Cardiovasc Surg Int 2015;2(2):30-32
http://dx.doi.org/DOI: 10.5606/e-cvsi.2015.299
www.e-cvsi.org

Cardiovascular Surgery and Interventions

Case Report Open Access

An asymptomatic huge calcified intramyocardial hydatid cyst: a case report

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Received: November 13, 2014 ***Accepted:*** April 18, 2015 ***Published online:*** August 03, 2015

ABSTRACT

Hydatid cyst disease is rarely asymptomatic depending on its location. A 37-year-old man presented asymptomatically and was diagnosed with a hydatid cyst incidentally during regular check-up. Echocardiography and cardiac magnetic resonance angiography images demonstrated a calcified solid cystic lesion (90x60 mm) on the apicoposterolateral region of the left ventricle. The cyst was localized inside the myocardial fibers. The left ventricular cavity size was reduced due to the bulging of the mass. The cyst was evacuated with open heart surgery and the large calcified cavity was closed carefully.

Keywords: Cardiac hydatid cyst; *echinococcosis*; myocardial calcification.

Hydatid cyst is an endemic infestation disease in various regions in the world. *Echinococcus granulosus*, the causative agent of cystic hydatid disease, usually (60-70%) reaches the liver via intestinal veins or lymphatics. If embryos bypass the liver and the lung, they reach the systemic circulation and may affect any organ of the body. Cardiac involvement, which is rare, is between 0.02% and 2% of all hydatid diseases.[1,2]

The embryos can reach the myocardium via coronary circulation from the left side of the heart. The most common location of cardiac hydatid cysts are the left ventricle, interventricular septum, and right ventricle.[3-5] Cardiac symptoms (mostly chest pain, shoulder pain, dyspnea, and persistent cough) usually depend on the localization and size of the cyst.

The cyst may also grow between cardiac fibers without causing any symptoms. If it reaches a reasonable size, fever, palpitation, arrhythmias, and heart failure may develop. The most critical complication of a cardiac cyst is perforation with a high incidence ranging between 25% and 40%.[6] After perforation of the cyst, 75% of patients die from septic shock or embolic complications.[6]

CASE REPORT

A 37-year-old man presented with cardiac murmur without any clinical sign. He was asymptomatic with a non-specific medical history. Physical examination revealed 3/6 systolic murmur at the second right intercostal parasternal space.

Transthoracic echocardiographic examination revealed that an intramyocardial mass involved the inferior, posterior, and free lateral walls of the left ventricle, and severe inferoposterolateral myocardial hypertrophy. The nature of the mass was solid and there were necrotic tissues inside the mass. The left ventricular end-systolic and end-diastolic diameters were reduced. The rest of the echocardiographic variables were unremarkable.

Teleradiography showed an enlarged mediastinum and displaced cardiac apex superiorly and to the left side of the chest. Chest X-ray also revealed a calcified myocardial mass in the apical part of the heart (Figure 1). A smooth-surfaced calcified cystic mass of 90x60 mm at the left ventricular lateral wall was also seen on cardiac magnetic resonance angiography. The mass was localized inside the myocardial fibers. There was no contrast intake inside the mass; the left ventricular volume was severely decreased due to bulging of the mass (Figure 2). This huge mass was suspected for malignancy.

There was also an 18 mm diameter calcified cystic mass in the liver. No other cyst was detected in the body of the patient. His blood serology test results were negative. Based on these findings, the patient underwent open heart surgery.

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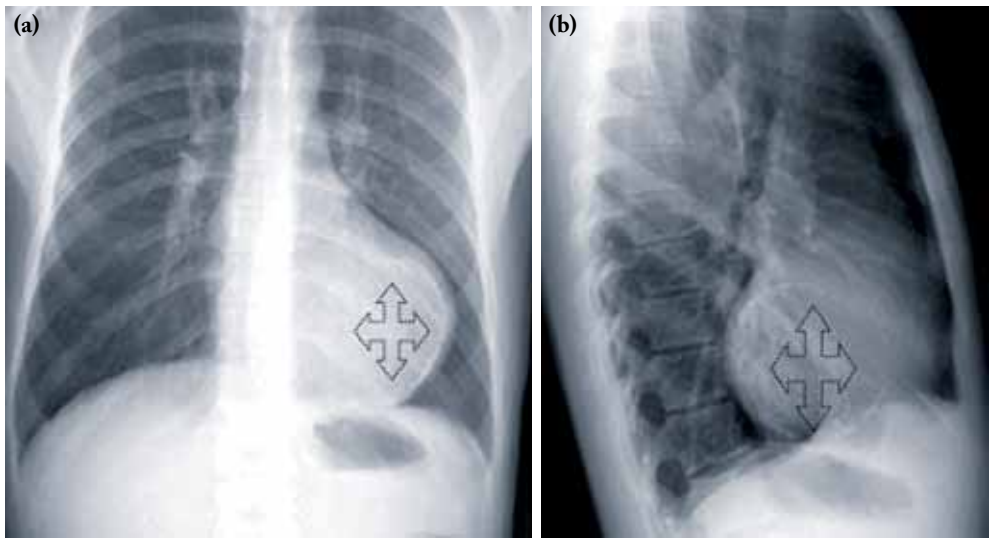

Figure 1. Preoperative X-ray of thoraces. **(a)** Anteroposterior, **(b)** left lateral X-ray images of the patient. The calcified borders of the cyst can be seen in apical part of the heart (two headed arrows).

The operation was performed through median sternotomy. Cardiopulmonary bypass through the aorto-bicaval cannulation was instituted. Cardiac arrest was induced by administration of intermittent cold blood cardioplegia. Systemic and topical cooling with cold saline slush were also performed. The mass was located at the apicoposterolateral wall of the heart. The cyst was opened by performing an incision into the apical region of the heart. 300 mL gel consistency, white necrotic tissue, and germinative membrane were evacuated. Samples were taken for pathological examination and culture inoculation. The cavity was washed thoroughly with 20% hypertonic saline solution and a 1% iodine solution. There was no communication with the ventricular cavity. A crater 90 mm in diameter was formed due to the calcified nature of the wall of the cavity (Figure 3). Its diameter and calcified wall were not convenient to capitonnage or primer closure. Therefore, the cavity was filled with three pieces of gelatin sponge (Clinisponge®; Yücel Medikal Ltd. Şti. Esenyurt, İstanbul, Turkey). Then, we used a Teflon patch (felt) and sutured the free edges of the cavity. The patient had an uneventful recovery (Figure 4).

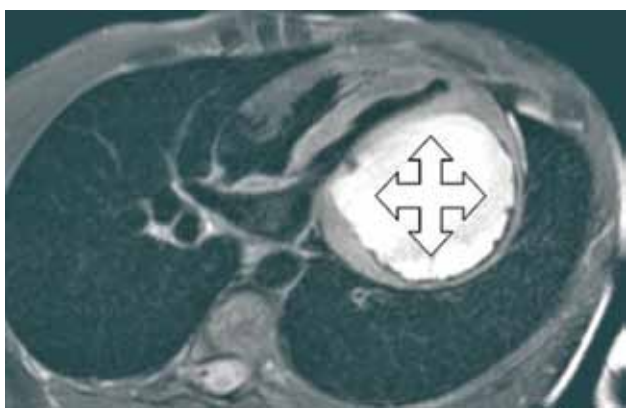

Figure 2. Cardiac magnetic resonance angiography image of the mass (two headed arrows).

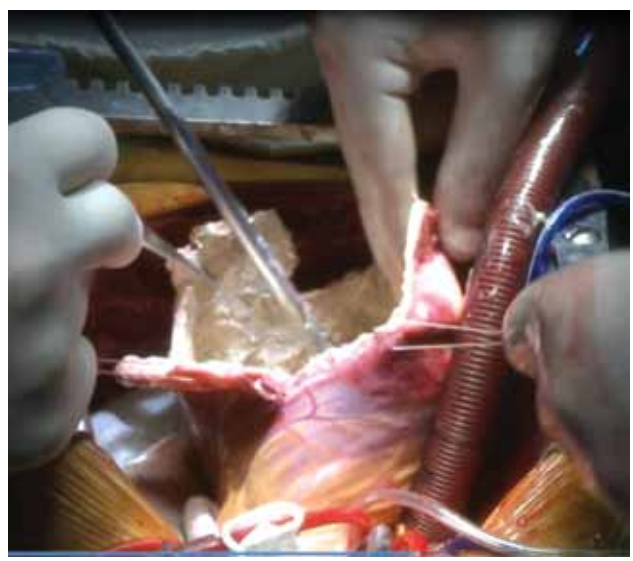

Figure 3. The crater of the huge cyst. The cyst was not connected with the left ventricular cavity.

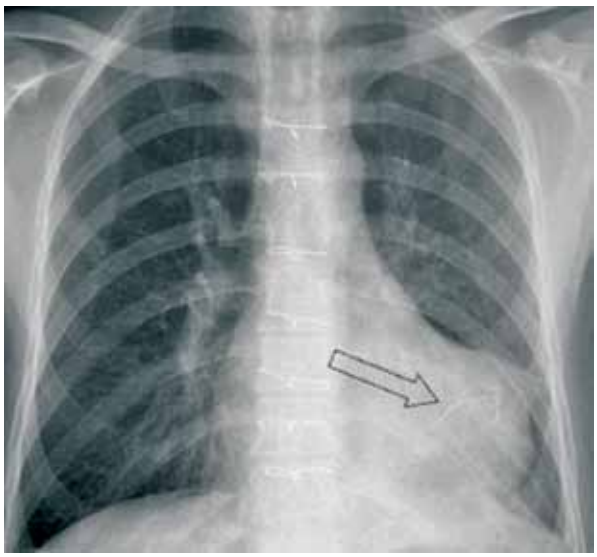

Figure 4. Postoperative X-ray. The calcified border of the cyst can be seen (arrow).

Gross and microscopic pathological examination confirmed the diagnosis of germinative membrane. Preoperative albendazole treatment (10 mg/kg/day) was continued for four weeks after surgery.

DISCUSSION

Cardiac hydatid cysts are often asymptomatic in the early stages. Our case had a 90x60 mm intramyocardial cyst and was surprisingly asymptomatic and diagnosed incidentally during the check-up. During surgery, we observed that the cyst was localized between the myocardial fibers and half of the left ventricular wall was pushed to the free edges of the mass.

Ideally, an echinococcal cyst should be aspirated, evacuated, and germinative membrane should be removed. Then, the remaining capsule can be closed with capitonnage technique.[5] However, in our case, the cyst was not alive; it did not contain any fluid inside the cyst. The content of the globe was necrotic, like a gel consistency. The borders of the globe were calcified. The wide base of the cyst was consisted from a tiny wall of the left ventricle. Removing of this calcified wall would severely reduce the ventricle volume due to the huge volume of the cyst. The cavity was not able to be closed with capitonnage technique (Figure 3). As a result, we filled the cavity with pieces of absorbable gelatin sponge to support cardiac geometry and reduce the risk of rupture from the base of the cavity. The patient recovered uneventfully and is still under follow-up.

Conclusion

During surgical excision of a huge, calcified, intramyocardial cardiac cyst hydatid with a wide base, left ventricular muscle mass should be preserved to avoid irreversible intraoperative left ventricular dysfunction. Therefore, the cavity of cyst after evacuation can be filled with gelatin sponge instead of excision to support left ventricular free wall.

Acknowledgements

We thank to Betül Doğan who is a college student for collecting data's and arranging the images of the case.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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