Original Research Paper

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Cardiothoracis

CARDIAC ECHINOCOCCOSIS! STILL POSSIBLE IN INDIAN SCENARIO.

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ABSTRACT We present a rare collection of two cases- one with intraventricular and other with infected intrapericardial echinococcosis. Intra pericardial echinococcosis presented like chronic pericarditis, where as intra ventricular cardiac echinococcosis presented as Right Ventricular failure with NYHA (New York Heart association) class III symptoms. Intrapericardial hydatid approached through left anterolateral thoracotomy and intraventricular cardiac echinococcosis was approached through midline sternotomy and procedure was done on cardiopulmonary bypass. Post operative course uneventful.

KEYWORDS : Intra pericardial, Intraventricular, Echinococcosis

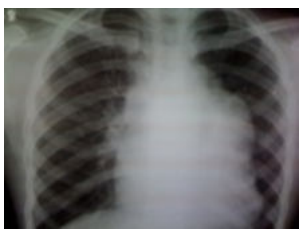
BACKGROUND

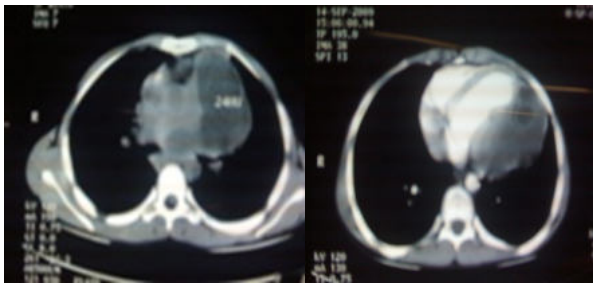
Hydatid disease is parasitic infection Caused by larva of echinococcus granulosus which is still endemic in sheep raising countries. Humans are intermediate carriers by feco oral contamination [1]. After entering into the portal and lymphatic circulation from intestine a few of these larvae may escape from the vascular beds of the liver and lungs and travel to the myocardium via the coronary circulation. Involvement of the heart can occur from the systemic or pulmonary circulation or as direct extension from adjacent structures.[2]

Case 1

13 Years old tribal boy presented with fever, class II symptoms of dyspnoea and recurrent respiratory infections of 2 months duration. All symptoms started suddenly and gradually progressive, clinical examinations revealed decreased intensity of heart sounds. Evaluated with chest x-ray Posterio anterior view, which is suggestive of increased cardio thoracic ratio and irregular heart borders. Complete blood picture showing raised white blood cell counts, raised ESR, ECG – sinus rhythm. On 2D ECHO there was 8X6cms sized large globular cyst compressing LV with cheesy echogenic material inside. CECT Thorax showing large lobulated non enhancing hypo dense cystic lesion with septations involving sub pericardial location of left ventricle with encasement of main pulmonary trunk indenting bilateral pulmonary arteries with differential attenuation of lungs.

Patient operated under general anaesthesia on double lumen tube underwent left anterolateral thoracotomy. Intra operative findings were thickened pericardium, large infected hydatid cyst, and multiple loculations containing purulent material with daughter cysts. All the infected content drained, daughter cysts evacuated, partial excision of pericardium was done and Cavity was deroofed. Patient recovered well and discharged on 5th post operative day on albendazole for 3 months.

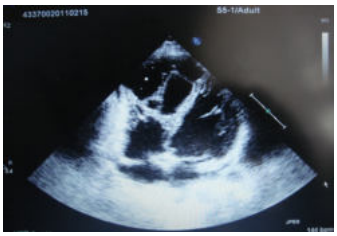


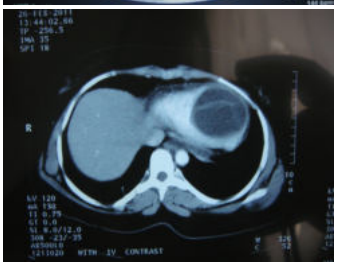


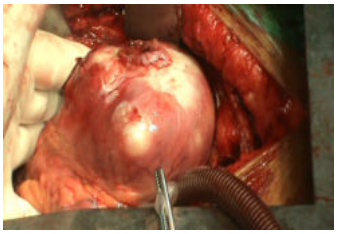
Case 2

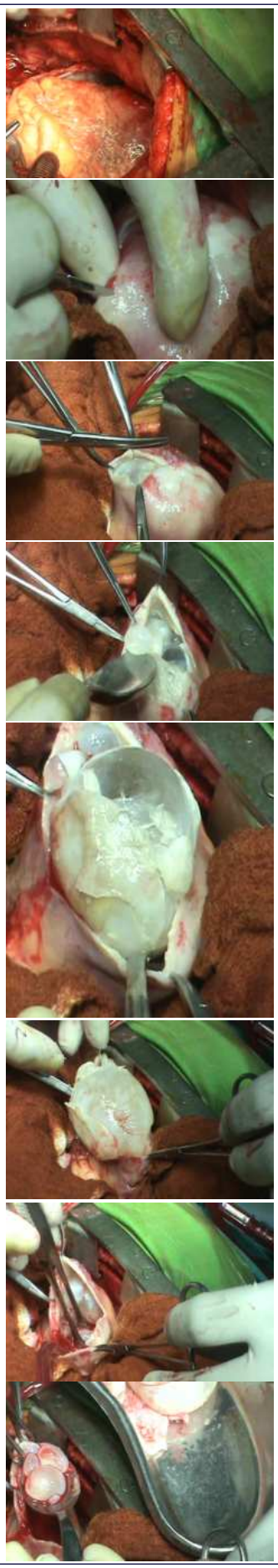
29 years female of tribal origin presented with RV failure NYHA class III symptoms of dyspnoea and chest pain. Chest X ray showing cardiomegaly, ECG – sinus rhythm, V3, V4 strain pattern. 2D Echo showing multiple cysts seen in inter ventricular septum obliterating both the ventricular cavities more on the right side. (Figure 1) No valvular pathology. Fair biventricular function. CT scan was showing intracardiac hydatid cysts possibly in Inter ventricular septum extending towards right ventricular cavity. (figure 2)

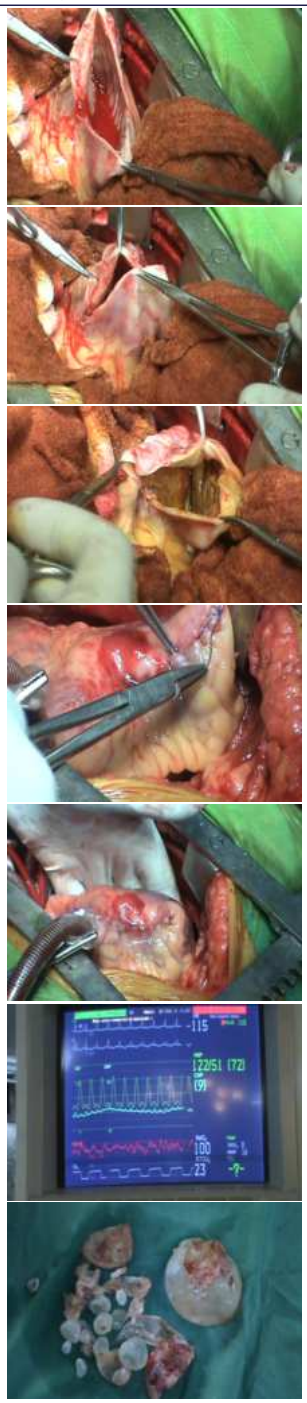
Patient was operated by midline sternotomy approach. Cardiopulmonary bypass was instituted by standard aortic and bicaval cannulation. Both aorta and pulmonary artery were cross clamped after Hyperkalemic cardioplegic arrest. Field was packed with povidone Iodine. Multiple cysts were seen in right ventricular free wall extending into inter ventricular groove. Epicardium incised and hydatid cysts with all daughter cysts excised. (Figure 3) Approximately 26 hydatid cysts were enucleated. Right ventricular wall was thinned out with intact endocardium. Residual cavity obliterated. Right ventricular wall closed with 2-0 prolene in 2 layers by continuous fashion. Patient came off cardiopulmonary bypass in normal sinus rhythm. Post operative recovery uneventful with Post operative 2D Echo showing fair LV function, mild RV dysfunction which recovered after 3 months.











DISCUSSION

Cardiac involvement of hydatid cysts is very rare, constituting only 0.5 – 2%[3].When this occurs, the left ventricle is the most frequently involved site (60%), followed by the right ventricle (15%), the interventricular septum (9%), the left atrium (8%), the right atrium (4%), and the interatrial septum (2%)[3,4].

Primary pericardial hydatid cysts are extremely rare, and they generally develop secondary to intrapericardial rupture of a myocardial cyst or to spillage of cysts' contents during surgical removal. Rupture is a serious complication of cardiac hydatid cysts. Intrapericardial rupture of a cardiac hydatid cyst occurs in about 10% of cases and can lead to acute pericarditis, which can eventually progress to constrictive pericarditis[3]. Cardiac hydatid cysts can mimic various cardiac diseases even when they are located in the pericardium.

Cysts in the ventricular walls grow toward either the epicardium or the endocardium. Subepicardial cysts grow more easily toward the

pericardial cavity and can attain large diameters; cysts in a subendocardial position have a higher potential for intracavitary growth.

Because of their slow growth (approximately 1 cm per year), cardiac hydatid cysts rarely present in early childhood [3]. Symptoms such as those associated with the compression of a coronary artery, with a disturbance in the valvular mechanisms (clinically simulating mitral, pulmonary, aortic, or tricuspid valve stenosis or regurgitation), or with outflow tract obstruction or a variety of conduction defects [6]. (caused by the involvement of the interventricular septum).

The clinical picture of a cardiac hydatid cyst depends on the age, size, location, and integrity of the cyst. The presenting clinical picture may vary from no symptoms to congestive heart failure or even sudden death [3]. It is estimated that 10% of patients remain asymptomatic for many years, although they are under the continuous threat of rupture. The most dangerous complication of heart echinococcosis is cyst perforation [5]. About 20% of fatal cases present with sudden death, having shown no previous signs or symptoms of cardiac echinococcosis. An anaphylactic reaction and profound circulatory collapse may follow intracavitary rupture.[7]

Treatment of choice even for asymptomatic cardiac hydatid cysts is surgical excision, which yields complete recovery and excellent prognosis [8]. Although superficially located cysts can successfully be removed with a beating-heart (off-pump) technique, excision under cardiopulmonary bypass has been considered the safest method, with the least risk of spillage of cyst contents during the procedure. It is advisable to place an additional filter on the venous side of the circuit to prevent the passage of hydatid particles to the pump, especially in rupture cases. As a rule, the heart should not be manipulated before the application of the cross-clamp [7]. In operations for cysts located in the right side of the heart, the pulmonary artery can be clamped to avoid pulmonary embolism [9]. Supplemental medical therapy with mebendazole or albendazole is recommended to reduce the risk of recurrence, especially in the event of intracardiac rupture. In order to exclude the possibility of recurrence due to inadvertent spillage or a small cyst not noticed at the time of the operation, serologic and echocardiography monitoring is recommended during the first 5 postoperative years[10].

CONCLUSION

In developing countries like India cardiac echinococcosis still considerable differential diagnosis especially in tribal origin patients with vague non specific cardiac complaints. And surgery is the treatment of choice even the patient is asymptomatic. Albendazole should be prescribed to all such patients for at least 3 months.

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