Huge Intramyocardial Echinococcal Cyst Resulting in a Significant Left Ventricular Cavity Obliteration Evaluated by Real-Time 3-Dimensional Transesophageal Echocardiography and Multidetector Computed Tomography Before and After Complete Excision

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A 13-year-old girl was referred to our hospital with symptoms of dyspnea, palpitations, and faintness. Physical examination was normal and chest x-ray (Figure 1) showed marked cardiomegaly, and an ECG showed T-wave inversion in the D1 and aVL leads. However, transthoracic echocardiography disclosed an echo-free and cystic structure 6 cm in diameter located within the posterolateral myocardial wall segments of the left ventricle and resulting in significant cavity obliteration (Figure 2). Two-dimensional transesophageal echocardiography (TEE; Movie I in the online-only Data Supplement) and real-time 3-dimensional TEE (Movie II in the online-only Data Supplement) confirmed the spherical appearance and thick walls of this huge intramyocardial structure and disclosed suspected echogenic materials within the cyst cavity consistent with active *Echinococcus granulosus*. Findings identical to those on TEE were also seen on cardiac multidetector (64-slice) computed tomography (Figure 3), but abdominal and cranial tomographic screening excluded any possible extracardiac echinococcal invasion. Whole-blood tests showed no eosinophilia (1.2%), and an *Echinococcus* hemaglutination test was positive at 1/32 titration (borderline significance). No arrhythmia or intracardiac conduction abnormality was observed on 24-hour rhythm Holter recordings. Albendazole 15 mg/kg·d divided into 2 doses was started, and after the 11-day pretreatment period, surgical excision of the intramural cyst was performed after aspiration of its liquid material and injection of 3% saline into the cyst. Macroscopic (Figure 4) and pathological (Figure 5) evaluation of the cyst confirmed the active echinococcosis. Postoperative transthoracic echocardiography, 2-dimensional TEE (Movie III in the online-only Data Supplement), real-time 3-dimensional TEE, and multidetector computed tomography showed no left ventricular cavity compression, but an intramural echo-free cavity at the location of the excised cyst without any connection to the left ventricular cavity or pericardial space. A second surgical intervention was not considered, and the patient was discharged after 7-day asymptomatic postoperative period under treatment with albendazole. The patient was free of any symptoms during the 6 months of follow-up.

The documented incidence of the cardiac involvement in echinococcosis varies between 0.02% to 2%, and left ventricular cavity is the most frequent location (55%–75%), followed by the right ventricle (15%–18%), interventricular septum (5%–9%), right atrium (4%), and interatrial septum (2%).1,2 Spontaneous rupture of the cyst is the most frequent (24%–64%) and potentially lethal complication.3 Surgical mortality of cyst excision is <1%.4 This case of cardiac echinococcosis was presented because of the enormous size of the cyst and the intramyocardial location responsible for left ventricular cavity obliteration evaluated by multimodality imaging, including real-time 3-dimensional TEE and multidetector computed tomography before and after complete excision of cyst.

Disclosures

None.

References


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Figure 1. Chest x-ray showed marked cardiomegaly.

Figure 2. A huge cystic intramural structure consistent with echinococcosis resulting in significant cavity obliteration on posterolateral left ventricular wall segments. IVS indicates interventricular septum; Ao, aorta; LA, left atrium; and PW, posterior wall.

Figure 3. Multidetector computed tomography showing findings of an intramyocardial large cyst and left ventricular cavity compression identical to those on transesophageal echocardiography.

Figure 4. Macroscopic appearance of the excised cyst consistent with a hydatid cyst.

Figure 5. Microscopic appearance of the excised cyst consistent with a hydatid cyst.
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