

## A case of cyst hydatid have a family history with pulmonary, hepatic and splenic involvement

*Ailesinde pulmoner, hepatik ve splenik tutulum öyküsü olan bir kist hidatik olgusu*

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### Abstract

Cyst hydatid is a parasitic disease seen as hydatid cysts in primarily lung and liver. Although hydatid cysts may remain as asymptomatic during a long time, they may become a symptomatic depending on the rupture and pyogenic infection. The incidence of cystic echinococcosis (CE) in endemic areas ranges from 1-220 cases per 100,000 inhabitants, while the incidence of alveolar echinococcosis (AE) ranges from 0.03-1.2 cases per 100,000 inhabitants, making it a much more rare form of echinococcosis. Infestation with *E vogeli* is the rarest form of echinococcosis and is reported mainly in the southern parts of South America. With this case, we aimed that both review the literature data and reawaken the requirement of family scanning in close relatives, because of pulmonary, hepatic and splenic involvements are coexist in this case.

**Key words:** Cyst hydatid, emergency department, pulmonary-hepatic-splenic involvement

### Özet

Kist hidatik primer olarak karaciğer ve akciğerde görülen parazitik bir hastalıktır. Hidatik kistler uzunca bir süre asemptomatik kalabilmelerine rağmen, rüptür ya da piyojenik enfeksiyona bağlı olarak semptomatik olabilirler. Endemik bölgelerde kistik echicoccosis (CE) insidansı 100.000 kişide 1-220 arasında değişirken, alveolar echicoccosis (AE) insidansı 0.03-1.2'dir ve bu oranlar *Echinococcosis*'in nadir olduğunu gösterir. *E. vogeli* ile infestasyonlar, Echinococcosis'in nadir formudur ve genellikle Güney Amerika'nın güney bölgelerinde bildirilmektedir. Bu olguya, pulmoner, hepatik ve splenik tutulumları olan bir hastada yakın akrabaların inceleme gerekliliği ve literatürün gözden geçirilmesi amaçlanmıştır.

**Anahtar sözcükler:** Kist hidatik, acil servis, pulmoner-hepatik-splenik tutulum

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### Introduction

Cyst hydatid is a infection generated by larva of *Echinococcus granulosus* parasite (or the phase namely metasestode). In adults, the infection shows mainly liver involvement and secondly lung involvement. The spawn of *E. granulosus*, which ingested by intermediate host in contaminant foods and beverages, is opened in bowel; freed oncosphere come to liver, exceeding wall of bowel via blood and lymph circulation. While %50-70 all of

cases presents liver location, secondly lung echinococcosis has been seen at rate of %20-30. The case of splenic cyst hydatid has been seen at rate of %2-3. Cyst hydatid presents symptom according to involved organ. In this case report, hepatic, pulmonary and splenic cyst hydatid case with nonspecific symptoms such as cough, chest pain, hemoptysis, abdominal pain reflecting to left shoulder and fever and have radiologically suspected chest radiography, was presented with ultrasonography and computed tomography imaging, thereby reviewing literatures [1-3].

Morbidity is usually secondary to free rupture of the echinococcal cyst, infection of the cyst, or dysfunction of affected organs. Examples of dysfunction of affected organs are biliary obstruction, cirrhosis, bronchial obstruction, renal outflow obstruction, increased intracranial pressure secondary to mass, and hydrocephalus secondary to cerebrospinal fluid outflow obstruction. In CE, mortality is secondary to anaphylaxis, systemic complications of the cysts (e.g., sepsis, cirrhosis, respiratory failure operative complications. In clinical cases of AE, the mortality rate is 50-60%. This figure reaches 100% for untreated or poorly treated AE. Sudden death has been reported with AE in asymptomatic patients (autopsy diagnosis). Because of the restricted geographic distribution of the echinococcal worms, persons of certain races are affected more commonly than others; however, the parasite has the capability of infecting persons of all races equally. No sexual predilection is recognized. The cysts grow slowly, and a cyst is rarely diagnosed during childhood or adolescence unless the brain is affected. CE is a disease of younger adults, with an average age at diagnosis of 30-40 years. AE is a disease of older adults, with an average age at diagnosis of older than 50 years [1].

### Case report

A 28 years old male patient presented to our emergency with complaint of abdominal pain especially on left upper quadrant for two weeks and bleeding in company with cough and sputum for two days. In his history, there was tonsillectomy 10 years ago and knee operation 13 years ago. In his family history, there were diabetes mellitus, hypertension and FMF in his mother and history of thorachotomy had been performed due to cyst hydatid in his father. On physical examination, vital findings were normal. On the chest radiography, there was 2-3 sharply demarcated radio opaque images at diameter of 3-4 cm in paracardiac area. On the abdominal ultrasonography, there were numerous cystic lesions that biggest of them is in dimensions of 4x3 cm and it is sharply demarcated in the both lobes of liver. A sharply demarcated cystic lesion in dimensions of 5x4 cm was observed in the lower lobe of spleen. On the computed tomography of thorax, while 5-6 sharply demarcated nodular cystic compositions at diameter of 3.5 cm were observed, there was infiltration area that surrounded the cyst located in anterobasal segment (ruptured cyst?). On the lower and upper abdominal computed tomography, There were numerous cystic lesions with a maximal diameter of 4x3 cm and they were sharply demarcated in the both lobes of liver, and in addition, a sharply demarcated cystic lesion in dimensions of 5x4 cm was observed in the lower pole of spleen. Cyst hydatid with liver, lung and spleen involvement was diagnosed in this patient presented to our emergency service with symptoms of hemoptysis and abdominal pain. The cystotomy was performed to the cyst be located in lateral segment of upper lobe, and germinative membrane was excised. Pus was appeared during cystotomy was performed to the cyst be located in posterobasal segment. We found the second cyst by pneumotomy and excised its germinative membrane. The excised cyst had no bronchial opening.

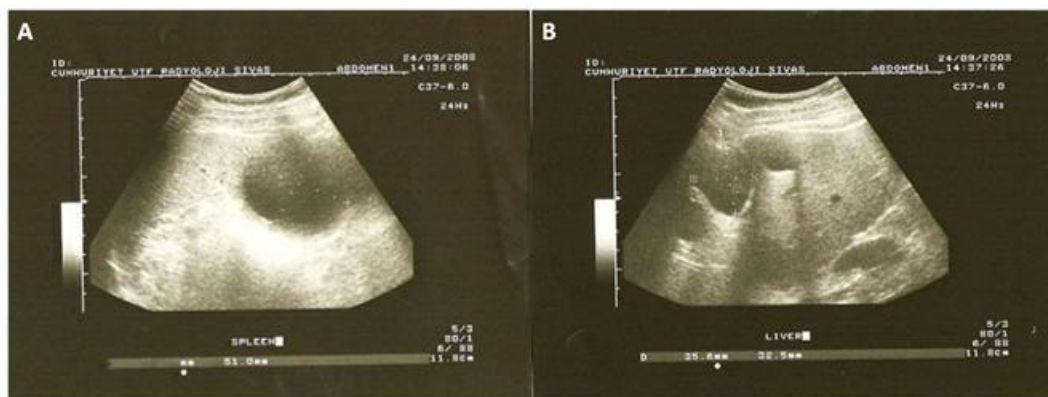
### Discussion

Cyst hydatid is endemic in several societies which dogs and humans are close proximity. This disease is seen commonly in areas which husbandry especially sheep and cattle breeding are common in our country. Although the pathogen of this disease is *E. granulosus*, *Echinococcus alveolaris* may also lead to this disease. Mature parasite live in small bowel of dogs and canidae that are end hosts. The eggs that discarded by end host

are infective for intermediate hosts (human, goat, cattle, sheep etc.). The unfavorable human for continuation of parasite generation is also in a condition of intermediate host. The eggs ingested in human bowel may be carried to various organs such as kidney, lung, spleen, brain, bone, by means of transformed to embryo in bowel, migrate to blood and some of them transported from liver to systemic blood circulation. This disease is appeared with symptoms pertain to primarily a slowly growing benign tumor. Usually, this disease is acquired in infancy and is detected in third or fourth decades [1-4].

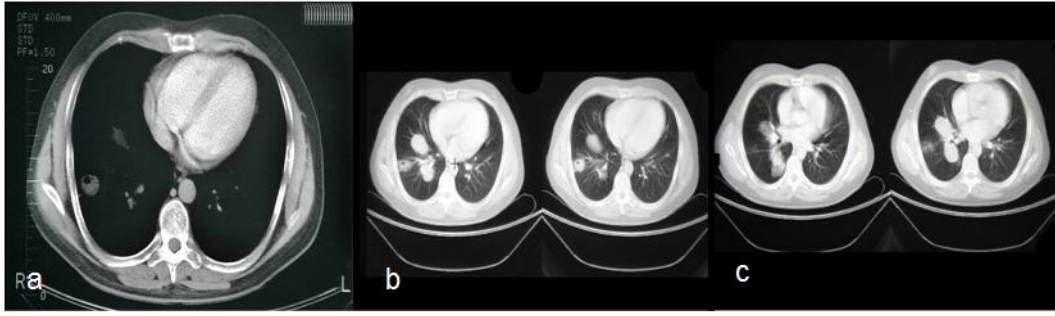
Clinical presentation may be changed depending on location area, size and pressure of the cysts. The diagnosis of cyst hydatid is established by anamnesis, ultrasonography and other techniques of radiological imaging (chest radiography, computed tomography, magnetic resonance imaging etc.), microscopic examination and serological tests. While cyst hydatid settle mostly liver, lung involvement is more frequent [2-6, 9]. The most of cysts is asymptomatic. Symptoms of disease appear according to expansion of cyst and involved organ [2]. It was informed that diameter of cysts may increase about 1 or 2 cm within one year. In case of lung involvement, chest pain, cough and hemoptysis are frequent findings. While oval or spherical opacities are diagnostic findings in non-complicated lung cysts on chest radiography, images of air-fluid plane, lotus and meniscus finding are diagnostic findings in complicated cysts. Right paracardiac opacity was seen in the chest radiography of our case. But water lily and meniscus signs were not present [2, 3, 7-11].

Cystic lesions may be observed on ultrasonography. Ultrasonography is highly sensitive to showing germinal vesicles in the cystic lesions. Numerous septate cysts, girl vesicles and echogenic materials lead to lotus sign. Cystic lesions were seen with ultrasonography in spleen and in all of two hepatic lobes (Figures 1A and B).



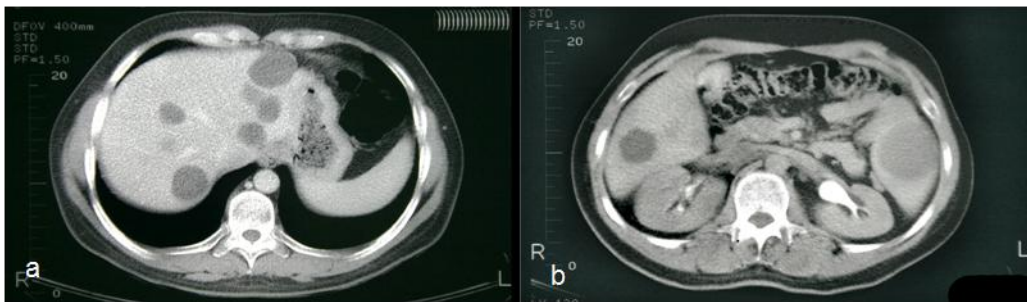
**Figure 1. A. Cystic lesion in spleen. B. Cystic lesions in hepatic lobes.**

The computed tomography has been revealing peripheral tissue expansion and peripheral calcifications of the lesions. In thoracic computed tomography 5-6 regularly limited nodular cystic lesions were seen in right inferior lung lob and an infiltration area was around a cyst in the anterobasal segment (Figures 2A, B, and C). Cystic lesions were seen in the both of the hepatic lobes and in spleen (Figures 3A and B).



**Figure 2. A, B, and C. In thoracic computed tomography 5-6 regularly limited nodular cystic lesions were seen in right inferior lung lob and an infiltration area was around a cyst in the anterobasal segment .**

While exact anatomical localization of lesion can be revealed by magnetic resonance imaging (MRI), its relationship with peripheral tissues can also be determined. While T1-weighted images of MRI show that heterogenous, decreased intensity, peripheral hypointense ring (depending to its fibrous content), floating membranes with low signal intensity, T2-weighted images show that cyst with increased intensity, hypointense ring (pericyst) and floating membranes with mid-low intensity [12-15]. Radiological findings are not specific [16].



**Figure 3. A and B. Cystic lesions were seen in the both of the hepatic lobes and in spleen.**

Differential diagnosis should be established with abscess and cystic tumors. Cyst hydatid can be differ from abscess and cystic tumors in terms of there are no a contrast dyeing wall, peripheral edema and no contain mural nodule, other cystic lesions are no spheric shaped [17-18]. Basic treatment procedure of hydatid cyst is excising of cyst by surgical method. However, interventional radiological operations have an important role in treatment, because cyst structure is convenient to drainage. Drainage and intra-cystic local treatment are effective interventional radiological treatments in cases with single cyst or with cysts which contain little cavity. Albendazole, mebendazole, praziquantel are most frequent used drugs in medical treatment [2, 8].

In conclusion; patient who comes to emergency with hemoptysis, in the closely areas which is made animal breeding the farmers must been made radiologic carding from the point of organ involvement and that is beneficial that the carding in the patient's close relatives. Sometimes in some studies when we do cost accounting and we think the primer relative carding is unnecessary, like in our fact in endemic area and in general involvement happens when we need surgical treatment because of treatment's acute and for the labor loosing we think it must be put on the agenda.

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