

Large left ventricular hydatid cyst surgical extraction



**ASSIGN
BUSTER**

Surgical extraction of a large left ventricular hydatid cyst under transesophageal echocardiography monitoring

Abstract

We describe the case of a 13-year-old girl who was diagnosed both hepatic and cardiac hydatid cysts by multimodality imaging. The left ventricular hydatid cyst was surgically removed not only under direct vision but transesophageal echocardiography monitoring. And the patient recovered uneventfully.

Keywords: echinococcosis; hepatic hydatid cyst; left ventricular hydatid cyst; multimodality imaging; transesophageal echocardiography (TEE)

Introduction

Echinococcosis is not rare, which can separately occur in many organs through the blood circulation, especially in the liver. And the prevalence of cardiac hydatosis is less of 2% of all human body infestations. In the lower prevalence of the cardiac hydatosis, the coexistence of large hepatic and cardiac hydatid cysts is reported barely [1]. And due to the variability of signs and symptoms at presentation and to its numerous, often unpredictable, preoperative complications, Cardiac echinococcosis is a diagnostic and therapeutic challenge. When echinococcosis is diagnosed, the treatment of choice for even asymptomatic cases is surgical ablation, due to the risk of cystic rupture [2]. But reported surgeries are always performed directly under vision. In this case report we present a girl who was diagnosed

both hepatic and cardiac hydatid cysts by multimodality imaging and received a cardiac surgical resection under multi-vision.

Case report

A 13-year-old girl from Tibet was admitted to our department without apparent symptom but occasional chest and abdominal pain during the past one year. She received a surgical resection in the liver 3 years ago.

Cardiovascular examination was unremarkable, but abdominal examination presented hepatomegaly especially in the left lobe. Chest radiography showed enlarged but not apparent left cardiac cavities (Fig. 1A). Abdominal Computed tomography revealed cystic masses in the liver and the largest one in left lobe of liver measuring 12 x 11 centimeters and, most importantly, noticed a part of the cardiac mass (Fig. 1B and 1C). The following cardiac magnetic resonance imaging demonstrated the presence inside the left ventricular cavity, of a large 3.7 x 3.8 centimeters cystic structure (Fig. 1D). For precise localization, transthoracic echocardiography was taken; that showed a cardiac cyst in the lateral portion of the left ventricular free wall (Fig. 2C). To ascertain diagnosis, the test was positive for specific echinococcus antibodies.

Patient was taken up for surgery. It is difficult for direct vision via the mitral valve way. On opening the aortic root, a part of cystic mass was seen in the left ventricle lateral wall. Before advanced performance, a purse string was sutured to prevent the fluid leak. Under direct vision and TEE monitoring, the cyst was aspirated, then injected with saturated saline solution twice ensuring to kill hydatid (Fig. 2A, 2B and video). The cyst was excised gently

(Fig. 3A, 3B). After removing all cystic material, the cyst cavity was thoroughly washed with hypertonic saline and finally was closed with pledgetted mattress sutures. The whole of the pericardial cavity was thoroughly washed with hypertonic saline. Intraoperative histopathological examination confirmed the diagnosis of hydatid cyst (Fig. 3C). Postoperative period remained uneventful (Fig. 2D). Patient was put on Albendazole (100 milligram two times a day) from the third day after operation and was advised to continue it for one month. In the three-month following up from the discharge, the patient is in good condition, and preparing to undergo another therapy on the hepatic hydatid cysts.

Disussion

Echinococcosis is a tissue infestation and affects most frequently the liver with second most frequent site the lungs. Cardiac hydatid cysts are rare and most frequently located in the left ventricle [1]. Only Yaliniz H et al. have reported 1 case of coexistence of hepatic and cardiac hydatid cysts but with no more details in recent years. In consideration of its not specific symptom, the diagnosis of cardiac hydatid disease usually arises from suspicion [2]. And the full multimodality imaging seems to give out more evidence to make diagnosis. And in some degree, the probable multi-occurrence and the asymptom may need our attention on not only the targeted organs but also the ones with high incidence. And once with diagnosis, early surgical removal is the treatment of choice. Traditional thoracotomy is under the direct vision and the hand feeling. The surgeon cannot know the condition of the cyst just from the outside and through the hands. And there is risk of rupturing the cyst. But with the TEE monitoring, the aspiration and injection <https://assignbuster.com/large-left-ventricular-hydatid-cyst-surgical-extraction/>

can be much safer and easier in another way of watching on the screen. This case is different from other cardiac hydatid cysts reported in literature previously because of the coexistence of hepatic hydatid cysts (the largest mass: 12 x 11 centimeters) through the multimodality imaging. Most importantly, this cardiac surgery performed under direct vision and TEE monitoring was firstly reported. For cases with hydatid cyst in heart, intraoperative TEE plays a significant role in helping to plan the surgical approach, monitor the puncture of the cyst, and assess the completeness of cyst resection [3]. And also in the above report, we notice that patient with this disease are inclined to recur because of its metastatic hemodynamics characteristic and the living habit [2]. Some patient may need twice or more surgeries which can also increase the death rate. To avoid this adverse event, the following up turns out to be more necessary.

Conclusion

Cardiachydatid cysts coexisting with hepatic hydatid cysts is very rare. And the diagnosis may need comprehensive and multimodality imaging to exclude some probable infestation organs. In terms of cardiac hydatid cysts, the surgical treatment is the principal choice. And on the foundation of traditional direct vision surgery, we intend to perform it under the direct vision and TEE monitoring.

Fig. 1: A: Computed tomography scan showing a large cystic mass in left lobe of liver measuring 12 x 11 centimeters. B: Computed tomography scan revealing the part of the cardiac mass (Arrow). C: Chest radiography showing enlarged left cardiac cavities (Arrow). D: Cardiac magnetic resonance

imaging showing a cyst in left ventricular anterior wall measuring 3.7 x 3.8 centimeters and other cysts in the liver (Arrows).

Fig. 2: A-B: The aspirated cyst and the injected cyst (Blue Arrow) with the needle (Red Arrow) in transesophageal echocardiography. C: Echocardiographic appearance of left ventricular hydatid cyst. D: Anatomical structure improvement and the remnant external cavity (Blue Arrow) in left side.

Fig. 3: The endocyst extraction in surgery (A) and the appearance of the endocyst under the naked eye (B) and microscope (C).

Video: Dynamic TEE recording the process of injecting the cyst and appearance of the wriggling hydatid.