

Commentary: Cardiac Hydatid Cyst

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Description

Hydatid cyst is a parasitic infestation caused by the larval stage of the different species of the tapeworm *Echinococcus* genus. The most common form worldwide is cystic echinococcosis that is chiefly caused by *Echinococcus granulosus*. It is endemic in Mediterranean countries, the Middle East, South America, and Australia [1], with an incidence of 5.2 cases per 100,000 inhabitants with a predominance in females (sex ratio M/F=0.66) and young adults: 59.1% of hydatidoses have been diagnosed in patients aged 15 to 49 years [2], 29% of the cases were found in children younger than 14 years [1].

Like many other parasitic infestations, the course of *Echinococcus* is complex. The worm has a life cycle that requires definitive hosts and intermediate hosts. Definitive hosts are normally carnivores such as dogs and cats while intermediate hosts are usually herbivores such as sheep or cattle. *Echinococci* are transmitted to intermediate hosts via the ingestion of eggs as humans do. Whereas, they are transmitted to definitive hosts by means of eating infected, cyst-containing organs. Humans are accidental intermediate hosts that become infected by handling soil or dog excrement that contains eggs or by ingestion of food contaminated by the ova of the parasite [1].

The potential risk factors of cystic echinococcosis are the regional epidemic, the rural environment with hygiene practices, social conditions, education and the young age.

The liver and lungs are the organs most affected by parasitosis. Hepatic hydatidosis is by far the most common (75%), followed by lung locations (20%). Still, hydatidosis can be found in any site of the body: brain, muscle, heart, kidney, spleen, peritoneum [1]. The hydatid cyst of the heart cardiac is unusual with a reported frequency of 0.5%-2% [3, 4]. 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. Patients with a cardiac hydatid cyst may be asymptomatic. While other patients can develop symptoms because of the cyst's compression of a coronary artery or conduction system. Cardiac hydatid cysts may lead to serious complications including cyst rupture, anaphylactic

shock, tamponade, pulmonary, cerebral or peripheral arterial embolism, acute coronary syndrome, dysrhythmias, ventricular or valvular dysfunction, as well as sudden death. Electrocardiogram abnormalities such as Q waves and inverted T waves in the inferior leads may also occur or signs of ventricular hypertrophy. When present, these signs should raise the suspicion of cardiac hydatidosis in patients living in endemic regions even when clinical symptoms are absent. Echocardiography is a non-invasive procedure which provides important findings: size and number of cysts, cyst locations and relationships with adjacent structures. Cardiac-CT and cardiac MRI (Magnetic Resonance Imaging) show the anatomic extent and position of the mass and its relationship to the cardiac chambers [5, 6].

When a hydatid cyst is found, whatever the localization is, it is necessary to assess the extension by a brain-CT, chest X ray, echocardiography and abdominal echography. Atypical localization can be found and can change the therapeutic vision, especially in children who live in endemic regions.

The tests for diagnosis of hydatidosis include detection of IgE and IgG by Western Blot and molecular analysis of the excised tissues. Sequencing of the DNA polymerase chain reaction of contents from the cyst could also be performed as more specific test [2,4].

The management of cardiac hydatid cyst depends on the clinic and the combination of other locations, requiring a multidisciplinary approach. Hydatid disease must be treated either by albendazole and surgery or by albendazole and PAIR (Puncture, Aspiration, Injection of a scolicidal agent and Re-aspiration) to extract the cyst without any complications. [7].

As of high frequency of recurrent hydatid disease after treatment, multidisciplinary approach is recommended and continuing medical treatment for at least 3 months postoperatively is also suggested [7]. In patients with multiorgan hydatid cysts, surgical removal of all cysts at the same time is recommended if possible [8].

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