Hydatid pulmonary embolism is a complication of cardiac hydatid cyst rupture that generally occurs after iatrogenic or spontaneous rupture of the right ventricular or right atrial hydatid cyst or from systemic circulation [2-5]. Before the introduction of cross-sectional imaging techniques the diagnosis was based on clinical and laboratory findings. Echocardiography is a noninvasive effective tool for the diagnosis of the CH. But it is not always suitable for the detection of pulmonary cysts. In this condition Computed Tomography (CT) or Magnetic Resonance Imaging (MRI) facilitates the definite diagnosis [1,6-8]. We present a patient presenting with pulmonary hypertension due to pulmonary embolism of the CH that was detected with CT.

Case Report

13-year-old girl admitted to the pediatric cardiology outpatient clinic complaining of dyspnea related with effort. Two years ago she was operated from right ventricular hydatid cyst.

On physical examination, the vital findings were as follows: blood pressure was 90/60 mmHg; cardiac rate was 64 beats/min, body temperature was 36°C and respiration was 24 breaths/min. On auscultation, there was 2/4 systolic ejection murmurs on mezocardiac area.

There was an increase in eosinophil count of 1100/mm³ (over 5%) in laboratory tests. Serologic tests of hydatid cyst were positive. Other parameters were normal. Spirometric examination revealed FVC: 85%, FEV1: 83%, FEV1/FVC: 100%, PEF: 85%.

Echocardiography was performed to demonstrate a residual cyst but no cardiac lesion was seen. Right ventricular dilatation and pulmonary hypertension were detected. Pulmonary artery pressure was 45-50 mmHg. CT examination was performed which revealed total occlusion of the right upper lobe pulmonary artery. It was filled with a hypointense cystic material, which enhanced peripherally after contrast injection (Figure 1).

Moreover multiple cystic lesions in the pulmonary arteries in different locations were seen. The lesions were unevenly distributed and they were predominantly in the periphery of the lung. The lesions were also seen in pulmonary veins (Figure 2). A cyst was also seen at the level of right upper lobe pulmonary vein draining into the left atrium. With these findings the patient was diagnosed as pulmonary embolism of CH. Since hydatid disease was disseminated surgery could not be performed and Albendazole treatment was started.
thromboembolism and primary arterial tumors from differential diagnosis list. The acute thromboembolic disease was excluded clinically, because of the lack of predisposing conditions, and no history of deep vein thrombosis in the lower legs [3]. The clinic manifestation of primary arterial tumor is more aggressive than our case [9]. Thus, the clinical presentation may be misleading and confused with other more frequent causes of pulmonary embolization; however, a combination of the clinical and radiological features and the medical history can lead to the correct diagnosis [1]. Once diagnosis has been established CT or MRI is effective for follow-up to search for recurrences or the formation of pseudo aneurysms [2-3].

Although surgery combined with medical treatment may improve the prognosis, the treatment of this rare presentation should be individualized [2,4]. Surgical intervention can be complicated by rupture of the cyst. This rupture can cause the dissemination, anaphylactic shock, embolism, and pseudo aneurysm formation [4]. Albendazole is widely used and limited success has been reported. Rupture of a hydatid cyst of the lung during and after the cessation of albendazole treatment has been reported [10]. Therefore surgery has been advocated for intraarterial hydatid cysts. Our patient could not undergo surgery due to disseminated hydatid cyst, therefore only Albendazole treatment was given. In cases of diffuse and severe involvement of the pulmonary arteries like presented here, mortality is high [4].

Conclusion

Even it is rare, cardiac hydatidosis should be kept in mind in the assessment of pulmonary hypertension secondary to embolism. Cardiac evaluation should be included in the imaging procedure.

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Discussion

Cardiac cysts constitute 0.02-2% of all hydatidosis cases [1]. Coronary circulation brings the larva to the heart. The mostly involved sites are left ventricle (60%), right ventricle (15%) and interventricular septum (9%) respectively [5]. Rupture of a right ventricular cyst may result in pulmonary embolism, which is a rare cause of PAH. The embolism can occur spontaneously or during surgical removal of the hydatid cyst [2-5]. Direct spread of a visceral cyst to the pulmonary arteries via inferior vena cava and the right cardiac chambers is another possibility. The embryos reaching the lung change into small arteries via inferior vena cava and the right cardiac chambers is another possibility. The embryos reaching the lung change into small

Before the advent of CT and MRI clinical and laboratory tests were used to diagnose hydatid disease. Definite diagnosis using ECG and chest X-ray was not possible [6]. The Casoni skin test, Weinberg test, or interruption of blood circulation may cause symptoms in these arteries via inferior vena cava and the right cardiac chambers is another possibility. The embryos reaching the lung change into small

Hypodense lesions were also seen in pulmonary veins on Coronal reformatted image (asterix).