

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: -<a href="http://www.journalijar.com">www.journalijar.com</a></p> <h2>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p>Article DOI:10.21474/IJAR01/8828 DOI URL: <a href="http://dx.doi.org/10.21474/IJAR01/8828">http://dx.doi.org/10.21474/IJAR01/8828</a></p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: <a href="http://www.journalijar.com">http://www.journalijar.com</a> Journal DOI:10.21474/IJAR01</p>
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### RESEARCH ARTICLE

#### CARDIAC HYDATID CYST IN THE INTERVENTRICULAR SEPTUM: A RARE PRESENTATION.

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#### Manuscript Info

##### Manuscript History

Received: 06 February 2019

Final Accepted: 08 March 2019

Published: April 2019

##### Keywords:-

Hydatid cyst, Cardiac echinococcus,  
Interventricular septum.

#### Abstract

Cystic hydatid disease results from infection with the larval or adult form of the *Echinococcus granulosus* tapeworm. Cardiac involvement is seen in 0.5% to 2% of patients with hydatid disease, and involvement of the interventricular septum is even rarer. We report a case of 65-year-old female was admitted to our hospital with atypical chest pain. The patient had no history of previous cardiac symptoms or any illness leading to heart disease. Her coronary angiography was normal. The diagnosis of cardiac echinococcosis was identified using echocardiography, computed tomography imaging. The patient was treated with medication and surgical excision.

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#### Introduction:-

Hydatid disease (HD) is mostly caused in humans by the cestode tapeworm, *Echinococcus granulosus*. Most often, the sheep is the intermediate host and the dog the definitive host, but man is a common accidental host. It has a worldwide distribution with higher prevalence in South Europe, South America, Africa, Turkey, Australia, New Zealand, and India (1).

Cardiac echinococcosis (CE) is extremely rare, representing 0.5–2% of all human cases (2). Left ventricle (LV) (55–60%) is the most commonly affected cardiac chamber and the interventricular septum is involved in just 5-9% of cardiac cases.

In 3-4% of cases, right atrium is involved, and right ventricle is involved in 15%. Distribution in the left atrium, pulmonary artery, and pericardium occurs in 8%, 7%, and 8% of cardiac cases, respectively, (3). Cardiac hydatid cysts can rupture and cause cardiac tamponade, fatal arrhythmias, or systemic infection (2). It may cause valvular dysfunction, conduction disturbances or may lead to congestive heart failure (4). Other cardiovascular manifestations of pericardial reaction, pulmonary or systemic embolism, pulmonary hypertension, and anaphylactic reactions (5). The symptoms may be nonspecific and hence establishing an early diagnosis is difficult.

#### Case Report

A 65 year old female presented with a history of dull aching left sided chest pain. Her Pulse rate was regular and 74 per minute, blood pressure was 130/80 mm Hg. Heart sounds were normal and there was no murmur. Chest and

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abdominal examinations were unremarkable. Results of hematologic and biochemical laboratory exams were normal.

ECG was normal. Transthoracic echocardiography demonstrated a mixed echogenic mass of 61 x 45mm involving interventricular septum and the posterolateral aspect of the left ventricular free wall. Cardiac CT imaging identified a peripheral enhancing cystic mass of size of 65 x 45 mm with septations and calcifications in the heart involving interventricular septum and extending outside involving pericardium, consistent with hydatid cyst. Thoracic computed tomography (CT) of the lungs identified no additional organ involvement. Coronary angiography and hepatic ultrasound were normal.

Excision of hydatid cyst was done by median sternotomy approach. Cyst involving interventricular septum noted. cystic cavity opened and 97 hydatid cysts ( 83 daughter cysts and 14 large cysts ) removed. Cyst liquid was evacuated and hypertonic serum was injected in the cyst several times and the pericyst closed. The patient had an uneventful recovery and was discharged on albendazole (10mg/day) to prevent a recurrence.

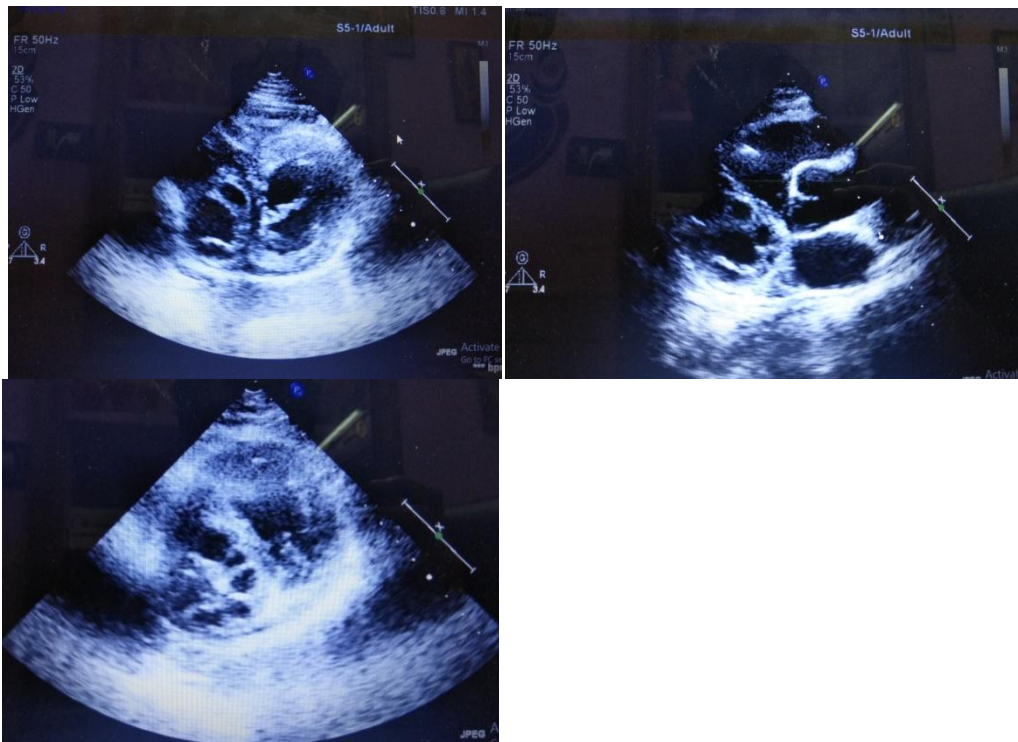


Fig .1: Transthoracic Echocardiogram showing cystic lesions arising interventricular septum and occupying right ventricle



Fig.2: Cardiac CT showing multiloculated cyst involving interventricular septum occupying



Fig.4: Shows the hydatid cysts removed from the



Fig.3: Intraoperative image of hydatid cysts

#### **Discussion:-**

The most common sites of hydatid cysts are the liver (in 50%–70% of cases), lungs (5%–30%), muscles (5%), bones (3%), kidneys (2%), spleen (1%), and brain (1%). (6, 7)

Hydatid cyst most commonly involves the left ventricle (55-60%), because this chamber of heart has the maximum myocardial mass and blood supply (6). Cardiac hydatid cyst is a rare disease and its symptom is depending on the size and site of infection. Only 10% of patients with cardiac hydatid cyst are symptomatic and most patients are asymptomatic due to slow growth of the cyst.

Hydatid cyst with LV involvement can mimic left ventricular aneurysm and it should be one of differential diagnosis of cystic cardiac lesions in endemic areas (4). Other differential diagnosis includes all other cardiac tumours and cysts, mediastinal tumour, a pericardial cyst.

Without prompt surgical treatment, rupture of the cyst or compression of vital structures may occur (3).

Echocardiography is sensitive for the diagnosis of cardiac hydatid cyst. Additional information about the accurate location of lesion and relation of it with other structures can be obtained by CT scan or MRI. Surgical excision is the preferred treatment (4).

### **Conclusion:-**

Cardiac hydatid cyst is a rare zoonotic disease. Although cardiac hydatid cysts can be fatal, they are rare and often asymptomatic in their early stages. High clinical suspicion is important for a correct diagnosis. Echocardiography, CT, and MRI are useful in the diagnosis and location of cardiac hydatid cysts. Surgical resection is the definitive mode of treatment and concurrent use of albendazole therapy typically yield excellent results.

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