

An Unusual Location of Hydatid Disease: Intercostal Space

Kist Hidatik için Olağandışı Bir Lokalizasyon: İnterkostal Alan
Radyoloji

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Özet

Hidatid hastalığı, sestod olan *Echinococcus* (E) tarafından oluşturulan parazitik bir enfeksiyondur. Hidatid hastalığı vücuttaki tüm organları etkileyebilir, fakat karaciğer ve akciğer sırasıyla birinci ve ikincidir. Göğüs duvarının primer hidatid hastalığına bağlı interostal kasın etkilenmesi oldukça nadirdir. Yirmi yedi yaşında bayan hasta, göğüs duvarında kitlenin değerlendirilmesi için hastanemize başvurdu. Ultrasonografide; sağ lateral göğüs duvarında 33x21x17 mm boyutlarında lobule konturlu kistik kitle vardı. Çok kesitli bilgisayarlı tomografide (ÇKBT), 10. ve 11. kostalar arasında kistik dansitede kitle saptandı. Kist interkostal kası invaze etmiş ve plevrayı içeri doğru yer değiştirmişti. ÇKBT' de karaciğer, dalak veya herhangi bir organda kist saptanmadı. Kist cerrahi olarak çıkarıldı. Makroskopik ve mikroskopik histopatoloji incelemesi ile kist hidatid tanısı doğrulandı.

Anahtar kelimeler: *Intramusküler hidatik kist, Kasın primer hidatidozu, Toraks duvarı*

Abstract

Hydatid disease is a parasitic infection caused by *E. granulosus*, a cestode. Hydatid disease may affect all organs in the body, but liver and lungs are first and second, respectively. Primary hydatidosis of the chest wall affecting intercostal muscles are very rare. A 27-year-old woman was admitted to our hospital for evaluation of a mass in the chest wall. A 33x21x17 mm sized, lobulated cystic mass was seen in right lateral chest wall on ultrasonography. When multidetector computed tomography (MDCT) was performed, a mass with cystic density was detected between 10th and 11th ribs. The cyst had invaded the intercostal muscles and displaced pleura internally. No cystic lesions were seen in the liver, lungs or other parts of the body on MDCT. The cyst was removed completely by surgery. Macroscopic and microscopic histopathological examinations confirmed the diagnosis of a hydatid cyst.

Keywords: *Intramuscular hydatid cyst, Primary hydatidosis of muscles, Thoracic Wall*

Introduction

Hydatid disease (HD) is a parasitic infection caused by *E. granulosus*¹. Humans are infected by animals that are hosts in the life cycle of the parasite. The disease is common in the Mediterranean region, Eastern Europe, Africa, South America, the Middle East, Australia, New Zealand, and China, especially in sheep-farming areas¹. The parasite can locate in any organ with an arterial blood supply, but the liver is the most commonly affected organ (55%–60%), while the lung is the second (25%–30%)². Primary solitary involvement of the anterior chest wall is uncommon and has been reported in the literature as 1.95%³. In the present case, the hydatid cyst was localized inside the intercostal muscle, and no other anatomic structure involvement was detected. Our aim is to present this rare case with radiological findings in the literature.

Case Report

A 27-year-old woman was admitted to to our hospital with an soft-tissue mass in the chest wall. She had first noticed it 6 months previously, and had no history of trauma, surgery or additional diseases. Physical examination revealed a fixed and painless soft tissue mass with irregular borders in the right lateral chest wall (Figure 1).

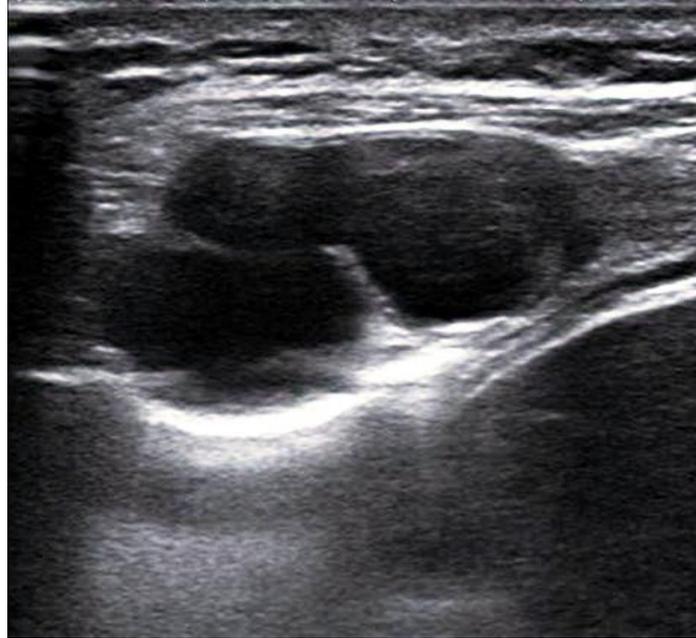


Figure 1

Bilobulated cystic lesion is seen with membranes on the right chest wall on ultrasonography.

The patient's laboratory findings were within normal limits. An ultrasound examination showed a 33x21x17 mm sized, lobulated cystic mass in right lateral chest wall. The cyst had some membranes inside it. When MDCT was performed, a mass with cystic density was detected between 10th and 11th ribs (Figure 2A,B).



Figure 2A

Cystic lesion inside the intercostal muscle is seen between the 10th and 11th ribs on CT.



Figure 2B

Cystic lesion inside the intercostal muscle is seen between the 10th and 11th ribs on CT.

The cyst had invaded the intercostal muscles and displaced pleura internally. No cystic mass was seen in liver, lungs or other parts of body on MDCT. Thoracic exploration performed under general anesthesia and all the cystic lesions were removed, leaving wide surgical margins. Macroscopic and microscopic histopathological examinations confirmed the diagnosis of a hydatid cyst. There had been no recurrence one year after the cyst was removed.

Case Discussion

Hydatid disease is a parasitic disease of the tapeworm *E. granulosus*¹. It is frequently found in the Mediterranean region, Eastern Europe, Africa, South America, the Middle East, Australia, New Zealand, and China, in areas where people usually work with livestock¹. The most commonly infected organ is the liver (55%–60%)². If the embryo cannot locate in the liver, it is transported to the heart and then the lungs by the hepatic veins and the inferior vena cava. The lungs are the second most commonly infected organs (25%–30%)². Extrahepatic and extrapulmonary cysts may occur without liver and lung involvement. The infection may spread to various organs, such as the bones, kidneys, and brain, by systemic circulation⁴. Isolated chest wall involvement is very rare. The chest wall, ribs, and sternum are infected in only 0.9%–2% of cases. Intrathoracic extrapulmonary HD cases are 7.4% of all cases².

The symptoms of HD vary according to the cyst size, infected organ, and site within the infected organ⁵. The cysts are usually immobile, noninflammatory, painless masses, and they usually do not affect the physical condition. If the cysts are ruptured, the patient would go into anaphylactic shock. The cyst can be confused with an abscess when it becomes superinfected⁶. The most common symptom of pulmonary HD is chest pain. Intrathoracic extrapulmonary cysts can have many different symptoms due to pressure on vital organs².

Ultrasonography, CT, and MRI can show the cyst, its location, and its relation to neighboring organs, and can be very helpful in diagnosis. The presence of other cysts in different locations is easy to diagnose with these modalities. Thick cyst walls, calcifications, daughter cysts, and separation of the germinal layer are specific

radiological findings in HD ^{5,7}. The cyst may have a thin or thick wall on US and may contain internal echoes. On CT, HD is seen as well-circumscribed cystic lesions that may contain septa and debris. The cysts do not show enhancement with contrast media. A collagen-rich thin rim with low signal intensity representing the pericyst is seen on MRI ⁸. Serology is helpful in diagnosis, but it is rarely positive in extrahepatic and extrapulmonary cases. The best treatment is complete surgical excision of the cyst. During surgery, the avoidance of spillage of cyst contents to surrounding structures is important to prevent anaphylactic reactions and local recurrence ⁹.

In conclusion, HD may affect thoracic structures. Primary involvement of the anterior chest wall is very rare. Extrahepatic and extrapulmonary anatomic involvements have to be known, especially in endemic areas like our country. Hydatid disease should be considered in the differential diagnosis of cystic lesions in any part of the body.

References

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Information Presentation

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