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Case Report

# Hydatid Cyst of the Heart: About a Series

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## Abstract

From January 1996 to December 2019, 16 patients were hospitalized in the cardiac surgery department and operated on for hydatid cyst of the heart. The majority were female. The average age was 29 years old. 25% of patients had an associated extracardiac location.

All patients underwent open heart surgery.

The purpose of this study is to report our experience, assess the results and compare them with data from the literature. Doppler echocardiography and MRI angiography allowed early and precise diagnosis. The prognosis is good except in the formsComplicated. Surgery remains the only therapeutic alternative. Anti-parasitic medical treatment is a complement to surgery advocated by certain teams.

**Keywords:** cardiac echinococcosis; pulmonary embolism; cardiac surgery; doppler echocardio; extracorporeal circulation; albendazole

## Introduction

During a period of 11 years, 16 patients were operated on in the hydatid cyst of the heart department. These are patients who have been entrusted to us by the medical or cardiology services. The mode of revelation of the disease was either rhythm disturbances, conduction disturbances or chest pain. All patients underwent an electrocardiogram, a chest x-ray, an echocardiogram and sometimes a chest CT angiogram. An extension assessment was carried out in all patients in search of other locations. All patients underwent open heart surgery under extracorporeal circulation. The postoperative results were satisfactory, however we regret two death.

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## Methods :

From June 1996 to December 2019, 16 patients were operated on in the department for hydatid cyst of the heart. The majority of patients were female with a F/M ratio of 12/4. The average age of the patients was 29 years with extremes of 11 and 60 years.

### Clinically:

During a period of 11 years, 16 patients were operated on in the hydatid cyst of the heart department. These are patients who have been entrusted to us by the medical or cardiology services. The mode of revelation of the disease was either rhythm disturbances, conduction disturbances or chest pain. All patients underwent an electrocardiogram, a chest x-ray, an echocardiogram and sometimes a chest CT angiogram. An extension assessment was carried out in all patients in search of other locations. All patients underwent open heart surgery under extracorporeal circulation. The postoperative results were satisfactory, however we regret two death.

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### Clinically:

- the revealing complications :

| | |
|---|---|
| Tachyacfa | 04 |
| Atrio ventricular block | 04 |
| Chest pain | 02 |

- The accidental discovery made during the extension assessment: 05 patients

| | |
|---|---|
| Liver hydatid cyst | 04 |
| Brain hydatid cyst | 01 |

The electrocardiogram :

| | |
|---|---|
| Liver hydatid cyst | 04 |
| Brain hydatid cyst | 01 |

The chest x-ray was normal for 14 patients; 02 patients presented cardiomegaly.

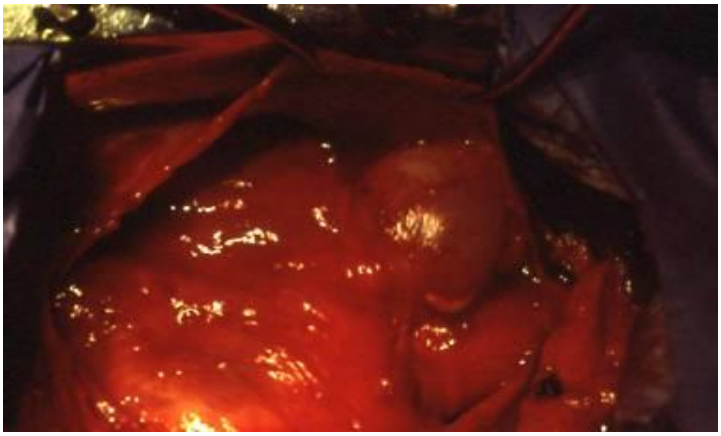
An echocardiodoppler was carried out in all patients as well as a thoracic angioscan, they allowed a topographical diagnosis, visualize the number of cysts, assess the volume and perform an extension assessment.

Chest angioscan Echocardio

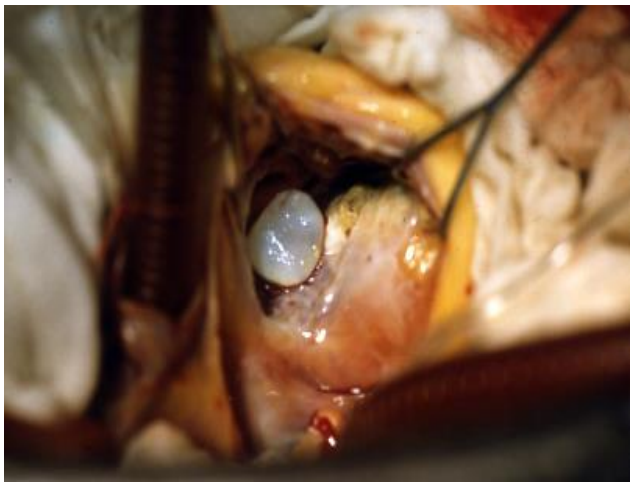
The locations found in our study:

| | |
|---|---|
| Interventricular septum | 09 |
| Wall of the left ventricle | 06 |
| Sinus of Theile | 01 |

**Left ventricular lateral wall cyst**

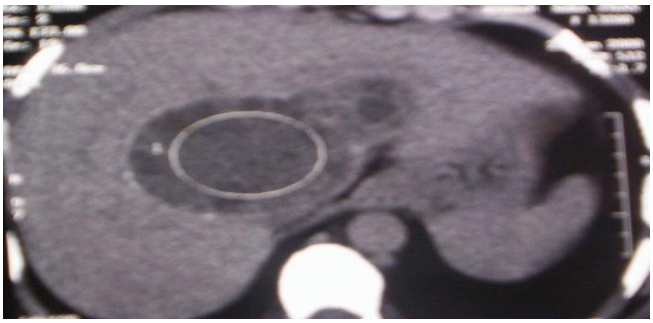


**Sinus of Theile cyst**



**Cyst of interventricul septum**

All patients underwent an extension assessment to look for other locations, in particular an abdominal ultrasound. An abdominal CT angiogram was performed in one patient because the abdominal ultrasound was not informative.



**Abdominal CT angiogram**

All our patients underwent open heart surgery under extracorporeal circulation and aortic clamping. The approach was a Median Sternotomy. After protecting the operating field with compresses soaked in hypertonic serum, the treatment consisted of a puncture, aspiration of the cyst, sterilization of the parasite with hypertonic serum, resection of the pericyst and padding of the residual cavity.

The surgical outcomes were satisfactory for the majority of patients. However, we deplore two postoperative deaths due to myocardial incompetence and one death in the 4th month postoperatively. This was the patient who had an associated cerebral localization.

## Discussion :

Hydatid cyst is a rare condition [1,2]. In certain regions, hydatidosis remains a public health problem [3], particularly in our country [4].
the thoracic locations are dominated for some by the lung [5] while for others, it is the liver (70%) and the lung represents only 20%. cardiac locations are of the order of 0.5% to 2% [6].
It is a condition of young adults since the average age is between 25 and 30 years [1, 2, 3.7], it is the same for our series.
We note a clear female predominance [1, 3, 7,8], it is also found in our study.
The diagnosis of hydatid cyst is difficult because the clinical symptoms are non-specific and highly variable. [9]. Clique signs appear either when there is a complication: ruptured septal cyst in the pulmonary artery [2,10], or rhythm or conduction disturbances as in our series, or

as part of the assessment of extension of hydatid disease [1,8,11]. In our work, the diagnosis of hydatid cyst of the heart was made as part of the extension assessment in 25% of patients. It should also be looked for in any cardiac mass, especially in hydatid endemic areas [12].
Chest radiography only detects bulky forms responsible for cardiomegaly or possible calcifications [6].
In our study, as in the literature, most patients had a normal chest x-ray.
The electrocardiogram was carried out in all patients. It allows us to assess the impact of the cyst on the cardiac cavities [13].

Transthoracic echocardiography is the first-line examination. It often makes it possible to make the diagnosis and look for other locations [1,6]. Transesophageal echocardiography is the examination of choice for diagnosis [7].

CT and MRI allow morphological and extension assessment [6,14]. The interest of MRI finds its place in complicated cases and in cases of discrepancy between the ultrasound data and the scanner [13].

In our work, CT angiography was only performed once because the diagnosis could not be made with echocardiography.
The growth of the hydatid cyst is slow and asymptomatic, which explains an often late diagnosis at the stage ofcomplications, such as compression or rarely rupture leading to cerebral [4], pulmonary [2] or pulmonary embolisms [10,15].
In the pericardium, it causes tamponade [16].
Cardiac localization is rare and mainly comes from the coronary circulation.

Intracardiac or pericardial forms are exceptional, while involvement of the free wall of the left ventricle (50 to 60% of cardiac locations) is the most common due to its rich parietal vascularization [6, 7,13].
In our series it is 37%. In the literature, localization at the interventricular septum level represents 5 to 20% of myocardial damage [13,17,18]. In our series, it is 56% and therefore more common than the location of the free wall of the right ventricle. This septal damage is the cause of conduction disorders [6,19].

The location in the right heart is rare [20,21], we did not encounter it in our study.

As for all our patients, the treatment of hydatid cyst is surgical [1]. The surgery is carried out under extracorporeal circulation [2] and aortic clamping [11]. Sternotomy is the approach used [8].

Sterilization of the parasite was carried out using hypertonic saline [22]. The residual cavity was closed in all cases [3,22] thus reducing the risk of recurrence. Clamping of the pulmonary artery is necessary during resection to avoid pulmonary dissemination [3].

Antiparasitic medical treatment is an adjunctive post-operative treatment to avoid recurrences, or in patients at a complicated stage and where surgical treatment is contraindicated [1,11, 23,24]. In our series, patients did not benefit from antiparasitic medical treatment.
The postoperative results are good, we had to deplore 2 deaths due to myocardial incompetence because the patients were operated on at the stage of heart failure. The same results are found in the literature [2, 3, 8, 22,25].
We did not observe any post-operative complications, even though the literature reports conduction disorders in cysts of the interventricular septum requiring the insertion of a pacemaker [8,22]. We did not observe any distant recurrence [2,22].

## Conclusion :

Hydatid cyst of the heart is a rare condition compared to other locations such as the liver and lung. It is always necessary to look for a cardiac location when there is another location, particularly in endemic areas. The diagnosis is easy with echocardiography and especially CT.

Surgical treatment under extracorporeal circulation is the only alternative. Antiparasitic medical treatment is considered by some to be a complement to surgical treatment. The prognosis is good if patients are operated on early before the complication stage.

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