



## Case Report

# Diaphragmatic Multivesicular Hydatid Cyst

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### ABSTRACT

The hydatid cyst of the diaphragm is defined as the development of a hydatid cyst in the diaphragm muscle. Primary or secondary it stills a rare localization, accounting for 1% of the thoracic locations. We report a case of a hydatid cyst of diaphragm in a 57 -year-old female who was admitted to our clinic for right basithoracic pain. CT reported a giant hydatid cyst including multiple vesicles at the right lower thoracic cavity. Surgical exploration revealed an independent giant diaphragmatic hydatid cyst. We performed cystotomy and more than 100 daughter vesicles were removed from the cyst. The rest of the giant cyst cavity was excised.

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### Introduction

Hydatid disease represents a major health problem in endemic regions. Hydatid cysts of the diaphragm (also known as extrapulmonary intrathoracic cysts) is a very rare localization with the incidence of around 1% [1, 2]. They may be operative discovery or by their complication, hence a variable symptomatology making this localization a particular entity [3].

### Observation

A 57-year-old female patient who had undergone surgery for a liver hydatid cyst twenty years earlier. She was admitted to our department for right thoracoabdominal pain, aggravated by cough and deep breathing. Laboratory tests had a minimal cytolysis. On physical examination hepatomegaly was established. Chest X-ray showed giant right basal opacity (Figure 1). Ultrasonography revealed a giant cyst measuring 17×12 cm extended to both the thorax and abdomen which included multiple vesicles. A thoracoabdominal CT revealed a giant thoraco-abdominal hydatid cyst including multiple vesicles without distinguish its origin associated with another giant kidney hydatid cyst (Figure 2). A right conservatrice thoracotomy was performed. During the exploration, we saw a giant hydatid cyst on the diaphragm muscle, free from the lung and abdominal cavity. The hydatid cyst originated from the right diaphragm and pushed the entire hemidiaphragm into the abdomen excessively. We performed cystotomy and more than 100 daughter vesicles were removed from the cyst (Figure 3). The rest of the giant cyst cavity was excised. During this the diaphragm wasn't damaged. The patient was discharged from the hospital on the 10th

postoperative day. Postoperative albendazole therapy was started for six months when she was discharged from the hospital. The kidney hydatid cyst will be treated later because it was not accessible by thoracotomie.

### Discussion

Described in 1927 by Gabrielle, the diaphragmatic hydatid cyst is an exceptionnel localisation, less than 100 cases are reported in literature [1]. This rarity is explained by the muscular contractility at the origin of a production of lactic acid preventing the fixation and the development of the parasite at the level of the muscular tissue, in particular the diaphragm [2]. In the primary forme, diaphragmatic localization of hydatid cyst is possible when the embryos reach that site by arterial or lymphatic circulation, and in the secondary forme a great part of the liver is without peritoneum. Cysts located in this area are more likely to adhere to the diaphragm [4]. In our opinion, the second explanation is more acceptable in our case because the patient was operated for un hepatic hydatid cyst.

The diaphragmatic hydatid cyst will be usually asymptomatic or result in a dull aching pain, but, cough, dyspnea and fever can also occur when the cyst is ruptured or infected [1, 5]. Radiographically, chest radiograph and ultrasonography can diagnose hydatid cyst of the lung and liver respectively, while CT scan can exactly determines the location and details of the cysts. Almost always reported cases of isolated diaphragmatic hydatid cyst were diagnosed as a liver or lung hydatid cyst preoperatively and found to be intraoperatively diaphragmatic [2, 6]. The surgery remains the best treatment modality [1, 3].

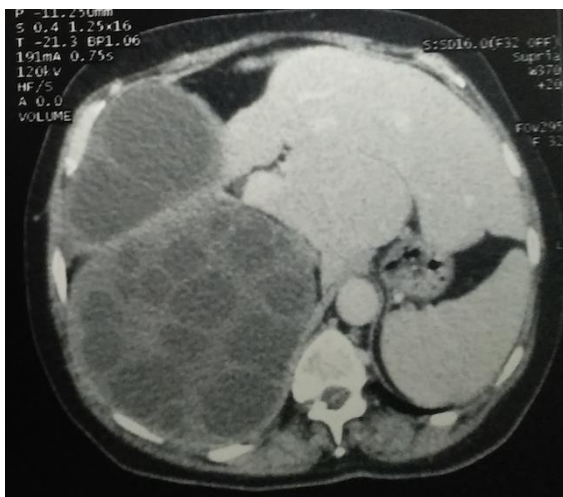
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**Figure 1:** Chest radiograph showing a giant basal right opacity



**Figure 2.1:** CT image showing a multivesicular diaphragmatic cyst



**Figure 2.2:** CT image showing a diaphragmatic cyst associated to a multivesicular kidney cyst



**Figure 3:** Picture showing the aspirated daughter vesicles and the hydatid membranes

The main principle is to empty the cyst, take out the daughter cysts and the germinative membrane then excise as much as possible the pericyst, and the treatment of the other localisation if they exist [2]. The choice of the access route don't meet any surgicals guidelines because of the great variability in size of the cyst, its localisation, and associated lesions [1]. Between thoracic, abdominal, and combined access route, the postero-lateral thoracotomy remains the most flexible and preferred by most investigators [1, 3, 4, 6]. It makes possible to explore the thorax, the diaphragm and the abdomen.

A medical treatment based on albendazole on a dose of 10 to 15 mg / kg / day for at least 6 months must be systematically prescribed, especially when the cyst is multivesicular as our case.

### Conclusion

The diaphragmatic hydatid cyst is a very rare entity. The preoperative diagnosis is difficult. And only surgery provides the chance of cure by total excision of the cyst through thoracotomy.

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