

Ruptured hydatid cyst in a patient with shock

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Abstract: *Echinococcosis* is a severe helminthic zoonosis largely caused by *Echinococcus granulosus* and frequently encountered in endemic areas. The liver and lung are the most frequently involved organs. Cyst rupture into the peritoneal cavity represents a rare but serious complication. Herein, we describe an acute occurrence of anaphylactic shock due to a spontaneous rupture of hydatid cyst in a 21-year-old Turkish patient unwittingly infected by *Echinococcosis*. Resection surgery of the perforated cyst in combination with cleaning of the abdominal cavity was performed. The patient rapidly improved and no relapse occurred during a follow-up of 8 months. Anaphylaxis is a serious complication of hydatid cyst rupture and needs to be promptly diagnosed. The main objective of our report is to underscore this life-threatening complication that should be considered when anaphylactic shock of unknown origin occurs, even in non-endemic regions. Moreover, we emphasize the need for a radical surgical approach to avoid widespread dissemination.

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KEY WORDS: ruptured hydatid liver cyst;
anaphylactic shock;
albendazole

Introduction

Echinococcosis is a severe helminthic zoonosis largely caused by *Echinococcus granulosus* and is frequently encountered in endemic areas. The liver and lung are the most frequently involved organs. Cyst rupture into the peritoneal

cavity is a rare but serious complication. A 21-year-old Turkish female was admitted to the emergency department for generalized urticaria and anaphylactic shock. Her medical history was irrelevant. She had been complaining of abdominal discomfort for the last two months and suddenly experienced pruritus, urticaria, and dizziness. She then developed severe hypotension with need for high-dose vasopressors. Glucocorticosteroids and antihistamines were given. Abdominal computed tomography revealed a ruptured cystic mass occupying the right lobe of the liver (Fig. 1). Laparotomy was performed at once to resect the entire affected lobe of the liver together with local scolicide solution instillation and abdominal cavity cleaning. At the time of laparotomy, the cyst membrane was freely floating in the abdominal cavity



Fig. 1. Computed tomography image of intrahepatic ruptured hydatid cyst with inner membrane disconnection.



Fig. 2. Resected cyst membrane.

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(Fig. 2). Five biliary duct fistulae were underscored and sutured in combination with omentoplasty. Adjunctive chemotherapy with albendazole was administered in the post-surgical course. Pathological examination confirmed *Echinococcosis* and serological assays (detection by immunoblotting of specific antibodies and enzyme-linked immunosorbant assay) were positive for *Echinococcus granulosus*. Anamnesis did not provide any exposure to risk factors such as contact with sheep or dogs. She travelled once to Turkey two years ago. No other organ involvement was observed from this episode and the post-operative course was uneventful. The patient was followed up with magnetic resonance imaging and computed tomography that displayed no recurrence of the disease during a follow-up of 8 months.

Discussion

Hydatid disease or *Echinococcosis* occurs as a consequence of infection by the larval cestode *E. granulosus* and is endemic in Mediterranean regions, South America, and the Middle East.^[1] The clinical expression of cystic lesions depends on their size and location. In the present case, the only disclosure of the lesion was an unspecific abdominal discomfort that appeared during the previous months. Cyst perforation into the peritoneal cavity occurs rarely^[2] and can lead to anaphylactic shock. Computed tomography is the most sensitive means of diagnosing cyst rupture.^[3] In our case, a collapse of the cyst inner membrane was observed as well as cyst perforation (Fig. 1). Even though percutaneous drainage is sometimes recommended for selected cases, emergency surgery remains the only effective therapy for a ruptured cyst.^[4, 5] The surgical procedure consists of removing the cyst and possible daughter cysts spilled into the abdominal cavity^[6] in combination with peritoneal washing.^[4, 6] Biliary effusions are quite frequent^[7, 8] and must be ruled out. Suture of the cystobiliary communications together with omentoplasty is classically performed. Albendazole is indicated for six months to reduce the risk of distant recurrence.^[5, 9]

The infrequency of hydatid cyst rupture may lead to misdiagnosis. The main purpose of this report is

to highlight the possibility of such a diagnosis when anaphylactic shock without evident cause occurs, even in non-endemic areas. Moreover, we emphasize the role of a swift and radical surgical procedure including biliary leakage repair to prevent secondary dissemination and postoperative biliary complications.

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