Case Report

Primary Giant Hydatid Cyst of the Diaphragm

Şevval Eren,[1] Refik Ulku,[1] A. Cetin Tanrıkulu,[2] and M. Nesimi Eren[3]

We report a case of an hydatid cyst of diaphragma in a 34-year-old female who was admitted to our clinic for right basithoracic pain. Magnetic resonance imaging (MRI) 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 200 daughter vesicles were removed from the cyst. The rest of the giant cyst cavity was excised. (Ann Thorac Cardiovasc Surg 2004; 10: 118–9)

Key words: diaphragmatic, giant, hydatid cyst

Introduction

Hydatid disease, which is caused by the echinococcus granulosus tapeworm and is known as echinococcus or hydatidosis, has been acknowledged as a clinical entity since ancient times.[1)] The disease is a serious problem in which it is endemic. The primary hosts for the infecting organism are the members of the Canidae family, usually dogs, wolves, and coyotes. The intermediate hosts are sheep, cattle, and deer. Humans enter the cycle by contacting infected canine feces.[2)] Liver and lung are the most common sites of the disease, but it can also be seen elsewhere in the body. Extrapulmonary location of the disease in the thorax is very rare.[3)] Intrathoracic extrapulmonary locations are generally the mediastinum, pleura, pericardium and chest wall.[2-4)] Diaphragmatic localization is very rare with the incidence of around 1%, and most of these are generally associated with liver hydatidos.[2)] Herein we report a case of a giant hydatid cyst with unique diaphragmatic localization, without liver or lung involvement.

Case Report

A 34-year-old female patient was admitted to our department for right thoracoabdominal pain, aggravated by cough and deep breathing. Laboratory tests were normal except for mild leucocytosis. On physical examination hepatomegaly was established. Posterior-anterior chest roentgenogram showed a right-sided subpulmonic opacity. Ultrasonography revealed a giant cyst extended to both the thorax and abdomen which included multiple vesicles. A thoracoabdominal magnetic resonance imaging (MRI) was performed to distinguish the location of the cyst i.e. whether the cyst was related to the lung, liver or both. MRI revealed a giant lung hydatid cyst including multiple vesicles that was engaged to the diaphragm and pushed down on the diaphragm and liver excessively to the abdomen (Fig. 1). A right thoracotomy was performed. During the exploration, we saw a giant hydatid cyst on the diaphragm, 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 200 daughter vesicles were removed from the cyst. The rest of the giant cyst cavity was excised. During this the diaphragm was damaged. The diaphragm was repaired by an interrupted suturing technique. The patient was discharged from the hospital on the 10th postoperative day. Postoperative mebendazole therapy was started when she was discharged from the hospital. This therapy was maintained for two months of the follow-up the period. After one year, the patient was doing well .

Discussion

Although hydatid cysts are mostly seen in the liver and

From Departments of [1]Thoracic Surgery, [2]Chest Disease, and [3]Cardiovascular Surgery, Dicle University School of Medicine, Diyarbakır, Turkey

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Address reprint requests to Şevval Eren: Ofis Kooperatif mah., Cengiz apt. No. 11, Yenişehir, 21100 Diyarbakır, Turkey.

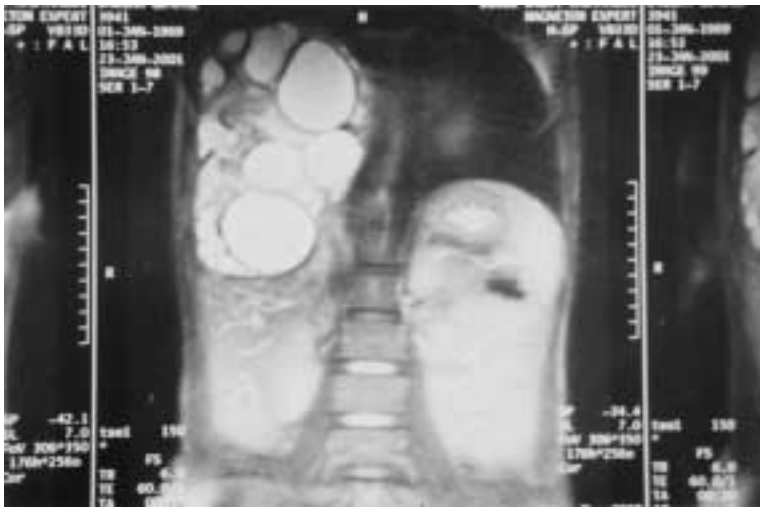

Fig. 1. Thoracoabdominal MRI showing a giant hydatid cyst including multiple daughter vesicles at the right lower thorax.

the lung, they can be located in various tissues.[2,3,5] Extrapulmonal but intrathoracic hydatid cysts are rare and mostly they are of mediastinal or pleural origin.[3,4] However, a diaphragmatic hydatid cyst is a more rare entity. In the few patients with diaphragmatic hydatid cysts, the patients also had a hepatic cyst at the same time of diagnosis or before[2,6,7] but, in unusual cases like ours only a diaphragmatic cyst occured without an additional hepatic cyst. This rare localization of the disease can be explained, according to Pinna et al.,[8] by the fact that, a great part of the liver is without peritoneum. Cysts located in this area are more likely to adhere to the diaphragm. But, as in our case this explanation is not valid because of absent hepatic or pulmonary hydatid disease. But according to de Vega et al. diaphragmatic localization of hydatid cyst is possible when the embryos reach that site by arterial or lymphatic circulation.[7] In our opinion, de Vega's explanation is more acceptable in our case because of only diaphragmatic localization without a hepatic cyst. In general, diagnosis of a hydatid cyst can be obtained easily through combined assessment of chest radiograph, ultrasonography and computed tomography (CT). But, as in our case, to evaluate a giant hydatid cyst, and its topographical relationships as well as diaphragmatic and hepatic involvement, sagittal and coronal scanned thoracoabdominal MR images are more favorable with respect to CT. In surgical treatment, the main principle is to empty the cyst, take out the daughter cysts and the germinative membrane and then excise as much as possible the pericyst through the thoracic incision. Generally, diaphragmatic repair is required after removal of the cyst,[3] as in our case.

In conclusion, unique diaphragmatic hidatid cyst is a very rare entity. In the preoperative period careful topographic diagnosis between the diaphragm, lung, liver and abdominal localizations should be made. Total excision of the cyst through the thoracotomy is an excellent approach.

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