
CASE REPORT

HEPATIC HYDATID CYST PRESENTING AS ANAPHYLAXIS

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ABSTRACT

A young soldier was brought to the emergency of Combined Military Hospital (CMH), Multan in a collapsed state with two day's history of chest pain. He was resuscitated and placed on ventilator. While the rest of examinations were normal, ultrasound examination of the abdomen revealed a cystic mass in liver most likely to be hydatid. The patient was fully conscious the next day and was put on tab albendazole (200 mg BID). CT scan of the abdomen revealed a large cystic mass having inner undulating wall with watery content diagnosed as hydatid cyst in right lobe of liver. Since anaphylaxis was considered consequent to hydatid cyst perforation, surgery was carried out. Approximately 100 ml of haemorrhagic fluid was aspirated and 10% hypertonic saline instilled. After re-aspiration, cyst cavity was opened and endocyst completely removed. Portion of ectocyst projecting away from the liver edge was also excised. He made an uneventful postoperative recovery and was discharged with the advice to continue tab albendazole 200mg BID for four weeks and weekly follow-up in surgical OPD. He is doing well now.

KEY WORDS: *Anaphylaxis. Hydatid. Hydatid perforation. Liver.*

INTRODUCTION

Hydatid disease is a parasitic infestation caused by a tapeworm of the genus *Echinococcus*. The most commonly affected organs are the liver and the lung. Morbidity is usually secondary to free rupture of the echinococcal cyst with or without anaphylaxis, infection of the cyst or dysfunction of affected organs. The cyst of *Echinococcus granulosus* is commonly located in the liver and frequently causes no symptoms.¹ Clinical examination is unreliable in making the diagnosis. Serological testing has a broad range of sensitivity and specificity and is dependent on the purity of the antigens utilised.² Ultrasonography is the imaging modality of choice particularly in hepatic disease. CT best demonstrates cyst wall calcification and cyst infection.³ Liver hydatid cysts can be treated by medical or minimally invasive (laparoscopic and percutaneous) means or by conventional open surgery.² Anaphylactic reactions as a result of cyst perforation generally occur during interventions such as needle aspiration or open surgery; however, the spillage of cyst fluid with intravascular spread resulting from trauma may also trigger anaphylaxis.¹ There are instances of anaphylactic shock as the single presentation of hydatid disease of the liver.⁴

In this report we present a very rare case of hepatic hydatid disease, which presented as anaphylactic shock.

CASE REPORT

A young soldier of 25 years of age was brought to intensive care unit of CMH, Multan in a collapsed state. He had come to the radiology department to collect his report of chest X-rays where he collapsed. Two days ago he had presented to the medical department for right sided chest pain and was under

investigation. He was resuscitated and put on ventilator with ionotropic support. Clinical examination of the patient did not reveal a positive clinical finding. He was extubated the same day after 4 ¹/₂ hours. His initial ECG revealed Q3, T wave inversion in lead III, ST segment depression in V1-V4. Echocardiography and chest radiograph were within normal limits, though cardiac enzymes showed abnormality. Serum CPK was 864 u/l and CKMB 93 u/l. PT and PTTK were within normal limits. Blood complete examination revealed eosinophilia 40%. ALT was deranged at 160 u/l. Indirect haemagglutination test for hydatid disease was positive. Doppler study of the legs was normal. Ultrasound examination of the abdomen revealed a cystic mass of 7.8 x 6.7 cm in segments 5 and 6 of the liver. It had a cyst within cyst appearance, most likely to be hydatid. The patient was fully conscious the next day and was put on tab albendazole (200 mg BID). CT scan of the abdomen was carried out. It revealed a large cystic mass measuring 9.0 x 6.3 cm in segments 5 and 6. This mass had inner undulating wall with watery content. Conservative management for the hydatid continued. It was opined that anaphylaxis was consequent to hydatid cyst perforation. Therefore, surgery was planned. The cyst was approached through right Kocker's incision. This cyst occupied right lobe of liver and part of it was projecting on the visceral surface. Packs soaked in 10% hypertonic saline were placed around the swelling. Approximately 100ml of haemorrhagic fluid was aspirated and was refilled with 10% hypertonic saline. After re-aspiration, cyst cavity was opened and endocyst completely removed. Portion of ectocyst projecting away from liver edge was also excised. The patient made an uneventful postoperative recovery and was discharged on 4th postoperative day with the advice to continue tab albendazole 200mg BID for 4 weeks and followed-up weekly in surgical OPD for 4 weeks. Stitches were removed on 9th postoperative day. It is more than 6 months now and the patient is symptom and sign-free with negative serology and ultrasound.

DISCUSSION

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"Hydatids" or watery cysts have been seen in animals and humans since ancient times. Hydatid cyst of the liver was first managed at the Edinburgh Infirmary in 1785 by James Gregory. Following the death of the patient, an autopsy disclosed lesions characteristic of a condition, eventually labeled as "echinococcosis of the liver" - today one of the most common parasitic diseases in sheep raising regions of the world.⁵

The larval stages of *Echinococcus granulosus* are involved in human liver: cystic echinococcosis (CE or "hydatid disease"). This disease have tight links with allergic response because of the immunological characteristics that contribute to maintain the larvae in their human host as well as their potential in inducing clinical anaphylactic reactions in some patients. Clinical observations in patients and data obtained from mass screenings in various countries have identified this disease as "polar disease," i.e., disease where immunological background of the patients was related to the clinical presentation and course. In particular, abortive cases (i.e., spontaneous cures) have been found in many subjects in endemic areas. On the other hand, immune suppression was associated with severe disease. Experimental and clinical studies have shown that Th1-related immune response was associated with protection and Th2-related response was associated with parasite growth. Anaphylactic reactions, including urticaria, edema, respiratory symptoms, and anaphylactic shock due to spontaneous or provoked rupture of the parasitic cyst, are well known in cystic echinococcus. Echinococcus-specific IgE is present in most of the patients and associated with severity. Specific histamine release by circulating basophils stimulated with *E. granulosus* antigens is present in all patients with CE.

However, despite the potential risk of allergic reactions, the dogma "never puncture a hydatid cyst" is no longer valid. International experience of therapeutic technique of "puncture, aspiration, injection, re-aspiration" of hydatid cysts developed at the beginning of the 1980s has proved to be successful in a variety of selected indications that have been reviewed by WHO recommendations. A better understanding of the immunological background of echinococcosis in humans has led to new therapeutic developments, such as immunomodulation using interferon alpha.

Th2-driven immunological response and IL-10-related tolerance state are common characteristics of atopic allergy and echinococcosis. The example of echinococcosis stresses the ambiguous links that exist between parasitic and allergic diseases, and show the usefulness of comparing these diseases to better understand how immune deviation may lead to pathological events and to find new therapeutic and or preventive agents.⁶

This was an unusual case. The patient presented with anaphylactic shock which was quite misleading. Later at surgery the cyst contents were haemorrhagic. It was deduced that there was spontaneous haemorrhage (probably after insignificant trauma as the cyst was projecting outside the liver edge) into the cyst which lead to systemic absorption of cyst contents and resulted in anaphylaxis. The vague chest pain was probably related to pre-haemorrhagic state.

Otherwise the main complications are infection, biliary duct fistula, and rupture into the peritoneum or chest. Diagnosis has become easier with ultrasonic imaging and CT scanning. Surgery remains the most effective treatment but postoperative complications arise in 30% of cases, particularly when the surgical approach is conservative. Radical surgical approaches give better results and should be used in most cases. Biliocutaneous fistula and infection of the residual cavity are the most common postoperative complications and result in prolonged hospitalization and excess costs. New therapeutic strategies incorporate endoscopic, percutaneous, and medical therapies with surgery and have led to improvement in morbidity and mortality. Until immunization becomes a possibility, preventive measures are necessary to avoid disease recurrence.^{7,8}

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