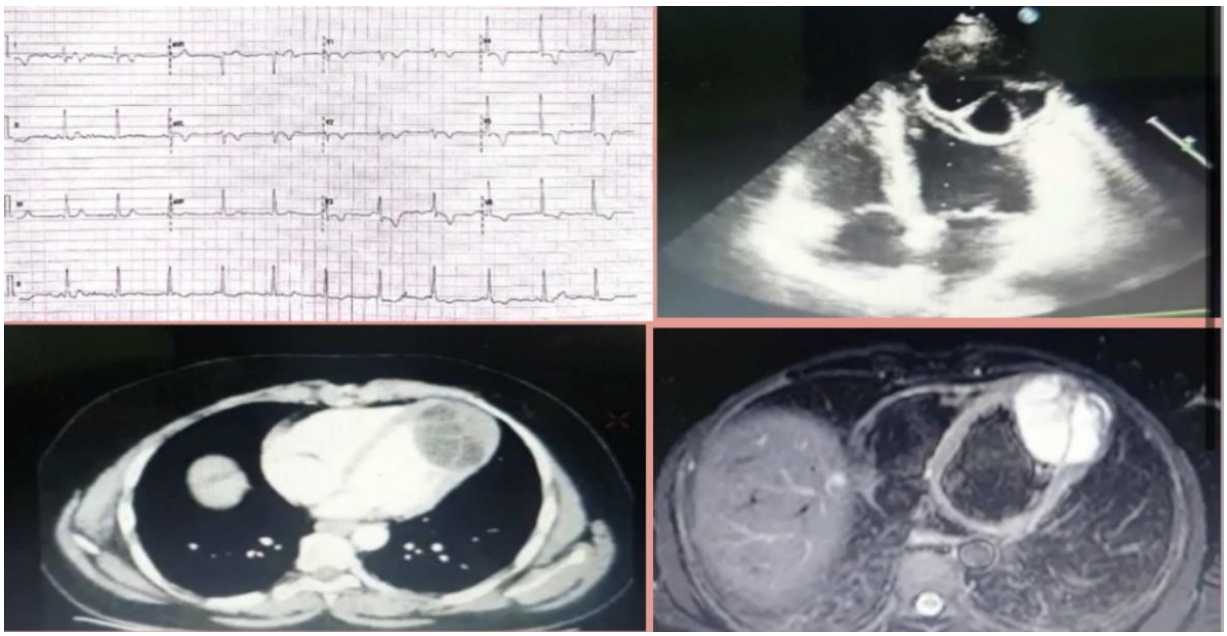

Figure 1: ECG, 2D-ECHO and CECT of the patient

DISCUSSION

Echinococcosis isacommon parasitic infection in developing and developed countries, endemic in sheep-raising areas. Dogs and cats are the definitive hosts, while humans are affected accidentally. Patients with pet exposure and ECG abnormalities must undergo thorough investigation with ECHO and Cardiac MRI for proper diagnosis.[1,2]

William documented the first instance of a cardiac hydatid cyst in 1936. Hydatid disease is a parasitic infection caused by the microorganism Echinococcus granulosus. It is frequently found in regions where sheep farming is common, making it an endemic condition in such areas. The main hosts of the Echinococcus parasite are domestic animals like dogs and cats. Humans become infected accidentally by consuming parasite eggs through contaminated water or vegetables. [5,6]

Among cardiac involvement Left ventricular involvement by Echinococcus occurs in approximately 55–60% of cases, largely due to the left ventricle's substantial myocardial mass and rich blood supply. The interventricular septum is affected in about 5–9% of cases. The right ventricle is involved in roughly 15% of cases, while the right atrium is affected in 3–4%. The pulmonary artery, left atrium, and pericardium are involved in up to 7–8% of cases.[7]This condition can appear at any age and may lead to obstruction in cardiac outflow tracts, valves, or chambers. It can also cause electrical conduction abnormalities, including atrioventricular nodal block, ventricular tachycardia, ventricular fibrillation, or cardiac tamponade, though some patients remain entirely asymptomatic. Serious complications such as pulmonary embolism, anaphylactic shock, and systemic spread of the disease are also possible. Hydatid cysts in the left ventricle are typically located just beneath the pericardium and seldom rupture into the pericardial cavity. Surgical treatment carries a risk of cyst fluid leakage, which may result in anaphylaxis or spread of the infection. This risk can be reduced by using scolicidal agents like iodine, hypertonic saline, methylene blue, or ethanol during the procedure.[3]

Radiologic imaging plays a central role in diagnosing cardiac hydatid cysts. Common diagnostic tools include echocardiography, CT scans, and MRI. While transthoracic echocardiography can help identify the cysts, it has limitations in assessing nearby structures. On a CT scan, hydatid cysts typically appear as fluid-filled lesions that may contain internal septations, daughter cysts, or calcifications—features best visualized on CT. Interestingly, the cyst wall often shows higher attenuation on non-contrast CT for reasons that are not clearly understood. The standard treatment for hydatid cyst disease involves a multimodal surgical approach. Although antiparasitic medications are used before and after surgery, definitive management requires surgical removal of the cyst using cardiopulmonary bypass.[3,6]

CONCLUSION

Patients with petexposureand ECG abnormalities must undergo thorough investigations with ECHO and cardiac MRI for proper diagnosis. Early surgical intervention combined with pharmacological therapy is crucial, particularly for suspicious cystic lesions in regions where the disease is endemic.

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