HEART & LUNG

Hydatid cyst, an unusual cause of spontaneous hemothorax and diagnostic thoracoscopy: Case report

Figen Türk, MD, Gökhan Yuncu, MD, Cansel Atinkaya, MD, Tolga Semerkant, MD, Yasin Ekinci, MD, Gökhan Ozturk, MD*

Department of Thoracic Surgery, Pamukkale University Faculty of Medicine, Denizli, Turkey

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ABSTRACT

Hydatid disease is a common parasitic disease in areas where sheep and cattle are raised and is currently endemic in the eastern and southwestern parts of Turkey. Patients with hydatid cysts typically present with cough, chest pain, dyspnea, hemoptysis, or allergic reactions. When ruptured, these cysts may cause hemoptysis, dyspnea, and hydatid thorax. Previously published series of cyst hydatid have reported cyst hydatid rupture and hemothorax secondary to trauma, but nontraumatic hemothorax due to spontaneous rupture of hydatid cyst has not been defined. We discuss the clinical features of a patient with no history of trauma who presented to the emergency department with hemoptysis and dyspnea and was found to have hemothorax due to spontaneous rupture of the hydatid cyst on videothoracoscopic investigation and underwent thoracotomy for hydatid disease treatment.

Hemothorax is pleural fluid with a hematocrit more than 50% of the blood hematocrit. Most cases of hemothorax are related to open or closed chest trauma or procedures such as thoracentesis, pleural biopsy, or catheterization. Spontaneous hemothorax or nontraumatic hemothorax is a rare clinical entity that can be life-threatening. Only a few case reports have been published in the literature. Hemothorax can have many different causes (Table 1).[1]

Echinococcosis (hydatid disease) is a common parasitic disease in areas where sheep and cattle are raised, particularly Middle Eastern and Mediterranean countries.[2] The disease is currently endemic in the eastern and southwestern parts of Turkey.[2,3] Patients with hydatid cysts typically present with cough, chest pain, dyspnea, hemoptysis, or allergic reactions. Cystic fluid, germinative membrane expectoration, and infection may be present in ruptured cysts.[3] Traumatic rupture and hemothorax development have been described in cases of giant hydatid cyst, but there are no cases in which a hydatid cyst was the reason for a spontaneous hemothorax.[3,4] We present the diagnostic and therapeutic methods used in a patient who presented to the emergency department with hemoptysis and dyspnea. On investigation, the patient was found to have hemothorax caused by the spontaneous rupture of a hydatid.

Case Report

A 54-year-old man presented with hemoptysis and dyspnea. He was a nonsmoker. His blood pressure was 125/85 mm Hg, pulse rate was 82 beats/min, and

* *Corresponding author:* Figen Türk, MD, Erenler Mah. 211 Sk, No: 4/4, Yenişehir, Denizli/Turkey.
E-mail address: figenturk@pau.edu.tr (F. Türk).
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Table 1 – Cause of nontraumatic hemothorax

Category	Specific cause	n
Pneumothorax	Spontaneous hemopneumothorax	300
Coagulopathy	Congenital diseases	20
	Hemophilia	
	Glanzmann thrombasthenia	
	Acquired	
	Drug-related	
Vascular	Arteriovenous malformation (Osler-Weber-Rendu disease)	32
	Von Recklinghausen disease	
	Aneurysms	
	Type IV Ehlers–Danlos syndrome	
	Connective tissue disease	
Neoplasia	Bone/soft tissue	10
	Schwannoma	
	Thymic growths	
	Vascular tumors	
	Germ cell tumors	
	Hepatocellular	
	Lung cancer	
	Most cases from Asia and sub-Saharan Africa	
	Mesothelioma	
	Primitive neuroectodermal tumor	
Miscellaneous	Exostoses	16
	Extramedullary hematopoiesis	
	Endometriosis	
	Pulmonary sequestration	
	Gastrointestinal surgery	
Idiopathic		4
Parasitic	Hydatid disease (our case)	1

respiration rate was 22 breaths/min on physical examination. Decreased air sounds were noted on the right side of his chest. The chest radiograph showed pleural fluid and mass opacity of the superior zone in the right hemothorax (Figure 1). Computed tomography showed 60 HU tissue density opacity in the superior zone of the right lung and 35 HU tissue density of the pleural fluid (Figure 2). No lymph node enlargement was identified in the mediastinum. A small amount of air and pneumonia were noted within the opacity. The coagulation parameters and other laboratory parameters were normal, and the patient underwent diagnostic thoracoscopy 18 hours after his presentation for a preliminary diagnosis of malignant pleural effusion. The operation was performed under general anesthesia. The patient was intubated in the lateral position with a double lumen tube. Hemorrhagic fluid was aspirated during the thoracentesis before the videothoracoscopy procedure. Laboratory analysis of the fluid revealed hemothorax (pleural fluid with a hematocrit $>$ 50% of the blood hematocrit). One trocar was inserted in the sixth intercostal space, and the pleural cavity and lung were examined with a camera. Once hemorrhagic fluid was aspirated, the cystic membrane was seen in the pleural cavity (Figure 3). The cystic membrane was removed via thoracoscopic aspiration. The surgical approach for the cystic lesion in the right upper lung of our patient was lateral thoracotomy. An intrathoracic hydatid cyst lesion and intraparenchymal hematoma (100-150 mL) were detected during surgery (Figure 4). The intrapulmonary cystic lesion had ruptured toward the pleural cavity and created a hemothorax. The intraparenchymal hematoma was irrigated and aspirated. The cystic cavity was examined for bronchial fistulas. A few small bronchial fistulas were observed and sutured with 3/0 Prolene. We performed decortication for pleural thickening. There were no postoperative complications. The pathology investigations confirmed the diagnosis of hydatid cyst. Albendazole treatment was prescribed to prevent recurrence. The patient was in good general condition with no symptoms at the 6-month follow-up.

Discussion

Hemothorax has a significant mortality rate if not recognized and treated in time. Most cases are related to open or closed chest trauma, but nontraumatic