

## A mismanaged case of hydatid disease of lung

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### Abstract

We report a 50 years old female who was admitted to our clinic for investigation of pneumonia. She had responded to antibiotics but full regression was not observed. Chest x-rays demonstrated lobar consolidation. Fiberoptic bronchoscopy revealed a vegetative whitish membranous material in the medial segment of right middle lobe. Pathological and microbiological examination of the bronchoscopic material showed features of a pulmonary hydatid cyst with cuticle. The diagnosis was confirmed by serology and lobe resection. Patient had presented in an unusual way for diagnosis of hydatid cyst.

**Keywords:** Hydatid cyst, Bronchoscopy.

### Introduction

Hydatid disease is caused by larvae of *Echinococcus* and most of the infestations in humans are caused by *Echinococcus granulosus*. Hydatid disease is one of the major health problems in endemic countries including Turkey.<sup>1</sup> The incidence of infestation is 2 per 100 000 and prevalence is 50-400 per 100 000 in Turkey.<sup>1</sup> Most common localization of the disease is the liver (65%) followed by the lungs (25%).<sup>2</sup> Disease is mostly asymptomatic but symptoms due to location and size of the cysts, and due to rupture of the cyst can occur. Most common symptoms are cough, dyspnoea, fever, chest pain and haemoptysis.<sup>2</sup> But these are not specific findings for hydatid disease.<sup>2</sup> The diagnosis of complicated pulmonary hydatid cysts is hard because rupture may change the typical radiological picture.<sup>1</sup> The diagnosis of pulmonary hydatid disease is primarily based on clinical and radiological findings. Bronchoscopy is usually unnecessary but it can be performed for differential diagnosis in cases of atypical radiological appearance.<sup>1,3</sup> We report a case evaluated for non resolving pneumonia and haemoptysis in which diagnosis was made by bronchoscopy.

### Case Report

A 50 year old female patient was admitted with a 3 month history of haemoptysis. Physical examination, full blood count and biochemical analysis were normal. She had a 20 packet/year smoking history. In her medical record, she had a past history of pneumonia which was 3 years ago and at that time a 2.2 cm solitary pulmonary nodule located at the

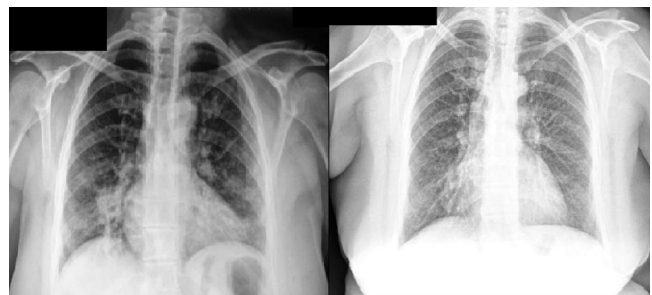


Figure-1: (a) Left; First chest X ray which was taken 3 years ago showing a solitary pulmonary nodule at the right perihilar localization. (b) Right; New chest X ray showing infiltration at the right paracardiac localization.

right perihilar location was detected in her chest X ray but patient did not accept any further intervention and remained asymptomatic upto date (Figure-1a).

Chest X ray showed infiltration at the right paracardiac localization (Figure-1b). Computerized tomography of the thorax revealed mediastinal lymphadenopathy with a diameter of 15 mm, consolidation located at the right middle lobe containing air bronchogram and with adjacent asiner nodules and ground glass opacification. Tumour, tuberculosis, pneumoni, hydatid disease were taken into differential diagnosis. Sputum acid fast bacteria evaluation taken three times were negative. Because there was a suspicion of tumour and because the patient did not accept intervention PET (positron emission tomography) was taken to exclude malignancy although it is not a first line of investigation in suspected malignancies. PET revealed low SUV max value (2.8) in the lymph nodes and right middle lobe consolidation area and this was interpreted as inflammation.

The symptoms of our patient were in accordance with hydatid disease but she did not have a typical radiological picture. Patient accepted a bronchoscopic evaluation because her haemoptysis continued. Fiberoptic bronchoscopy detected a vegetative whitish membranous material in the medial segment of right middle lobe and surrounding mucosa was normal. Pathological examination of the bronchoscopic biopsy material revealed diagnosis of hydatid cyst with cuticles (Figure-2). Serological tests for hydatid cyst (indirect haemagglutination) were positive (1/512) after bronchoscopy. Right middle lobectomy was performed. Pathology result

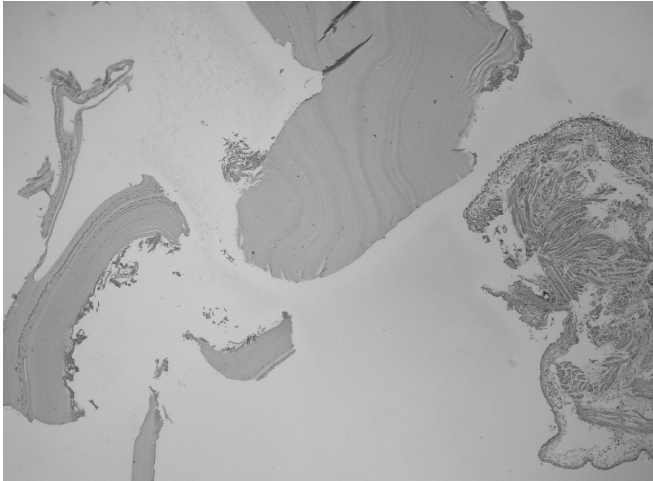


Figure-2: (H&E, x40) Isolated fragments of homogenous, eosinophilic, lamellar cuticle membrane adjacent to bronchus mucosa which was edematous and involve chronic inflammatory cells. Around the membrane partly necrotic changes and scarce leukocytes were observed.

was reported as granuloma formation and giant cells developed in reaction to hyaline chitinous membrane. No postoperative complication was observed and the patient was discharged on the third post operative day.

### Discussion

Hydatid disease is seen worldwide and especially encountered in endemic areas, such as South and Central America, Middle East, sub-Saharan Africa, Russia, China, Australia and New Zealand. Intact pulmonary cysts are frequently detected on chest radiography. Typical chest radiographic appearances of uncomplicated pulmonary hydatid disease are one or more homogeneous round or oval masses with smooth borders surrounded by normal lung tissue.<sup>2,4</sup> When a hydatid cyst is infected or ruptured, it may change the radiographic appearance of hydatid cyst, causing an incorrect diagnosis and delayed treatment.<sup>5</sup> Complicated pulmonary hydatid cysts imitate several pleura and pulmonary diseases such as nonresolving pneumonia, tuberculosis, abscess and tumour.<sup>1,5,6</sup> Although bronchoscopy is unnecessary in patients with typical clinical and radiological findings it is useful in differential diagnosis when suspicion of a tumour exists.

In the study done by Saygi et al, fiberoptic evaluation made the diagnosis of hydatid cyst in 14 of the 24 cases. Bronchoscopically it is described as a whitish-yellow gelatinous membrane in most of the patients (50%). Other

findings were hyperaemia and oedema. Most common localization was lower lobes (42%).<sup>1</sup>

In the series from Racil et al, from 52 complicated pulmonary hydatid disease cases rupture of the hydatid cyst occurred into the bronchi in majority of the cases 42 (86.5%). Bronchoscopy was done in 32 (64.5%) and diagnosis was confirmed only in 4 of them. In this report, bronchoscopy was done for patients without absolute diagnosis of hydatid cyst disease or with a complaint of haemoptysis and dirty white membrane was observed in 6 patients.<sup>7</sup> Jerray et al reported 21 out of 105 cases of hydatid cyst with membrane detected by fiberoptic bronchoscopy.<sup>8</sup> Although whitish-yellow gelatinous membrane was the most common finding, this is not specific to the disease and can be mixed with squamous cell carcinoma.

Urgent treatment is needed when the hydatid cyst is diagnosed. Treatment comprises of surgical resection when perforation has occurred. The main reason of resection is total excision of the disease.<sup>9</sup> Preoperative and postoperative adjuvant chemotherapy is recommended to decrease recurrences by inactivating protochloleks and due to decreasing pressure inside the cyst.<sup>3</sup>

### Conclusion

The presented case was difficult to diagnose. Bronchoscopy had to be done for a definitive diagnosis. This case contributes to the literature in an aspect that hydatid cyst should be kept in mind in differential diagnosis of endobronchial lesions and late resolving pneumonias.

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