Radiology Forum

A Rare Case of Both Mediastinal and Pericardial Hydatid Cysts Presenting as Cardiomegaly

Vikas Kumar[1], Parveen Gulati[2], Shweta Anand[1], Subhadeep Saha[1], Amitesh Gupta[1] and Rupak Singla[1]

Department of Tuberculosis and Respiratory Diseases, National Institute of Tuberculosis and Respiratory Diseases[1], New Delhi and Dr Gulati Imaging Centre[2], Delhi, India

[Indian J Chest Dis Allied Sci 2019;61:87-89]

Clinical Summary

Hydatidosis remain the endemic disease in some regions of the world. The liver and the lungs are the most common sites in adults. Mediastinal with cardiac hydatid cysts are very rare and true incidence has not been described in the literature. A 25-year-old male, non-smoker, came with complaints of non-pleuritic left chest pain with palpitations for the last four months. Two-dimensional echocardiography was suggestive of multiple multiloculated cysts in the pericardium around the left and the right ventricles. Computed tomography and magnetic resonance imaging of the chest showed multiple multiloculated cystic lesions in peri-cardiac, pre-tracheal, pre-carinal, subcarinal and pre-vascular area. Hydatid serology was positive. Further work-up lead us to a diagnosis of mediastinal and pericardial hydatid cysts.

Investigations

A 25-year-old non-smoker male admitted in our hospital with complaints of left chest pain with palpitations for the last four months. There was no history of syncopal attacks, swelling bilateral legs, shortness of breath and cough. There was no history of anti-tuberculosis treatment. Patient had exposure to pets for 20 years along with a history of ground-water usage for drinking.

On examination, patient was afebrile. Respiratory system examination was within normal limits. S1 and S2 were normal without any muffled heart sounds and no murmur was heard. Chest radiograph (postero-anterior view) (Figure 1A) showed cardiomegaly with homogeneous opacity in the left para cardiac area with blunting of right costophrenic angle and lateral view (Figure 1B) showed non-homogeneous opacity in the entire middle mediastinum.

The differential diagnosis of encysted pericardial effusion, pulmonary artery aneurysm, valvular heart diseases, benign tumours of heart and pericardial cysts were made.

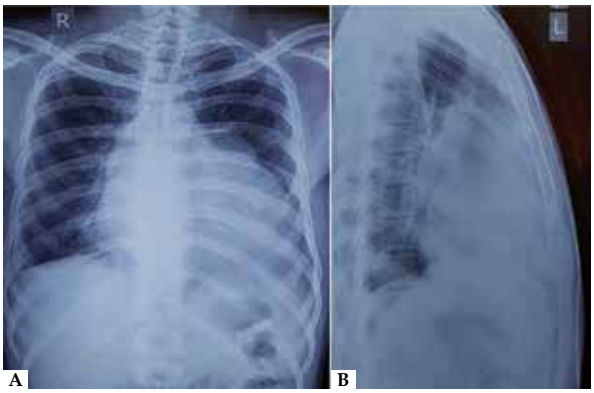

Figure 1. (A) Chest radiograph (postero-anterior view) suggestive of cardiomegaly with non-homogenous opacity in the left para-cardiac area and (B) (left lateral view) suggestive of non-homogeneous opacity in the middle mediastinum.

Electrocardiogram was suggestive of sinus tachycardia, right axis deviation and inverted T-wave in V5-V6. Two-dimensional echocardiography revealed multiple multiloculated cysts in the pericardium around the left ventricle and the right ventricles without haemodynamic compression of the chamber and without any regional wall motion abnormality (Figure 2). Complete blood count, liver and kidney functions tests were within normal limits.

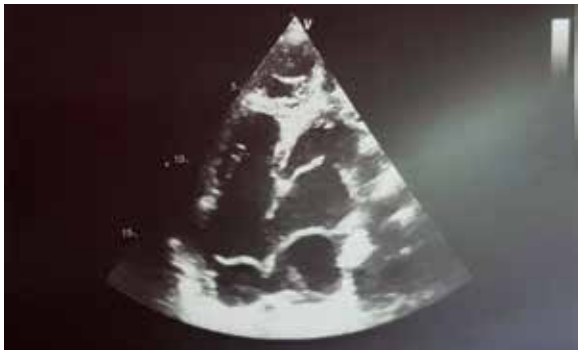

Figure 2. Two-dimensional echocardiography showing multiple multiloculated cysts in the pericardium around the left ventricle and the right ventricle.

[Received: October 04, 2018; accepted after revision: March 11, 2019]

Correspondence and reprint requests: Dr Rupak Singla, Head, Department of TB and Respiratory Diseases, National Institute of Tuberculosis and Respiratory Diseases, Sri Aurobindo Marg, New Delhi-110 030, India; E-mail: drrupaksingla@yahoo.com

Contrast enhanced computed tomography (CECT) of the chest showed multiple cysts adjacent to the great vessels and in the cardia region (Figure 3).

Magnetic resonance imaging of the chest (Figure 4) showed multiple multi-loculated cystic lesions in peri-cardiac, pre-tracheal, pre-carinal, sub-carinal and pre-vascular area with thin hypointense septae within the cysts indenting the lung parenchyma and mediastinal vessels, suggestive of multiple hydatid cysts. Ultrasonography of abdomen revealed no hydatid cysts in the liver.

Serology of the hydatid cyst was positive, and therefore, patient was referred to cardiothoracic surgeon for further management.

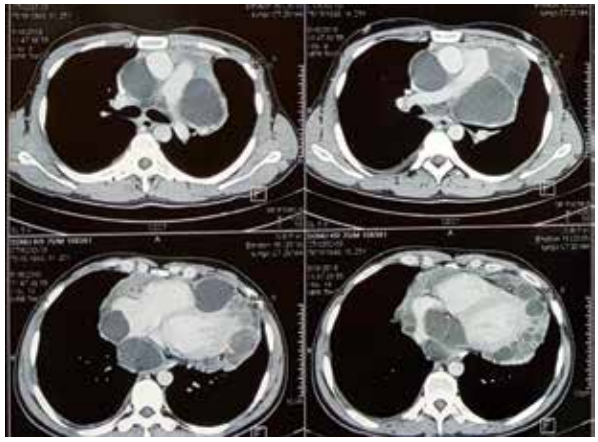

Figure 3. Contrast enhanced computed tomography of the chest showing multiple cystic lesions adjacent to the pulmonary trunk, aorta and pericardiac region with extrinsic indentation over the cardiac chambers.

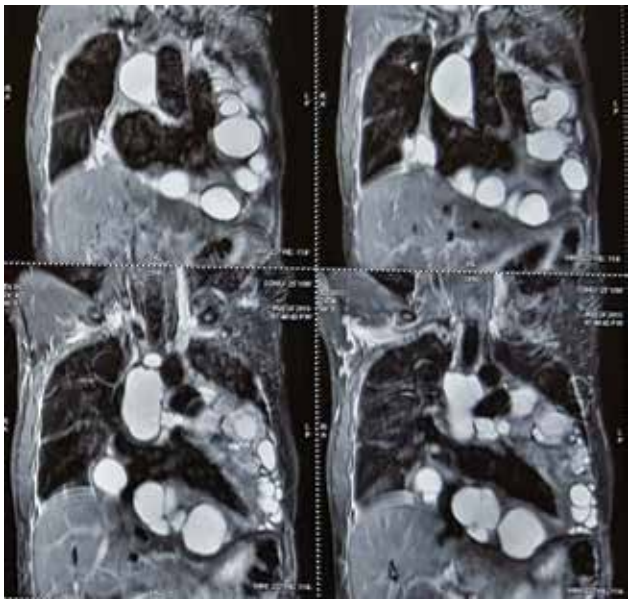

Figure 4. Magnetic resonance imaging of chest showing multiple cystic lesions in peri-cardiac, pre-carinal, sub-carinal and pre-vascular areas indenting the adjacent lung parenchyma and cardiac chambers.

Diagnosis: *Mediastinal and pericardial hydatid cysts*

Discussion

Hydatidosis remains the endemic disease in sub-tropical and tropical regions of the world. It is due to the human's accidental infestation by the larval form of the parasite. People are infected with the intermediate stage of the parasite by ingesting water or food contaminated with eggs or by direct contact with infected dogs. The liver and the lungs are the most commonly affected sites in the adults.[1]

Several cases have been reported regarding the presentation of hydatid cysts in the mediastinum. Mediastinal echinococcosis is neither clinically nor radiologically distinguishable from other mediastinal cystic lesions. Among intra-thoracic hydatid cysts, the incidence of mediastinal echinococcosis is about 0.1% to 0.5%.[2,3] Posterior mediastinal or para-vertebral involvement of mediastinal hydatid cysts are more common (55%), but about 36% of the cysts are located in the anterior mediastinum.[2] Cardiac hydatid cysts are rare and represent only 0.5% to 2% of cases of systemic echinococcal infection.[4,5] Their most common location is in the left ventricle (50% - 70% of cases), followed by atria and the free wall of the right ventricle (30% of cases), the pericardium (15% - 25% of cases), and the interventricular septum (5% - 15% of cases).[6-8] *To the best of our knowledge*, incidence of both mediastinal with cardiac hydatid cyst is rare and not described.

The hydatid cysts remain mostly asymptomatic and as these grow, various symptoms arise. Compression symptoms in the mediastinum may arise as well as due to compression of pericardium; arrhythmias and chest pain may occur. Our patient presented with the symptoms of palpitations and diffuse chest pain. Two-dimensional echocardiography demonstrated multiloculated cysts in the pericardium. Magnetic resonance imaging may be done for better characterisation of cystic lesions and good delineation of anatomical structures for the ease of surgical decision pre-operatively.[9] Serological studies are not found to be sensitive for the diagnosis,[10] however in our case, hydatid serology was positive.

The gold standard therapy is radical removal of the germinative membrane and pericyst. When the localisation of the cysts and invasion to vital structures prevent the total excision, partial peri cystectomy and removal of germinative membrane is suggested.[2] Post-operative albendazole therapy is given as adjunctive therapy to diminish recurrence.[11]

Many cases of isolated pericardial and mediastinal hydatid cysts have been reported in the past. But here, we have reported the first case in the literature where both mediastinal and pericardial hydatid cysts were found simultaneously in the same patient presenting as cardiomegaly.

References

1. Moro P, Schantz PM. Echinococcosis: a review. *Int J Infect Dis* 2009;13:125–33.
2. Rakower J, Milwidsky H. Primary mediastinal echinococcosis. *Am J Med* 1960;29:73–83.
3. Shehatha J, Alizzi A, Alward M, Konstantinov I. Thoracic hydatid disease: a review of 763 cases. *Heart Lung Circ* 2008;17:502–4.
4. Kudaiberdiev T, Djoshibaev S, Yankovskaya L, Djumanazarov A. Multiple hydatid cysts of epicardium and pericardium. *Int J Cardiol* 2001;81:265–7.
5. Perez-Gomez F, Duran H, Tamames S, Perrote J, Blanes A. Cardiac echinococcosis: clinical picture and complications. *Br Heart J* 1973;35:1326–31.
6. Urbanyi B, Rieckmann C, Hellberg K, Krakau M, Liebau G, Mayer A, *et al.* Myocardial echinococcosis with perforation into the pericardium. *J Cardiovasc Surg* 1991;32:534–8.
7. Oliver JM, Sotillo JF, Dominguez FJ, de Sa EL, Calvo L, Salvador A, *et al.* Two-dimensional echocardiographic features of echinococcosis of the heart and great blood vessels. *Circulation* 1988;78:327–37.
8. Beggs I. The radiology of hydatid disease. *Am J Roentgenol* 1985;145:639–48.
9. Vural M, Sayın B, Pasaoglu L, Koparal S, Elverici E, Dede D. Isolated pericardial hydatid cyst in an asymptomatic patient: a remark on its radiologic diagnosis. *Clin Imaging* 2007;31:37–9.
10. Sinha P, Jaipuria N, Avasthey P. Intracardiac hydatid cyst and sudden death in a child. *Int J Cardiol* 1995;51:293–5.
11. Mawhorter S, Temeck B, Chang R, Pass H, Nash T. Nonsurgical therapy for pulmonary hydatid cyst disease. *Chest* 1997;112:1432–6.