

A case of a giant hydatid cyst occupying almost the entire intraventricular cavity

Intraventriküler boşluğun neredeyse tümünü işgal eden dev bir hidatik kist olgusu

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Cardiac hydatid cyst is a rare but important manifestation of echinococcal parasitic infection.^[1-4] Herein, we present the surgical management of a case of univesicular hydatid cyst that occupies almost the entire intraventricular cavity.

A 42-year-old Syrian migrant woman applied to the cardiology outpatient clinic with the complaint of dyspnea. She stated that her shortness of breath had gradually increased in the last year. In her medical history, it was learned that the patient had been operated for hydatid liver cyst five years ago, and she did not have a regular medication. Transthoracic echocardiography revealed a 69×75 mm hypoechoic cystic mass that filled almost the entire left ventricular cavity (Figures 1a, b). The left ventricular cavity was enlarged and left ventricular contraction was restricted due to the cystic mass, and the effective opening of the mitral valves during diastole was prevented by the cyst (Video 1).

Thoracoabdominal computed tomography (Figure 1c) and cardiac magnetic resonance (Figures 1d, e) imaging confirmed the presence of a hydatid cyst in the left ventricular cavity. Furthermore, multiple cystic lesions were found in the hepatic lodge on tomography. An enzyme-linked immunosorbent assay was positive for echinococcus antibodies. The patient was started on albendazole treatment and was referred to the cardiovascular surgery department.

Median sternotomy was performed under general anesthesia. Aortic and two-stage (unicaval) venous cannulations were performed. Cardiac arrest was achieved with antegrade del Nido cardioplegia, followed by cross-clamping. Mild hypothermia (32 to 34°C) was maintained in the operation. In open exploration, a hydatid cyst was seen in the left ventricular region. The cystic material was aspirated (Figure 2a), then a short incision was made from the anterior wall of the left ventricle, and the cyst was removed from the posterolateral wall to which the cyst was attached (Figures 2b-e). The cavity formed by the removal of the cyst mass was irrigated with hypertonic saline solution. There was no connection with the left ventricular cavity. The cyst cavity was closed between Teflon felt strips attached with two layers of horizontal mattress sutures using 2-0 ETHIBOND EXCEL® Polyester Suture (Ethicon, Johnson & Johnson MedTech, New Jersey, USA), in a Cooley-like aneurysmectomy (Figure 2d) similar to a previous case.^[3]

In the histopathological examination, the excised material was compatible with a univesicular echinococcal cyst. In control echocardiography, it was observed that left ventricular functions were mildly depressed (left ventricular ejection fraction: 45%), and mitral regurgitation persisted (Video 2). Presumably, dysfunction of the subvalvular structures

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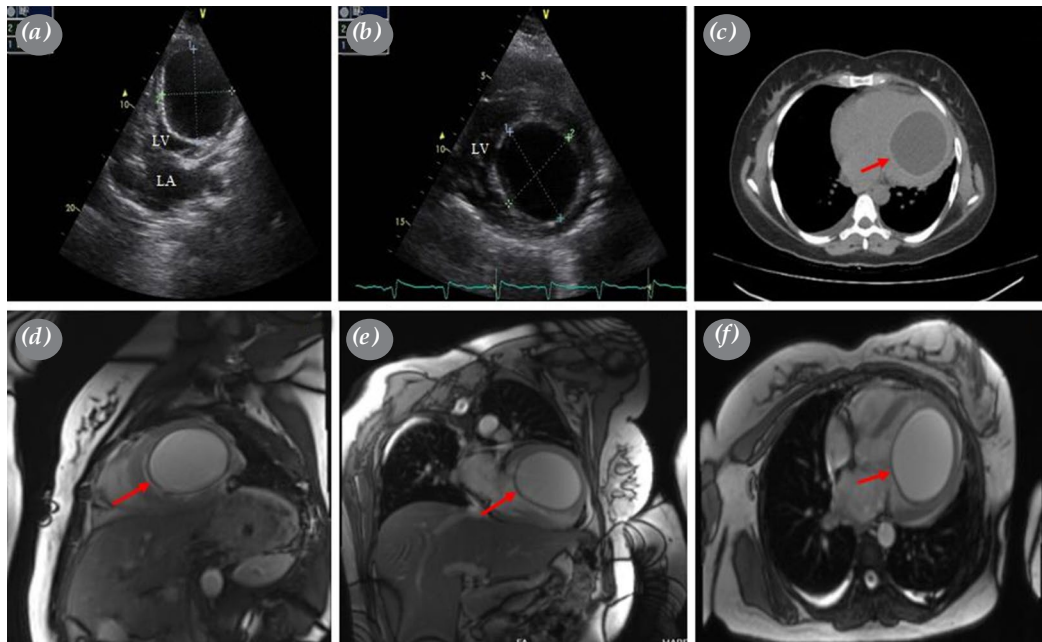


Figure 1. (a) Apical four-chamber view on transthoracic echocardiography, longitudinal section of the cyst. (b) Transverse section of cyst in parasternal short axis view on transthoracic echocardiography. (c) Hypodense cyst appearance in the left ventricle on computerized tomography (red arrow). (d) Hyperintense cystic lesion in the left ventricular cavity in the sagittal T2-weighted section (red arrow). (e) Hyperintense cystic lesion in the left ventricular cavity in the coronal T2-weighted section (red arrow). (f) Hyperintense cystic lesion in the left ventricular cavity in the axial T2-weighted section (red arrow).

LV: Left ventricle; LA: Left atrium.

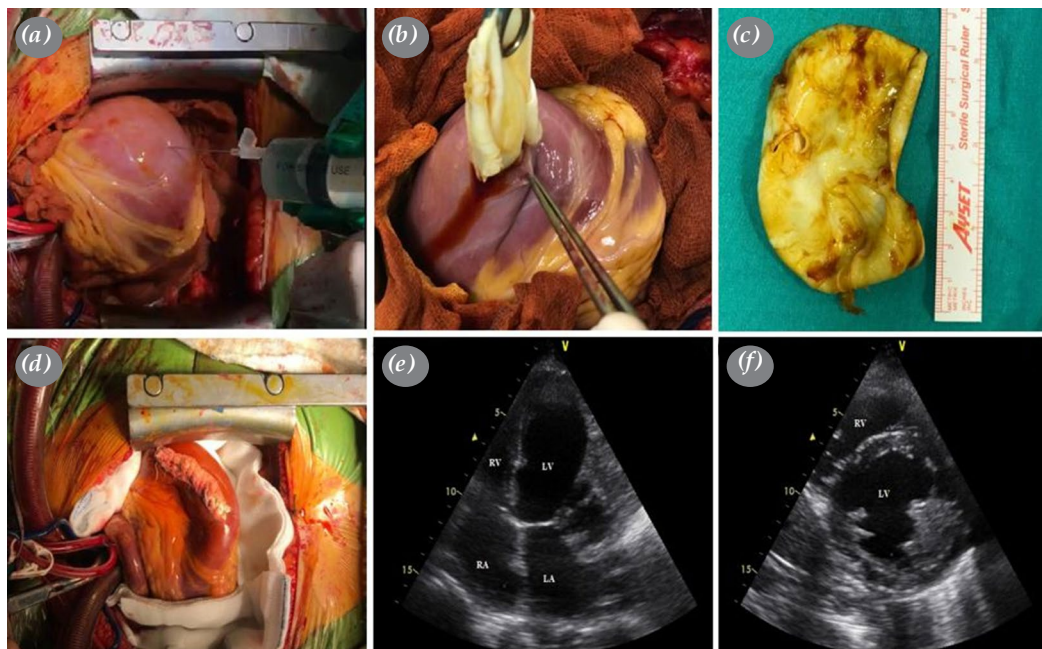
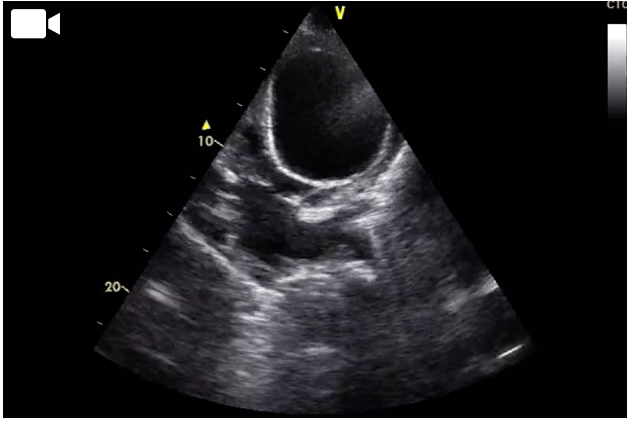
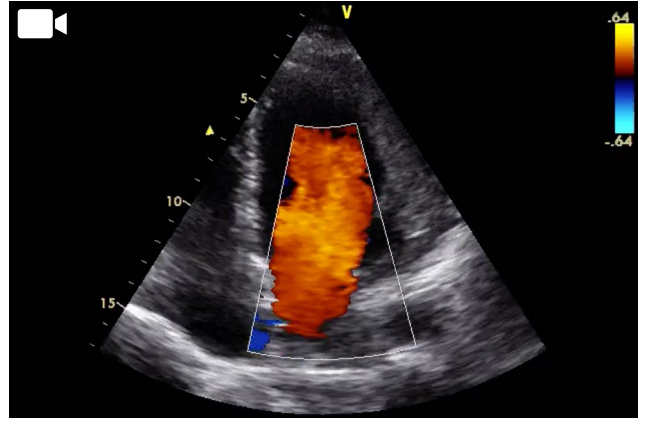


Figure 2. (a) Intraoperative view of aspiration of cystic fluid. (b) Removal of cyst material through an incision made in the anterior aspect of the heart. (c) Removed cyst material. (d) Repair of the ventricular incision with the captonnage technique similar to aneurysm repair. (e) Apical four-chamber view on transthoracic echocardiography after cardiac cyst removal. (f) Short axis view on transthoracic echocardiography after cardiac cyst removal.

LV: Left ventricle; LA: Left atrium; RV: Right ventricle; RA: Right atrium.



Video 1. Transthoracic echocardiography shows limited left ventricular contraction fraction and mitral valve opening fraction due to the cyst that covers almost the entire left ventricular cavity.



Video 2. Left ventricular functions are mildly depressed and a moderate mitral regurgitation jet is observed on transthoracic echocardiography performed after the removal of the cyst.

by the cyst resulted in postoperative persistence of mitral regurgitation. The patient was referred to the gastroenterology department in terms of hepatic cysts and was discharged uneventfully on the ninth postoperative day with albendazole treatment.

In our case, the patient presenting with a cardiac cyst that covers almost the entire ventricular cavity had stable vital signs apart from only dyspnea, probably since the growth progression of the cyst was chronic, and hemodynamic compensation took time to adapt to the process.

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REFERENCES

1. Agudelo Higuera NI, Brunetti E, McCloskey C. Cystic echinococcosis. *J Clin Microbiol* 2016;54:518-23. doi: 10.1128/JCM.02420-15.
2. Tascanov M, Uğur M. Multiple hydatid cysts of the interventricular septum. *Turk Gogus Kalp Dama* 2019;27:398-400. doi: 10.5606/tgkdc.dergisi.2019.17768.
3. Kankilic N, Aydın MS, Günendi T, Göz M. Unusual hydatid cysts: Cardiac and pelvic-ilio femoral hydatid cyst case reports and literature review. *Braz J Cardiovasc Surg* 2020;35:565-72. doi: 10.21470/1678-9741-2019-0153.
4. Gürbüz A, Yetkin U, Ceylan Can K, Çallı Orgen A, Yürekli İ. Concomitant giant cardiopericardial and right pulmonary hydatid cysts. *Turk Gogus Kalp Dama* 2013;21:779-78. doi: 10.5606/tgkdc.dergisi.2013.5970.