

Ruptured hydatid cyst following minimal trauma and few signs on presentation

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ABSTRACT

Hydatid disease is a parasitic infection caused by *Echinococcus granulosus* characterised by cyst formation in any organ, although the liver is the most commonly involved. Hydatid cysts can rupture either spontaneously or following trauma. Surgical treatment can be life-saving. This paper reports the atypical presentation of a young girl admitted to the emergency department. She presented with pain on her palms due to falling down a few steps. Because of the rebound tenderness on the right upper quadrant of her abdomen on physical examination, bedside ultrasonography was performed to identify the underlying cause, and promptly revealed a 62 x 72 mm lobular cyst on the right lobe of the liver with free fluid in the subcapsular area. Shortly afterwards, urticaria developed. Fluid resuscitation, methylprednisolone and diphenylhydramine were administered intravenously. Afterwards she was taken to the operation room for unroofing, drainage and capitonage. In conclusion, primary care and emergency physicians should perform a complete physical examination on all admitted patients with vague symptoms and a high index of suspicion for a ruptured hydatid cyst, even following trivial trauma, especially in endemic regions.

KEYWORDS

Bedside ultrasonography, hydatid cyst, rupture, presentation

INTRODUCTION

Hydatid cyst is an infection of *Echinococci* and still represents a serious problem in endemic regions, especially in the Middle East, Mediterranean countries and Australia. It is a parasitic infestation caused by the larval stage of *Echinococcus granulosus* and develops by passing eggs from the excreta of infected dogs. The cyst enlarges slowly and is generally

asymptomatic until it reaches a certain size, shows a space-occupying effect or ruptures. Rupture of cyst can occur spontaneously or during surgery as well as due to trauma. Rupture by minor trauma is very rare and can produce anaphylactic reactions and fatal anaphylaxis. We describe a patient who after minimal trauma presented to the emergency department with scant physical signs.

CASE

A 18-year-old girl was admitted to the emergency department after falling down only a few steps from the stairs of the library, 10 to 15 minutes previously. She only complained of pain on the palms of her hands and stated that she had vomited once. On presentation, her Glasgow Coma Scale score was 15, blood pressure 110/80 mmHg, pulse rate 108 beats/min and temperature was 37 °C. Her physical examination was normal except for mild rebound tenderness on the right upper quadrant of her abdomen. White blood cell count was 18,100/mm³, eosinophilia was absent and the other laboratory tests were within normal limits. The bedside ultrasonography revealed a 62 x 72 mm lobular cyst on the right lobe of the liver and free fluid in

Figure 1. Extracapsular free fluid



the subcapsular area (*figure 1*). Approximately 10 minutes after presentation, general urticaria developed and it was progressive. Fluid resuscitation, methylprednisolone and diphenylhydramine were administered intravenously. Meanwhile, adrenaline was prepared to administer in case she needed it. She vomited again when she was being examined for abdominal sensitivity and rebound tenderness, and the area of urticaria increased. The patient turned out to have a rupture of a hydatid cyst and she was immediately taken to the operating room by the general surgeons. Unroofing, drainage and capitonage of the cyst were performed during the operation. She was started on 10 mg/kg/day of albendazole for six months and discharged after one week without any complications or sequelae.

DISCUSSION

Hydatid cysts result from infection by the parasite *E. granulosus*, and dogs are the definitive host. It is commonly located in the liver; however, it can be found in lungs or in any organ.¹ As the cyst of the echinococcus enlarges slowly and is generally asymptomatic, hydatid cysts undergo progressive enlargement and may eventually rupture¹⁻¹⁵ or spread into the bloodstream without rupture.²

Generally, in patients admitted with complications as anaphylaxis^{1,3-7} due to rupture, the findings clearly indicate the organ involved; sudden death often occurs.^{2,8,9} However, there are no reports of ruptured hydatid cyst with an unclear presentation.

Rupture of hydatid cyst is very rare and can occur spontaneously or iatrogenically,^{3,4} following serious injuries¹⁻¹⁵ or even minor trauma as in our paper. Falls are reported to be the most common mechanism of trauma.¹⁰ Also, rupture of hydatid cysts attributed to sporting activities and blunt trauma have been reported.^{10,11} Cysts may rupture into the peritoneal or pleural cavity, into the pericardium, the bile ducts, the gastrointestinal tract or even into blood vessels.^{1,2,9-11,14,15} Although computed tomography has a sensitivity of 100% in demonstrating cyst rupture, ultrasound is more practical and inexpensive.^{1,10,13} There is generally not much time before surgery as anaphylaxis is the most frequent cause of death in cases of hydatid cyst rupture.¹

The present patient fell down only a few steps and on arrival to the emergency room was only complaining of her aching hands. If a complete physical examination

had not been performed, the vague abdominal sign of an uncertain, localised, positive rebound tenderness would not have been noted until her condition deteriorated due to the ruptured cyst. The ruptured hydatid cyst was identified by ultrasound. In this way, the patient could be treated very rapidly.

In conclusion, therefore, important prerequisites for the management of ruptured hydatid cysts are a high index of suspicion on routine complete physical examination and confirmation by ultrasound as early as possible, especially in endemic areas.

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