Cardiac hydatid disease is uncommon, occurring in 0.2% to 2% of patients with echinococcal disease. A 67-year-old farmer presented with fatigue, dyspnea, and palpitations. He had no previous history of heart disease. Cardiovascular examination, electrocardiography, chest X-ray, hematologic and biochemical tests were normal. Parasitic serology was negative. Transthoracic echocardiography showed a cyst, measuring 3.7x3.5 cm, in the posteroapical region of the left ventricle. Magnetic resonance imaging confirmed the cardiac cyst and showed another cyst in the liver. The patient underwent surgery through median sternotomy and the cyst was removed. Pathologic examination confirmed the diagnosis of echinococcosis. Postoperatively, the patient was treated with albendazole (800 mg/day) for four weeks. At three-month follow-up, the patient was asymptomatic, with improved functional capacity. Two-dimensional transthoracic echocardiography showed no signs of cystic formation.

Key words: Cardiomyopathies; echinococcosis/surgery; hydatid cyst.
CASE REPORT
A 67-year-old farmer complained of fatigue, dyspnea, and palpitations. He had no previous history of heart disease. Cardiovascular examination revealed no abnormal findings. His electrocardiogram and chest radiograph, and hematologic and biochemical tests were normal. Parasitic serology was negative. Transthoracic two-dimensional echocardiography showed a cyst, measuring 3.7x3.5 cm, localized in the posteroapical region of the left ventricle (Fig. 1a). Magnetic resonance imaging confirmed the cardiac cyst and showed another cyst in the liver (Fig. 1b). Transesophageal echocardiography showed an ovoid cavitated mass with internal areas of calcification and confirmed the absence of additional cysts in the cardiac chambers. Selective coronary angiography revealed no significant lesions. The patient underwent surgery through median sternotomy. Standard cardiopulmonary bypass techniques were used with moderate hypothermia and cardioplegic arrest. The cyst was reached via a left ventriculotomy and removed (Fig. 2). Hypertonic saline (10% NaCl) was used as a scolicidal agent. Pathologic examination confirmed the diagnosis of echinococcosis. The patient was discharged on the sixth postoperative day and treated with albendazole (800 mg/day for 4 weeks). At three-month follow-up, the patient was asymptomatic, with improved functional capacity. Two-dimensional transthoracic echocardiography showed no signs of cystic formation.

DISCUSSION
Cardiac hydatid disease is very rare, occurring in approximately 0.2% to 2% of patients with hydatid disease. Cardiac hydatid cysts develop in many parts of the heart such as the left ventricle (55-71%), right ventricle (13-18%), interventricular septum (5-13%), right atrium (2-4%), and left atrium (8%). Several hypotheses have been proposed for the predilection for left ventricular location, including dominance of the left coronary artery, better conditions of the left ventricular myocardial mass for parasitic development, and different pressure regimens.

Clinical manifestations of cardiac cysts are broad, ranging from asymptomatic patients to sudden death. Symptoms depend on the location, size, and integrity of the cyst. Embolization, anaphylactic shock, and cardiac tamponade are the most serious and often lethal complications. Cysts have the potential for intracardiac or intrapericardial ruptures. Although hydatid cysts are more frequently located in the left ventricle, right ventricular hydatid cysts have a higher propensity to rupture.

Other manifestations of cardiac echinococcosis may result from mechanical compression exerted by the cyst on neighboring tissues, including myocardial
ischemia; disturbances of the cardiac rhythm; and valve malfunction. Three main symptoms that suggest the presence of an uncomplicated cyst are chest pain, dyspnea, and palpitations. With chest pain, the severity and the site are variable, although it is often a permanent or recurrent precordial pain. Sometimes the pain resembles angina pectoris suggesting coronary disease, or myocardial infarction when it is severe. These palpitations may arise from ventricular extrasystoles, paroxysmal ventricular tachycardia, and conduction disorders that may lead to a complete atrioventricular block with bradycardia and Adams-Stokes attack, which are typical of the septal location of a cyst.

The diagnosis of a cardiac cyst is probable in patients with a history of echinococcosis in another organ. In the absence of any diagnostic sign, routine investigations by specific cardiac imaging procedures are necessary.

Chest radiographic findings are usually reliable. The chest X-ray may reveal localized or global deformations and calcifications of the cardiac outline. The typical image is a calcified, well-limited, and sessile lobular mass with clear edges. Non-specific electrocardiographic abnormalities such as T-wave inversion, ST-depression, premature ventricular beats, incomplete or complete bundle branch block, and supraventricular tachycardia are present in more than 80% of patients. In older patients, it is often more difficult to establish the differential diagnosis between acute coronary disease and cardiac hydatid cyst disease. In young patients, especially in the presence of a Q wave of necrosis the diagnosis of a cardiac hydatid cyst should be considered. This Q wave is due to the electrical window formed by a transmural cyst. Conduction disorders may also be associated with a cardiac hydatid cyst.

Hematology may reveal eosinophilia of a varying degree. Serological tests including indirect hemagglutination and latex agglutination tests are useful if positive, but many cyst carriers will not develop an immune response. Diagnosis of cardiac hydatid cysts is often made using transthoracic echocardiography. Transesophageal echocardiography provides details of the cyst. Computed tomography and magnetic resonance imaging may provide valuable information, but two-dimensional echocardiography is thought to be the best choice.

Surgical excision is the definitive method of treatment for cardiac hydatid cysts, even for asymptomatic patients in order to prevent rupture. However, surgical intervention may result in serious complications. Whether the treatment should be medical or surgical remains controversial. It is important to consider the localization, number, and size of the cysts in choosing the treatment method. Medical therapy with albendazole results in disappearance of extracardiac hydatid cysts in up to 48%, and reduction in size in 24%. However, the specific efficacy of albendazole against cardiac hydatid cysts has not been established. Anthelmintics have been recommended in inoperable cases or as adjuvant therapy when there is risk for dissemination.

Surgical approach is not recommended for pericardial hydatid cysts. Percutaneous aspiration and instillation of ethanol or silver nitrate after pretreatment with albendazole (800 mg/day for 4 weeks) is safe and effective.

REFERENCES