

Clinical Note

Acute abdomen due to traumatic rupture of a hydatid cyst

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ABSTRACT

Hydatisidosis is a common disease in Spain; nevertheless, it usually shows no symptoms until its size or occupying effect produce symptoms. On many occasions, the hydatid cyst appears to us by chance in x-ray or ultrasound exams which have been carried out for other reasons. The cyst can rupture spontaneously or as a result of some trauma, causing painful symptoms and even anaphylactic shock. In this study we are presenting a case of acute abdomen as a result of the traumatic rupture of the hydatid cyst in the liver. The patient is a young man of 16 years of age, who is suffering from slight abdominal contusion and comes to the emergency department for this reason. In conclusion, we should include the traumatic rupture of a hydatid cyst among the less common causes of acute abdomen following abdominal contusion, given how common parasitism in Spain. The clinical diagnosis requires a combination of clinical information and different imaging methods, the most important being the abdominal ultrasound.

Key Words: *Hydatid cyst. Abdominal contusion. Traumatic rupture. Abdominal ultrasound.*

RESUMEN

Abdomen agudo por rotura traumática de quiste hidatídico

La hidatidosis es una zoonosis frecuente en España; sin embargo, suele permanecer asintomática hasta que su tamaño o el efecto ocupante de espacio determinan síntomas. En muchas ocasiones, el quiste hidatídico aparece de manera casual en estudios radiológicos o ecográficos realizados por otros motivos. El quiste puede romperse bien de forma espontánea o traumática, y provocar cuadros de dolor e incluso shock anafiláctico. Presentamos un caso de abdomen agudo, secundario a rotura traumática de quiste hidatídico localizado en hígado, en joven varón de 16 años de edad, que sufre contusión abdominal leve, por lo que consulta en nuestro servicio de urgencias. En conclusión, entre las causas poco frecuentes de abdomen agudo tras contusión abdominal se deben incluir la rotura traumática de un quiste hidatídico, dada la alta frecuencia de parasitación en nuestro medio. El diagnóstico clínico requiere la combinación de información clínica y métodos de imagen y destacar entre ellos la ecografía abdominal.

Palabras clave: *Quiste hidatídico. Contusión abdominal. Rotura traumática. Ecografía.*

INTRODUCTION

Hydatid disease is a parasitic infection produced by the larvae of *Echinococcus granulosus*. It is commonly found throughout the world and is widespread in Spain where incidence is of 5 to 9 cases per 100,000 inhabitants. Dogs are the final hosts for these parasites and they expel their eggs via faeces. People can accidentally ingest these eggs in contaminated food¹⁻³. There are no specific symptoms; in fact during the first few years of development the cyst may not show any

symptoms at all. Clinical manifestations often involve complications that arise as the cyst progresses. The resulting infection can give rise to high fever with important general involvement including septic shock. The cyst can rupture spontaneously or as the result of a trauma, which can cause serious pain and anaphylaxis accompanied by hives and even anaphylactic shock^{4,5}. The following case involves a hydatid cyst that had not been diagnosed until rupture after an abdominal contusion caused by a fall, leading to a critical condition requiring immediate diagnosis and treatment.

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Received: 6-3-2006
Accepted: 10-1-2007



CLINICAL CASE

A 16-year-old male patient without no relevant medical history fell and hit his right hypochondrium with a stick in the ground. Approximately one hour later a generalised reddish-purple skin rash developed followed by a temperature of 38°C accompanied by increasing abdominal pain eight hours afterwards after which the patient came to the emergency department.

Blood and biochemical tests were carried out and the following results were obtained: leukocytosis 14,000/mm³ with 91% neutrophils and a CRP of 12. An abdominal ultrasound was carried out following suspicions that the patient was suffering from acute abdomen (Figure 1). Afterwards, an abdominal CT scan was undertaken (Figure 2) clearly showing a phase II hydatid cyst according to the classification of Garbi, unilocular 5x5cm in segment 4 with liquid around the bladder, spleen, Morrison's pouch and the pelvis with a greater volume. Following indicating that the hydatid cyst had ruptured the trauma.

A laprotomy was carried out with washing and drainage of the abdominal cavity and the prominent dome of the hepatic hydatid cyst was removed. The patient evolved favourably and the temperature and hives disappeared. Antiparasitic treatment was initiated with albendazole 400mg every 12 hours in two 28-day cycles, which included a two week rest in the middle, and a general analytical examination during the control period.

DISCUSSION

Hydatidosis is a disease that is widespread throughout the Mediterranean region. The infestation of human beings as intermediary hosts takes place after the accidental ingestion of parasite eggs that have been expelled by dogs, the final hosts. After this, the eggs release embryos into the duodenum as they pass through and they reach the liver by travelling through the vena porta where the majority become trapped. Hydatid cysts are located most frequently in the liver and lungs but they have also been found in the spleen, brain, kidneys, eyes and bones.

Since the growth of hydatid cysts is slow they may not show signs of being present for many years until the moment they trigger symptoms by affecting adjacent organs because of their size. The release of hydatid cyst liquid post rupture is usually caused by a trauma or surgery⁶. After the rupture of the cyst the patient experiences an increase in eosinophils in the blood as well as itchiness, hives, skin swelling



Figure 1. An image of the hydatid cyst. The detachment of membranes shown in the ultrasound scan.

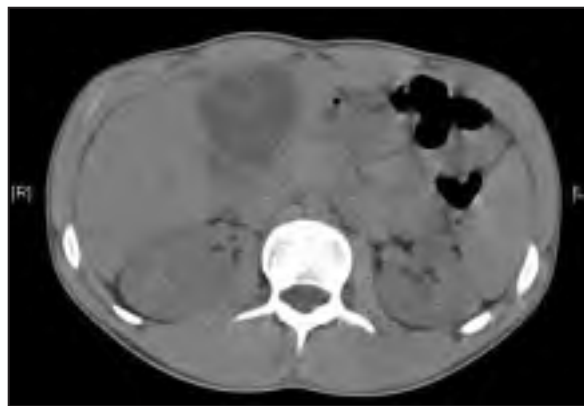


Figure 2. Phase II hydatid cyst according to the classification of Garbi, complicated by a rupture and caused by a previous trauma.

and even anaphylaxis^{7,8}, which can be fatal if it is a direct rupture. Sometimes the patient has a fever and acute abdominal pain. The leak of the cyst content helps the spread of the new scolices and makes the possibility of developing cysts in other organs, without having to pass through the final host to complete the cycle, more likely.

We should suspect anaphylactic shock in a patient who comes from an area where hydatidosis is common and who presents symptoms such as skin rash, hives, haemoconcentration and acidosis. The first two symptoms listed are typical of anaphylactic shock following the rupture of a hydatid cyst. It is crucial to restore the circulating volume using the appropriate treatment, initially with crystalloids and/or colloids. If this is not effective enough, vasopressors should be used and adrenalin in this case would be the treatment of choice. The use of H1 and H2 antihistamines seems controversial and corticoids can be effective in preventing prolonged anaphylaxis.

In many cases, the hydatid cyst appears by chance and is identified in x-rays that are carried out for other reasons. We can see the cyst in a simple x-ray of the lung as a round shadow with the density of water and well defined edges. In x-rays of the liver we either find a round image with calcium density if the cyst is completely or partially calcified, or we may find that the right dome of the diaphragm is raised. The ultrasound scan (which is not useful in the case of examining the lungs) shows a round image with slightly reinforced walls and internal echoes which denote the presence of multiple vesicles. If we suspect the tumour is hydatid or there is suggestive diagnosis in areas where this is common, medical examination should include a blood test and immunological tests which will provide a diagnosis of hydatidosis. Blood tests usually show a rise in leukocytes of over 5%. Indirect haemagglutination and ELISA tests are the most accurate and sensitive immunological tests available. Finally, patient examination should include an ultrasound if one has not already been carried out, and an abdominal CT scan which would allow us to confirm the diagnosis of hydatidosis and would provide valuable infor-

mation about the patient's condition such as; the degree of vascular compromise, secondary dissemination, the related cysts and content of the cyst which are all factors of great importance when planning an appropriate treatment strategy.

The treatment of choice for a hydatid cyst is surgical removal. If surgery is not an option either because of where the cyst is located, because there are multiple cysts or because the patient's general condition is unstable or if the patient is elderly, alternative treatment with benzimidazole derivatives such as mebendazole, albendazole and praziquantel is recommended. However, these are secondary treatments in the case of anaphylactic shock or in cases which are so serious that they require immediate attention. In conclusion, the traumatic rupture of a hydatid cyst should be included among the more unusual causes of acute abdomen following abdominal contusion. The following factors are necessary for this clinical diagnosis; a combination of clinical information, the patient being from an area where this is common (Spain for example) and the appropriate imaging methods, with abdominal ultrasound being the most important.

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