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Medical Imagery

# A large cardiac hydatid cyst in the interventricular septum: A case report

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ABSTRACT

Isolated cardiac location is an uncommon presentation of echinococcosis (0.5-2%), and involvement of the interventricular septum is even rarer. It may lead to various complications because of rupture and embolization. We report the case of a 26 - year- old man who was diagnosed to have a large interventricular hydatid cyst complicated by both cerebral and coronary embolism. Presentation, management and follow-up of the patient is discussed. This case is of particular interest because of the rarity of septal localization of a hydatid cyst, and the conflict between the severity of the complications that occurred and the absence of correlated symptoms.


## Case report

A 26-year-old smoking man with no previous known medical conditions was admitted for chest pain and asthenia. Physical examination revealed apyrexia and hemiparesis, cardio-pulmonary auscultation was normal. Electrocardiography showed non-persistent ST segment elevation in leads D II, D III, AVF, DI, AVL, V7-8-9 and ST segment depression in leads V1 through V4. Troponin level was normal. Frontal chest X-ray showed no lung parenchymal abnormality, heart shadow was normal. Transthoracic echocardiography revealed a large cyst measuring 4.8 cm × 4.9 cm in the middle part of the inter ventricular septum with a thin curvilinear echogenic line visualized within the cyst that moved synchronously with cardiac cycle suggesting a CE3a echinococcal cyst (WHO Informal Working Group, 2003) (Figure 1-A). The MRI showed a mass that had the characteristic signal intensity of a cystic lesion and typical low signal −intensity rim from the cystic wall and membrane detachment (Figure 1-B). Initial cerebral Computed tomography (CT) was without abnormality. Forty-eight hours later, our patient developed a fever, headache, vomit and seizures, cerebral CT showed two hematomas, a 25*15 mm cerebellar haematoma, and a second on the left parietal area that measured 31*33 mm. Thoracic-abdominal CT revealed focal splenic infarction and no cysts were seen in the liver, kidney or spleen. Coronary arteriography was normal. In laboratory tests: eosinophils count was normal and serologic test results for hydatid cyst (ELISA) were positive. Albendazole was started to allow preoperative sterilization of the cyst and taken for 3 months. Evolution was marked by the recovery of a normal motricity and the resorption of cerebral hematomas. Surgery was performed: 200 ml of hypertonic solution of 20% NaCl was introduced into cystic sac, and cystic content was aspirated carefully draining the viscous fluid. Then, cystectomy was performed. (Figure 1-C,D) The postoperative period was uneventful. Eight months after the surgery, the patient was in good clinical conditio..

## Discussion

*Echinococcus granulosus* is a helminth parasite, which causes a zoonotic disease known as echinococcosis or hydatid disease.

Within the fertile cysts are the protoscoleces derived from the germinal layer, which if ingested by a dog evaginate and develop into worms in the small intestine. Humans act as an intermediate accidental host. Echinococcus is a parasitic disease that occurs in humans in endemic regions of the world and is caused by the larval stage of Echinococcosis granulose, E. multilocularis or E. voceli.

Cardiac hydatid cysts are very uncommon, found in fewer than 2% of cases of hydatidosis (Dighiero et al., 1958). The most common cardiac locations are the left ventricular wall (60%) followed by the right ventricle (10%), pericardium (7%), left atrium (6-8%), right atrium (4%), and the interventricular septum (4%). In 50% of such cardiac cases, there is multiple organ inclusion (Eckert and Deplazes, 2004). Persons with a cardiac hydatid cyst may be asymptomatic. In other patients, symptoms may develop because of the cyst's compression of a coronary artery or conduction system. Cardiac hydatid cysts may lead to serious complications

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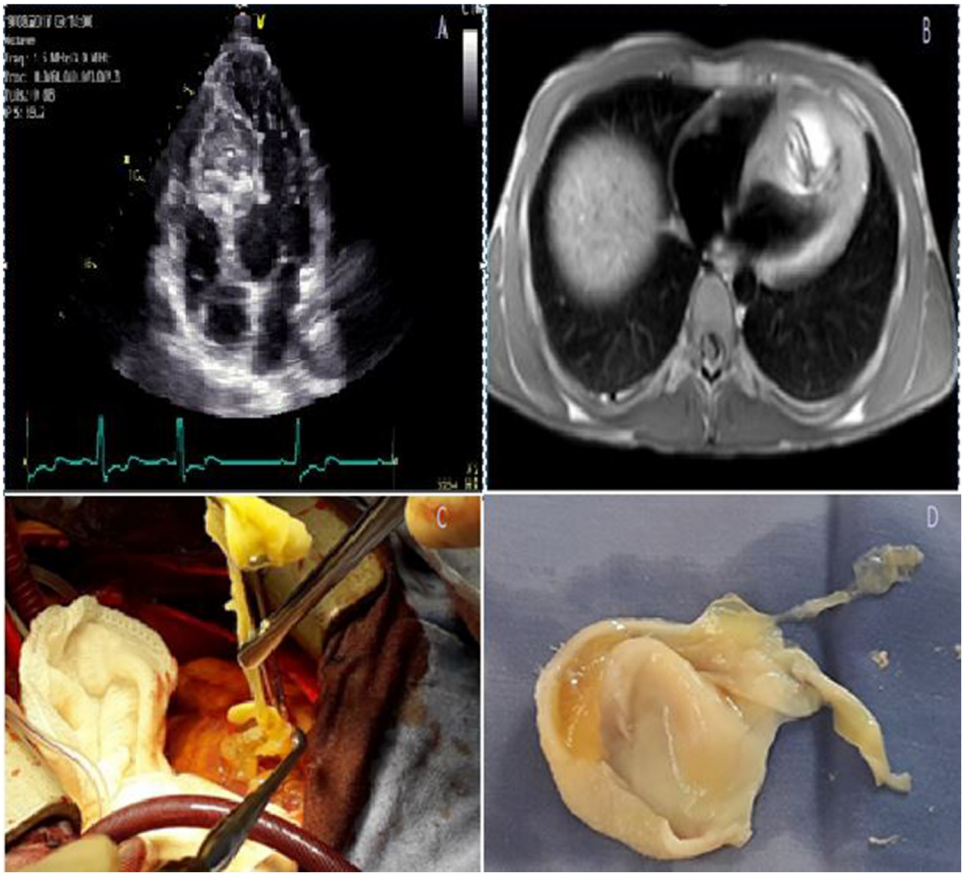


**Figure 1.** A: Echocardiographic frame in an apical 4-chamber view showing a large cystic mass splitting the interventricular septum.
B: Magnetic resonance image showing hydatid cyst located in the interventricular septum.
C: cystectomy and membrane extraction.
D: germinative membrane.

including cyst rupture; anaphylactic shock; tamponade; pulmonary, cerebral or peripheral arterial embolism; acute coronary syndrome; dysrhythmias; infection; ventricular or valvular dysfunction, as well as sudden death.

Hydatid cyst of the heart is a rare cause of embolization (Özer et al., 2001): the rupture of a left-sided hydatid cyst may result in cerebral emboli. These cysts are usually multiple, in contrast to primary cysts of the central nervous system that are mostly solitary. Diagnosis is based on clinical presentation, serology tests and imagery finding. The ELISA is one of the most specific serologic tests that can be used and a positive result for echinococcus antibodies confirms the diagnosis (Sağlıcan et al., 2016). Echocardiography is a non-invasive procedure which provide important findings: size and number of cysts, cyst locations and relationships with adjacent structures (Miralles et al., 1994; Oliver et al., 1988). MRI shows the anatomic extent and position of the mass and its relationship to the cardiac chambers (Dursun et al., 2008; Cantoni et al., 1993). Surgical excision is the preferred treatment (Yan et al., 2015).

In conclusion, hydatid cyst of the interventricular septum is rare but it can lead to serious complications. Diagnosis must be suspected in patients who live in endemic regions and present with an unexplained cardiac symptoms. The clinical history of our case also underlines the contribution of imaging in the diagnosis as well as the importance of the association of medical treatment and surgery in the management of our patient.

## Consent

Written informed consent was obtained from the patient for the publication of this case report and its accompanying images.

## Conflict of interest

No conflict of interest to declare.

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