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CASE REPORT

# Massive Hemoptysis Due to Hydatid Cyst: Case Report

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## ABSTRACT

*Hydatid disease of the lung which usually caused by Echinococcus granulosus is quite uncommon. Common presenting features of the disease are cough, dyspnea, fever, chest pain and hydaptysis. Massive hemoptysis is an unusual presentation of the disease. In this report we describe a 60-year-old woman who presented with massive hemoptysis due to hydatid disease of the lung. Although it is rare, hydatid disease should be considered when a patient presents with massive hemoptysis especially in countries where the disease is endemic.*

***Key words:*** *Massive hemoptysis, Hydatid cyst, Lung*

## ÖZET

### Akciğer Kist Hidatiğine Bağlı Masif Hemoptizi: Olgu Sunumu

*Akciğer kist hidatiği ekinokokkus granulosusun neden olduğu nadir bir hastalıktır. Hastalığın yaygın prezentasyon şekli; öksürük, dispne, ateş, göğüs ağrısı ve hidaptisis şeklindedir. Masif hemoptizi hastalık için yaygın olmayan bir prezentasyondur. Bu olgu sunumunda akciğer kist hidatiğine bağlı masif hemoptizi ile başvuran 60 yaşında bayan hastayı anlatacağız. Nadir de olsa kist hidatiğin endemik olduğu ülkelerde masif hemoptizi şikayeti ile başvuran hastalarda kist hidatik akla getirilmelidir*

***Anahtar kelimeler:*** *Masif hemoptizi, Kist hidatik, Akciğer*

## INTRODUCTION

Hydatid cyst is a zoonotic human infection caused by the larval hydatid worm of *Echinococcus granulosus.* Humans can become accidentally involved in the life cycle of the parasite by ingesting the eggs shed in the feces of the infected definitive host. The disease is endemic in many Mediterranean, Middle East and Asian countries. The prevalence and incidence are predicted as 50/100.000 and 2/100.000 annually, respectively[1,2]. Common presenting features of the disease are cough, dyspnea, fever, chest pain, and hydaptysis. Massive hemoptysis is an unusual presentation of the disease.

In this report, we describe a 60-year-old woman who presented with massive hemoptysis due to hydatid disease of the lung.

## CASE REPORT

A 60-year-old woman, suffering from hemoptysis followed by sudden cough, was admitted to the emergency department. She described her hemoptysis as a mixture of blood and dense fluid. On admission, her blood pressure was 106/62 mmHg, pulse 108 beats per minute, respiratory rate 22 breaths per minute, and body temperature 37.5°C. Laboratory findings revealed: alanine transaminase 11 U/L, aspartate transferase 21 U/L, hemoglobin (Hb) 9.9 mg/dL, hematocrit (Hct) 30.8%, mean corpuscular volume 85 fl, prothrombin time 14.8 seconds, international normalized ratio (INR) 1.14 seconds, and white blood cell (WBC) 14.9 x 10.e3/µL. Her chest radiograph revealed a 85 x 60 mm cavitary lesion of the right lower lobe of the right lung.

A computed tomography (CT) scan revealing a cavitary lesion included an image of a germinative membrane, compatible with perforated hydatid cyst roughly 10 cm in diameter in the right lower lobe of the right lung. Ultrasonography (USG) showed no cystic lesion in the liver or in any other solid organ. She underwent right thoracotomy followed by cystectomy. The pathology of the excisional material obtained was reported as hydatid cyst (B11877-2009). She was discharged on postoperative day five.

## DISCUSSION

Hydatid cyst disease is usually asymptomatic. Cough, dyspnea, fever, chest pain, and hydaptysis are common presenting features; however, massive hemoptysis is a rare sign. The most significant symptom leading toward diagnosis is expectoration of fluid or membrane of the cyst due to perforation (hydaptysis). The overall status of the patient may deteriorate markedly after cyst perforation. Shortness of breath and chest pain may advance. Rupture of cysts may cause death due to anaphylaxis. In our case, cough, hemoptysis and hydaptysis were observed.

Hemoptysis is commonly caused by tuberculosis, bronchiectasis, trauma, and bronchogenic carcinoma. Parasitic etiology is rare. Erosion due to pressure or obstruction caused by bronchial infection can be responsible for the mechanism of hemoptysis. Rupture of the cyst into the bronchus can result in massive hemoptysis[3]. Expectoration of 100 mL to 600 mL in 24 hours is what most authors use in clinical reports to define massive hemoptysis[4,5]. Tekinbas et al. reported a 17-year-old male suffering from massive hemoptysis, finally diagnosed as hydatid cyst disease as described in our case[6]. Heinzlmann et al. reported a 33-year-old female suffering from recurrent hemoptysis, low grade fever, fatigue, loss in weight, and itch, who was finally diagnosed as hydatid cyst disease in light of the serologic tests and radiologic assay[7].

The liver is the most common organ involved, followed by the lungs, which accounts for 10-30% of cases. The lungs are the most common organ involved in children. Solitary, multiple, and ruptured or infected presentation of hydatid cyst in the lungs was reported in 51%, 25% and 24%, respectively[8]. It is expected that most cases of hydatid cyst in the lungs involve the right lower lobe, as reported in our case.

The results of routine laboratory blood work are nonspecific and have limited diagnostic merit. Eosinophilia occurs in 25% of patients and is not specific for diagnosis. The physical examination rarely provides valuable clues leading to the diagnosis. History of living in an endemic region is a valuable parameter. Expectoration of membrane and fluid of the cyst has a diagnostic value for hydatid cyst disease.

Radiologic imaging is the most indicative method, which may reveal more information about the diagnosis. On chest radiograph, hydatid cysts are defined as simple (not perforated) or complicated (perforated). The radiologic manifestations of simple cysts consist of sharply marginated, spherical or oval masses in 70% of patients, while multiple cysts are seen in 30% of patients. Simple cysts are found to demonstrate sunset sign and egg shell calcification. Complicated cysts may reflect air crescent sign, water lily or Came-

lot sign, double arc sign, incarceration of germinal membrane, aeric sign, and hydroaeric sign. Evaluation of patients diagnosed with hydatid cyst with USG is mandatory. Determining similar cysts in the liver and lungs is important for confirmation of the diagnosis and assigning the treatment protocol. CT is superior to plain radiographs in evaluating hydatid cysts and determining the developing complications.

Surgery remains the primary treatment of hydatid cyst of the lungs. Conservative medical therapy may suffice in some conditions. Nevertheless, medical treatment is combined with surgery in some conditions for thorough cure. Medical treatment is applied in the presence of uncomplicated small cysts, multiple cysts, refusal of surgery, and intolerance of surgery[9].

In conclusion, massive hemoptysis is observed in 10% of all patients with hemoptysis, and severe lung diseases or systemic disease are almost always due to massive hemoptysis. Rupture of a hydatid cyst, one of the less common causes of massive hemoptysis, should be considered in countries where the disease is endemic.

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