



## **Rare and Unusual Presentation of a Hydatid Cyst: A Case Report**

**Abdelilah Elbakouri<sup>1</sup>, Amine Bachar<sup>1\*</sup>, Ahmed Ballati<sup>1</sup>, Khalid Elhattabi<sup>1</sup>,  
Fatimazahra Bensardi<sup>1</sup> and Abdelaziz Fadil<sup>1</sup>**

<sup>1</sup>*Department of Visceral Surgical Emergency, CHU Ibn Rochd, Faculty of Medicine and Pharmacy,  
Hassan II University, Casablanca, Morocco.*

### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author Amine Bachar designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AE and Amine Bachar managed the analyses of the study. Author Ahmed Ballati managed the literature searches. All authors read and approved the final manuscript.*

### **Article Information**

#### Editor(s):

- (1) Dr. José Francisco de Sales Chagas, Sao Leopoldo Mandic Medical School, Brasil.  
(2) Dr. Fehmi Kaçmaz, Uskudar University Istanbul, Turkey.

#### Reviewers:

- (1) Majid Mushtaque, India.  
(2) Akhlak Hussain, India.  
(3) Yuçel Akkas Thoracic, Ankara City Hospital, Turkey.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/55714>

**Case Study**

**Received 17 January 2020**

**Accepted 24 March 2020**

**Published 27 March 2020**

### **ABSTRACT**

Hydatid cyst is a parasitic disease that is widespread in different parts of the world. It affected both sexes equally and was more seen in young persons. The liver and lung are the organs most affected by the parasite. Cardiac localization is rare but severe. A pericardial location without cardiac damage is exceptional. Echocardiography is a preferred and efficient modality for the diagnosis of cardiac hydatidosis, it was the initial modality for the diagnosis in all patients. Serologic tests are a helpful supplement but false-negative results were possible. Surgical excision was performed in the vast majority of cases. Albendazole was used for preoperative sterilization and post operative period up to six months to prevent recurrence. We report the observation of a patient with a hydatid cyst with ruptured hepatic localization in the pericardium revealed by a pericardial effusion syndrome.

**Presentation of the Case:** A 25-year-old patient with no previous history, admitted with progressive pericardial effusion syndrome with palpation of an epigastric mass. The chest X-ray showed cardiomegaly, the thoracoabdominal CT scan showed a hydatid cyst of the left lobe of the liver probably ruptured in the pericardium. The ECG showed a micro-voltage and the echo heart rate

\*Corresponding author: E-mail: [bachar.amine81@gmail.com](mailto:bachar.amine81@gmail.com);

indicated a pericardial effusion of medium abundance. Hydatid serology was positive. The patient had a hydatid cyst dome resection of the left lobe with drainage and emptying of the pericardium. Patient died in a board of septic shock. The pericardial localization of hydatid cyst without cardiac involvement is exceptional and potentially fatal.

**Keywords:** Hydatid cyst; pericardial effusion; fistula.

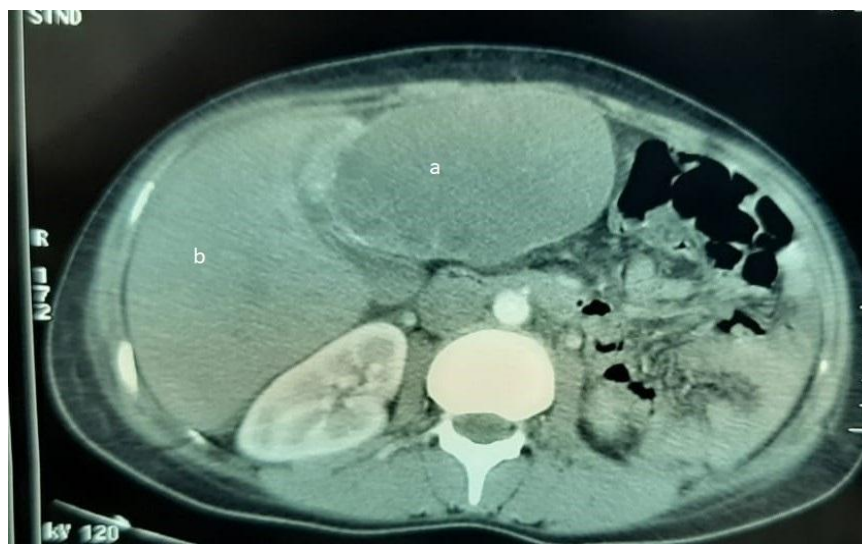
## 1. INTRODUCTION

Hydatid cyst is a parasitic disease that is endemic in different regions of the world such as the Mediterranean basin [1]. Lung and liver damage are the most commonly described lesions [2]. Cardiac localization is severe but remains rare and accounts for only 0.5-2% of all cases [2], pericardial localization without cardiac involvement remains exceptional and potentially fatal [3]. We report the observation of a patient operated on for a hydatid cyst of the left liver ruptured at the pericardium revealed by a pericardial effusion syndrome.

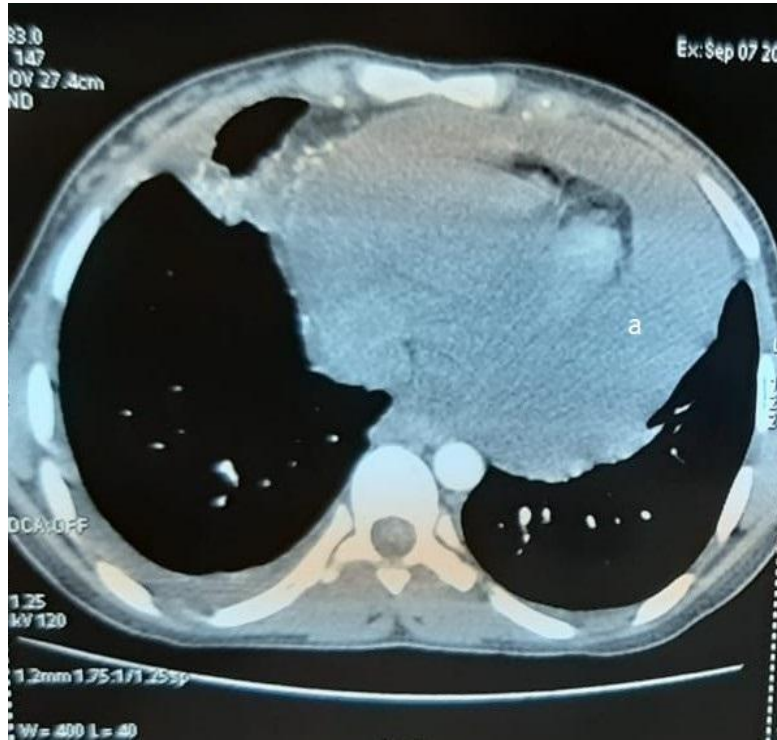
## 2. PRESENTATION OF THE CASE

A young patient, 25 years old, with no specific history. Who presents a typical epigastric pain of gravity since 9 months, complicated 15 days ago by a precordial retrosternal pain of progressive installation, aggravated by the installation of dyspnea at the effort with an alteration of the general state. Clinical examination found a conscious, hemodynamically and respiratory stable patient with saturation at SaO<sub>2</sub> (99%), abdominal examination showed a painless epigastric mass that was mobile with respiration.

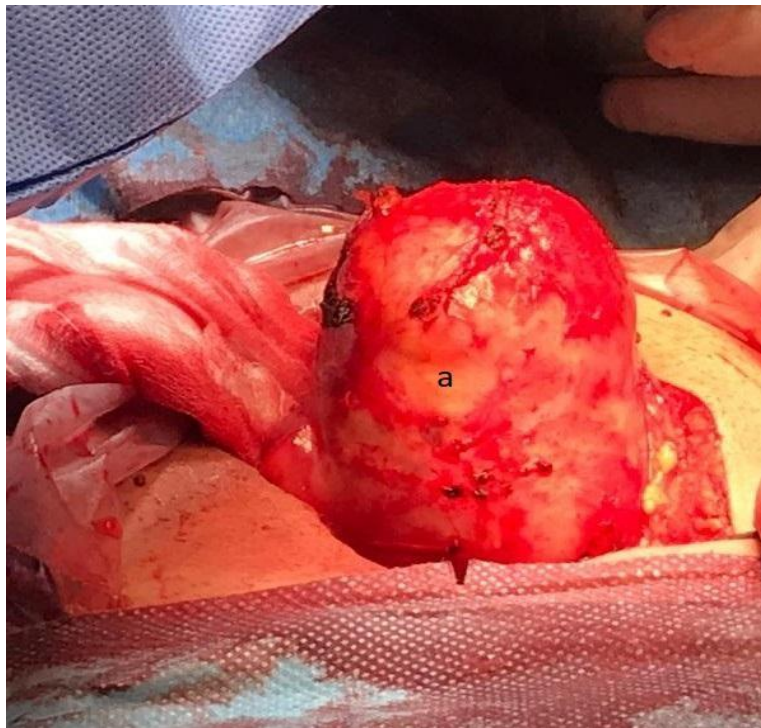
A muffled heart sound was found on auscultation. The chest X-ray showed cardiomegaly and the ECG showed a micro-voltage. Abdominal ultrasound was in favor of a type III hydatid cyst at the expense of the left lobe of the liver. Thoracoabdominal CT confirmed the presence of a hydatid cyst of the left lobe of the liver, 14 cm long, multivesicular, probably ruptured in pericardium with pericardial effusion of medium abundance (Figs. 1-2). The heart ultrasound confirmed pericardial effusion without vesicle visualization. Hydatid serology was positive. Surgical exploration showed an exophytic hydatid cyst occupying the left lobe of the liver measuring 15 cm long axis adhering in part to the diaphragm (Fig. 3). The patient underwent partial cystectomy of the hepatic hydatid cyst with emptying of its vesicular and membranous contents. Disconnection of the cyst from the diaphragm showed the fistulous orifice (Fig. 4) with rock-water outflow through the pericardial cavity. Closure of the cysto-pericardial fistula after subxiphoid pericardial drainage was achieved. The patient was hemodynamically unstable during the procedure. The immediate postoperative period was marked by the death of the patient in a septic shock.



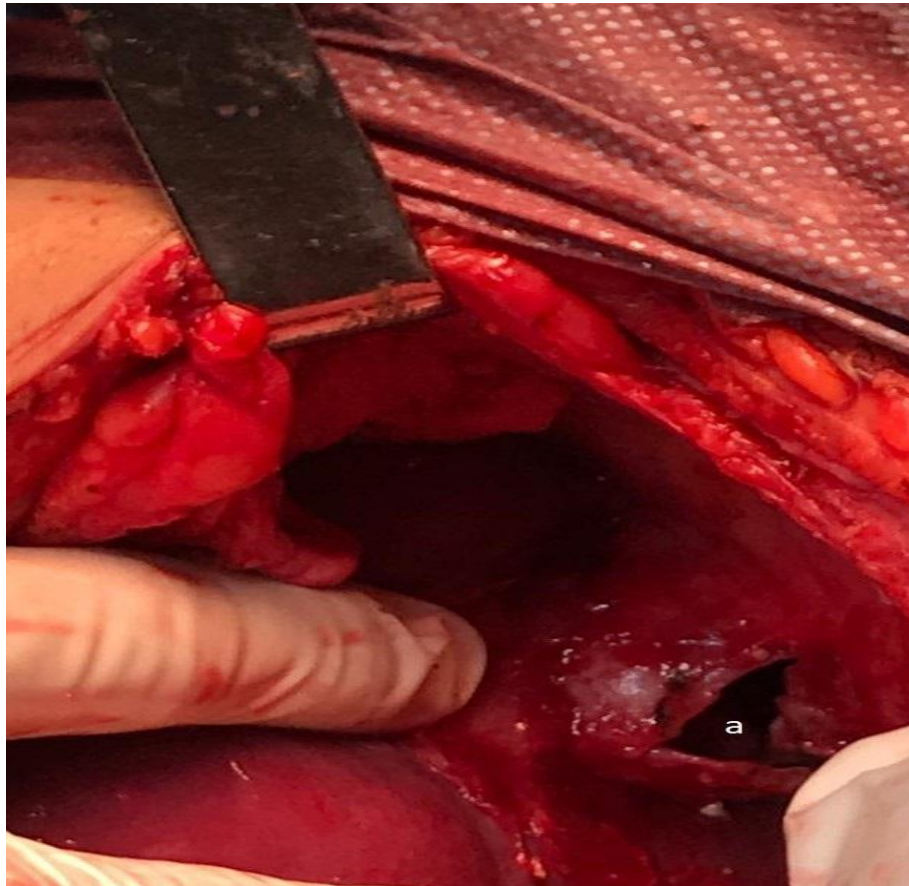
**Fig. 1. Abdominal CT scan showing a hydatid cyst of the left lobe of the liver**  
*a: Hydatid cyst. b: Right lobe of the liver*



**Fig. 2.** Chest CT scan showing pericardial effusion  
*a: Pericardial effusion*



**Fig. 3.** Per-operative image objectivizing a hydatid cyst of the hepatic left lobe  
*a: Exophytic hydatid cyst*



**Fig. 4. Peroperative image objectivizing the cysto-pericardial fistula**  
*a: Trans-diaphragmatic fistulous orifice*

### 3. DISCUSSION

Hydatid disease is a public health problem, particularly in the Mediterranean region [3]. It is a parasitosis due to larval infestation of granulosa of tapeworm echinococcosis [3]. Humans are affected directly through contact with dogs or by eating food contaminated with the eggs of the parasite [4,5]. Hydatid cyst affects in most cases the liver (59-75%), lungs (27%), kidneys (3%), bones (1-4%), central nervous system (1-2%). The spleen, pancreas, muscles, adrenal glands, parotid gland, thyroid and prostate are exceptional locations of this parasite [5]. Cardiac localization remains rare and accounts for only 0.5 to 2% of all cases. Isolated damage to the pericardium without cardiac involvement is exceptional and potentially fatal [6,7]. Our patient had pericardial involvement through a diaphragmatic fistula of a left hepatic localized hydatid cyst ruptured in the pericardium rarely described in the literature. The

clinical signs are polymorphic, depending on its location, size and number of cysts [5,8]. Symptoms described are chest pain, palpitations, dyspnea of effort; sometimes the discovery is fortuitous, or manifest as a complication such as a complicated cardiac arrest tamponade. Electrocardiographic abnormalities such as Q waves and inverted T waves in the inferior leads may occur. Chest X-ray may show cardiomegaly with deformation of the cardiac silhouette, arcuate calcifications and may be associated with pulmonary localization. Hydatid serology and trans-thoracic echocardiography are currently the diagnostic tests of choice for cardio-pericardial hydatid cysts [9]. Even the Serologic tests are a helpful supplement, but false-negative results are possible CT and MRI are essential in cases of doubt or to clarify cyst reports, as they make it possible to find other locations [10]. In our case, the chest X-ray showed cardiomegaly. The diagnosis was made on the

thoracoabdominal CT scan and positive hydatid serology.

Because there is still no medical treatment effective for cardiac cysts, the treatment of hydatid cyst disease is surgical and should not be delayed since medical therapy does not offer assurance against rupture of the cyst and its potential life-threatening complications.

The treatment is surgical [9]. It consists of excision of the cyst, in our patient drainage and pericardial emptying was necessary to overcome the risk of tamponade, with resection of the dome of the hepatic cyst of the left lobe, the hemodynamic state of the patient did not allow a left lobectomy to be performed. The patient died in the immediate aftermath in connection with septic shock. Albendazole was used for preoperative sterilization and post operative period up to six months to prevent recurrence. The protocol that was the most detailed is: Albendazole at the dose of 400mg twice daily at least 5 days before surgery and continued post operatively for at least 12 weeks [11].

#### 4. CONCLUSION

Our observation objectified a pericardial localization of a ruptured left liver hydatid cyst in the pericardium. The fatal progression of our case to death explains why this is a serious location.

#### CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

#### ETHICAL APPROVAL

It is not applicable.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Masson E. Tamponade revealing an intrapericardial hydatid cyst - a case report. [Internet]. EMConsult. [Quoted Nov 16, 2019] Available: <https://www.emconsulte.com/article/922646/figures/tamponade-revelant-a-cyst-hydatis-intra-peric>
2. Bakkali A, Jaabari I, Bouhdadi H, Razine R, Mechita NB, Harrag JE, et al. Cardiac hydatid cysts in 17 operated cases /data/revues/00033928/unassign/S0003392817300549/ [Internet]; 2017. [Cited 16 Nov 2019] Available: <https://www.em-consulte.com/en/article/1123538>
3. Mouhsine A, Belkouch A, Athmane EM, Roukhssi R, El Fikri A, Belyamani L, et al. Hydatid cyst of the pericardium: A case report. Pan Afr Med J. 2014;19. [Internet]. [Cited 16 Nov 2019] Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4405061/>
4. Nelson Textbook of Pediatrics - 18<sup>th</sup> Edition [Internet]. [Cited 16 Nov 2019] Available: <https://www.elsevier.com/books/nelson-textbook-of-pediatrics/kliegman/978-1-4160-2450-7>
5. Pedrosa I, Saíz A, Arrazola J, Ferreirós J, Pedrosa CS. Hydatid disease: Radiologic and pathologic features and complications. Radiogr Rev Publ Radiol Soc N Am Inc. 2000;20(3):795-817.
6. Noah MS, el Din Hawas N, Joharjy I, Abdel-Hafez M. Primary cardiac echinococcosis: Report of two cases with review of the literature. Ann Trop Med Parasitol. 1988;82(1):67-73.
7. Birincioğlu CL, Bardakci H, Küçüker SA, Ulus AT, Arda K, Yamak B, et al. A clinical dilemma: Cardiac and pericardiac echinococcosis. Ann Thorac Surg. 1999;68(4):1290-4.
8. De Martini M, Nador F, Binda A, Arpesani A, Odero A, Lotto A. Myocardial hydatid cyst ruptured into the pericardium: Cross-sectional echocardiographic study and surgical treatment. Eur Heart J. 1988;9(7):819-24.
9. Elkarimi S, Ouldalgadia N, Gacem H, Zouizra Z, Boumzebra D, Blelaabidia B, et al. Tamponnade revealing an intrapericardial hydatid cyst - one case. Ann Cardiol Angéiologie [Internet]. 2014;63(4):267-70. [Cited Nov 16, 2019] Available: <http://www.sciencedirect.com/science/article/pii/S0003392812000042>
10. Fenane H, Maldi EM, Bouchikh M, Lamboni D, Achir A, Ouchen F, et al. Pericardial hydatidosis. Pan Afr Med J [Internet]. 2015;20. [Cited 16 Nov 2019]

- Available:<https://www.panafrican-med-journal.com/content/article/20/375/full/>
11. Fennira S, Kamoun S, Besbes B, Ben Mrad I, Zairi I, BenMoussa F, Mzoughi K, Kraiem S. Cardiac hydatid cyst in the interventricular septum: A literature review. International Journal of Infectious Diseases. Available:<https://doi.org/10.1016/j.ijid.2019.09.004>

© 2020 Elbakouri et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
*The peer review history for this paper can be accessed here:*  
<http://www.sdiarticle4.com/review-history/55714>