Anaphylactic Shock Due to Unruptured Hepatic Hydatid cyst Complicated by Multiple Intrahospital Infections

Çoklu Hastane İçi Enfeksiyon İle Komplike Rüptüre Olmamış Karaciğer Hidatik Kisti Nedeniyle Anafilaktik Şok

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ABSTRACT

Anaphylactic shock due to unruptured hydatid cyst is a rare complication of hepatic echinococcosis. Here, we present an unusual case of unruptured hydatid cyst causing anaphylactic shock followed by appendicitis, ileus, and complicated by septic condition due to multiple intrahospital infections. Decision of the surgical cyst removal at the right moment and appropriate antimicrobial treatment are key factors for a positive outcome. *(Turkiye Parazitol Derg 2014; 38: 261-3)*

Keywords: Anaphylactic shock, hepatic hydatid cyst, intrahospital infections.

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ÖZET

Rüptüre olmamış hidatik kist nedeniyle anafilaktik şok karaciğer ekinokkozunun nadir bir komplikasyondur. Burada apandisit ve ileusu takip eden ve çoklu hastane içi enfeksiyon nedeniyle septik durum ile komplike olan anafilaktik şoka neden olan rüptüre olmamış alışılmadık bir hidatik kist olgusu sunmaktayız. Kistin cerrahi olarak çıkarılması için doğru zamana karar vermek ve uygun antimikrobiyal tedavi olumlu sonuç için önemli faktörlerdir. *(Turkiye Parazitol Derg 2014; 38: 261-3)*

Anahtar Sözcükler: Anaflaktik şok, karaciğer hidatik kisti, hastane içi enfeksiyonlar

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INTRODUCTION

Echinococcosis as a systemic disease may lead to many complications, including rupture of echinococcal cysts and anaphylaxis as an immune response (1, 2). Unruptured echinococcal cyst as a cause of anaphylaxis is a rare complication of echinococcosis (3). The impact of nosocomial infections in the deterioration of basic clinical condition has been a common problem, even in large medical centers (4, 5). Here, we present a case of anaphylactic shock caused by unruptured hepatic hydatid cyst, complicated by ileus, appendicitis and followed by a series of nosocomial infections.

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CASE REPORT

A 57-year-old man was admitted to our clinic for treatment of echinococcosis, septic condition, and *Clostridium difficile* infection. Medical history did not reveal any information about previous hypersensitivity reactions, physical traumas, or other diseases. In February 2010, the patient was diagnosed with hepatic echinococcosis on the basis of positive serologic and ultrasonographic findings. Unfortunately, treatment was not started due to the patient's lack of interest.

On April 20, 2011, the patient suffered a severe anaphylactic shock; therefore, because of immeasurable blood pressure and cardiorespiratory distress, he was reanimated and mechanically ventilated. From April 20th to May 6th, the patient was hospitalized in the regional health center. On the day of admission, the patient was found to have ileus of the small and large intestines; so, he underwent surgery. During surgery, appendicitis and an echinococcal cyst in the right lobe of the liver were revealed as a secondary finding. Hydatid cyst was not removed during the intervention. Exploration of the abdomen during the surgery showed no visible cystic lesions. Hepatomegaly and the hydatid cyst were determined by computed tomography (CT), while no free fluid was seen. A few days after the intervention, the operative wound began to suppurate. Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Pseudomonas aeruginosa (P. aeruginosa*) were isolated from the wound swab, for which he was treated with imipenem cilastatin. On May 6th, the patient was referred to the clinic for the further treatment of general surgery. The patient's condition worsened because of sepsis and severe form of colitis caused by *C. difficile*. The patient was treated with meropenem due to persistence of MRSA and *P. aeruginosa* in the wound swab. Multi-slice CT (MSCT) confirmed the CT findings, describing a septated cystic lesion of 80 mm in diameter in the sixth segment of the liver (Figure 1). Further treatment of the patient (May 30th-June 17th) was continued at the clinic for infectious diseases. The patient had symptoms of sepsis, with extremely variable clinical, laboratory, radiological and haematological parameters. Abdominal ultrasonography revealed that liver had a rough echostructure with cystic formation in the right lobe, with thick walls and diameter up to 84 mm. *P. aeruginosa, Acinetobacter spp., and Klebsiella spp.* were isolated from the wound swabs. *Enterobacter spp. and Proteus mirabilis* were isolated from blood cultures (which were treated according to the antibiogram with netilmicin, amikacin, imipenem, and cilastatin).

Results of immunodiagnostic analysis in the detection of IgG antibodies to *Echinococcus granulosus* revealed positive results, including enzyme-linked immunosorbent assay, indirect hemagglutination assay (titer of 1:1024), and immunofluorescence test (titre of 1:160).

The patient was administered mebendazole, 250 mg/12 h per os, due to the lack of albendazole.

Besides the mentioned therapy, he was treated with antimycotic, substitutive (fresh-frozen plasma, washed red blood cells, human serum albumin, potassium chloride), symptomatic, and cardiologic therapy.

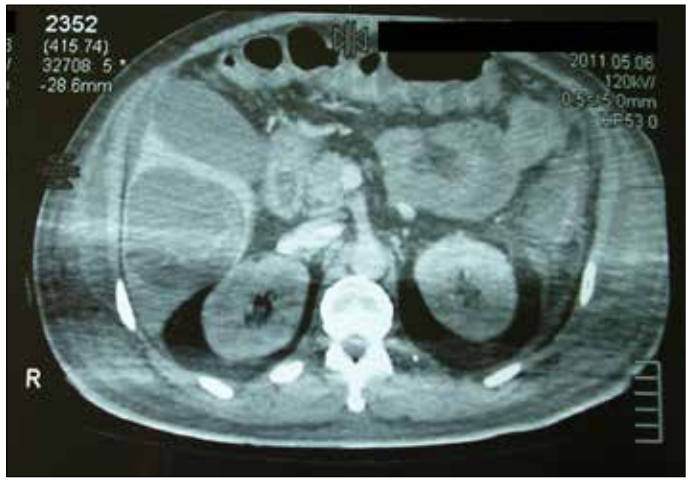

Figure 1. Multi-Sliced Computed Tomography presentation of the unruptured echinococcal cyst

The patient was discharged from hospital to begin outpatient treatment on June 17th in a good general condition, afebrile, with stable vital signs. The stools have normalized with a negative result of *C. difficile* test. Parameters of acute inflammation have decreased while blood, and wound cultures have become negative. Further controls by the attending infectologist have been recommended, along with continuation of the antiechinococcal therapy.

DISCUSSION

An anaphylactic reaction is a known complication of cystic hydatid disease, which usually occurs after trauma or during medical procedures. It appears due to the stimulation of the basophil-bound echinococcal antigen and consequential release of histamine (6). Nontraumatic microscopic cyst leakage into the circulation is an uncommon cause of anaphylaxis, which is rarely reported in literature (3). Abdominal ultrasonography revealed an intact cyst, with no changes in size, as well as free abdominal fluid, which indicated the microscopic leakage of the cyst contents. In our patient, the cystic walls were intact; so, high intracystic pressure must have been the cause of leakage of cystic fluid into the circulation. In previous studies, rare complications of echinococcosis have been reported to be appendicitis and ileus (7, 8). However, these studies describe visible intraperitoneal cysts on the appendix, which was not the case in the reported patient.

Cholangitis, sepsis, acute abdomen, intraperitoneal bile leak, extensive inflammatory reaction, and anaphylactic shock associated with rupture are the reasons for urgent surgery. However, if the patient is not suffering from an urgent illness, surgery can be postponed to a more suitable time (8). Regardless of anaphylactic shock, medical consilium had decided to postpone cyst removal surgery after stabilization of the patient's condition and all the antiparasitic therapy cycles administered, given that the cyst was intact. Surgical wound suppuration worsened the patient's condition, ultimately causing sepsis. Isolates were treated according to the antibiogram, long-term at high doses, which brought the treatment into a vicious circle, having in mind the appearance of *C. difficile* colitis.

CONCLUSION

Although anaphylactic reaction and shock due to hydatid cyst are not common, it should be considered as possible causes in every patient with hydatid disease who develops shock with no other obvious causes. When complicated by serious intrahospital infections, the right moment of the surgical cyst removal should be briefly discussed.

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