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A five-years old girl with a lump in the neck

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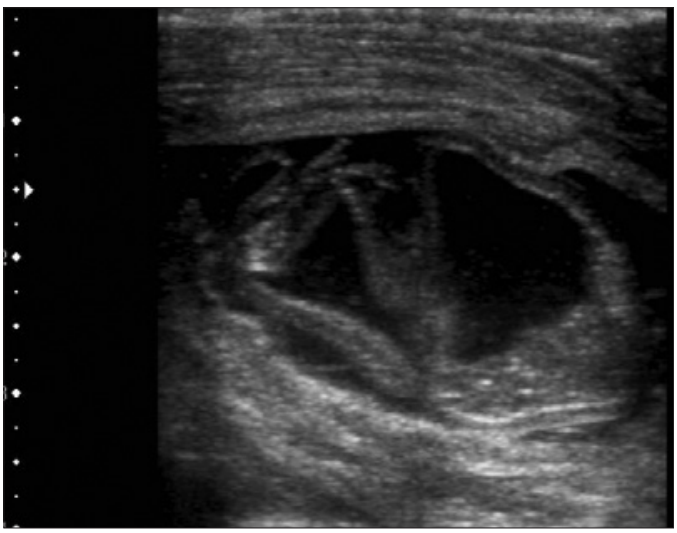
Case report

A five years old female patient presented to the pediatric outpatient clinic with a lump in the right posterior region of the neck. It was learned from the history that this lump appeared 3 years ago and progressively enlarged. The patient was living in a tent with her family. Personal history revealed no pathology.

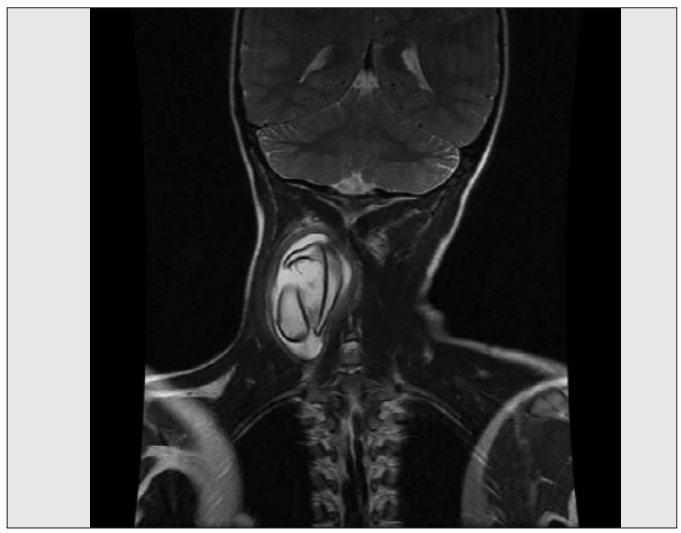
The physical examination revealed a conscious patient with a good general health status. Fever was found to be 37.2 °C, pulse rate was found to be 82/min, respiratory rate was found to be 13/min and blood pressure was found to be 90/60 mmHg. The height was measured to be 106 cm (25-50th percentiles) and the weight was measured to be 17 kg (25-50th percentiles). Strabismus was found in the right eye. A soft and partially mobile mass with dimensions of 6 x 2 cm was palpated in the right posterior region of the neck. Breath sounds were normal and equal bilaterally. The abdomial examination revealed no defense or organomegaly. Other systemic findings were found to be normal.

Laboratory tests were as follows: white blood cells: 11 400/mm^3, hemoglobin: 12.9 g/dL, platelets: 463000/mm^3, neutrophiles: 48%, eosynophils: 22%, lymphocytes: 25%, monocytes: 5%, CRP: 16.1 mg/dL, erytrocyte sedimentation rate: 35 mm/h and blood biochemistry was found to be normal.

For diagnosis some serologic tests, cervical ultrasonography and later cervical magnetic resonance imaging (MR) were performed (Picture 1,2).



Picture1. Cervical ultrasonography



Picture 2. Cervical MRI

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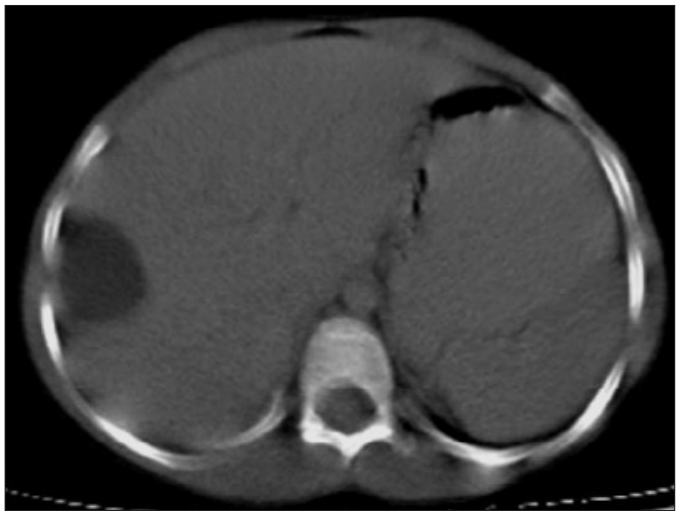
Diagnosis: Cyst hydatic

Serologic tests revealed cystic echinococcosis İHA (Fumoze diagnostics) to be 1/640 positive and IFAT (Euroimmune) to be 1/128 positive.

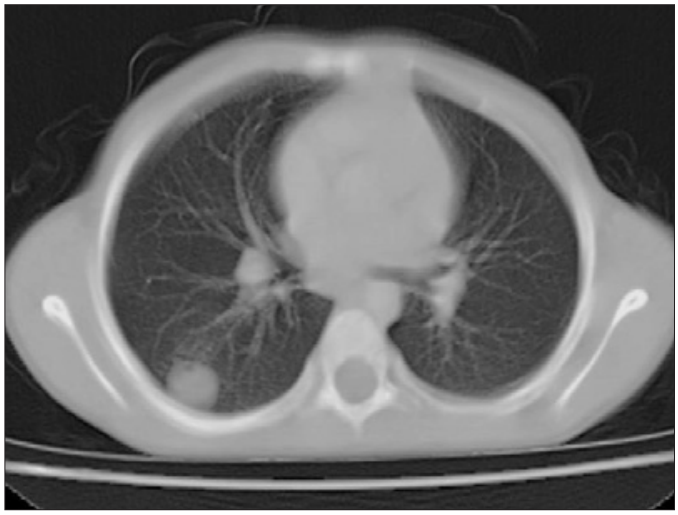
On cervical ultrasonography (USG), a cystic structure with dimensions of 65x45x25 mm with a dissected germinative membrane was observed (Picture 1). On cervical MR, a cystic structure with dimensions of 64x45z25 mm, regular contours and a dissected germinative membrane which was hypodens at T1 and hyperdense at T2 was observed (Picture 2).

On abdominal computerized tomography (CT), a cystic structure with a thin wall with dimensions of 25x30 mm was observed localized in segment 7 in the liver (Picture 3).

On thoracal CT, a cystic structure with dimensions of 18x20 mm localized peripherically in the superior segment of the lower lobe in the right lung was observed (Picture 4).



Picture 3. Cyst in the liver



Picture 4. Cyst in the lung

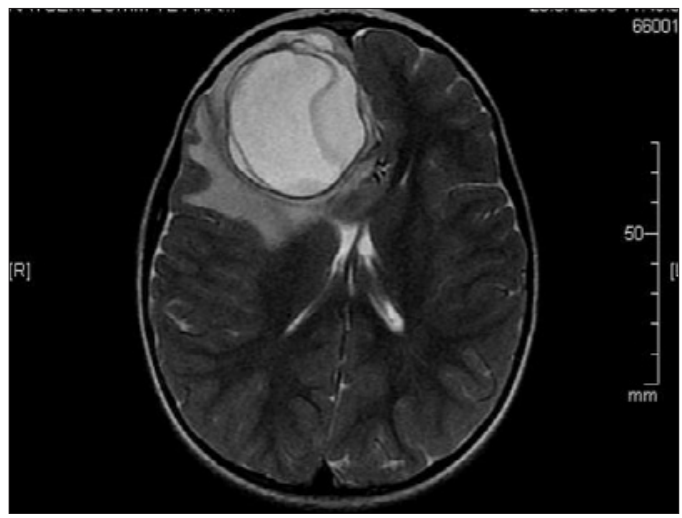
On cranial MR, a cystic structure with dimensions of 40x45x50 mm in the right frontal lobe was observed (Picture 5).

In this subject, a diagnosis of cyst hydatic was made with serologic findings of cyst hydatic in addition to radiologic methods.

Albendazole treatment was started before operation, the patient was referred to the department of neurosurgery because of the mass in the brain and total cystectomy was performed. No surgical intervention was performed for the cysts outside the brain. Albendazole treatment was started for 6 months and follow-up was recommended at the end of this period.

Discussion

Ecchinococcosis is a parasitic disease which is seen with an increasing rate in populations in whom rural life and stockbreeding is prevalent and who have inadequate preventive health care and enviromental health measures. Hydatid cyst disease is seen endemically in many regions. In humans, ecchinococcosis (cyst hydatic diasease) is frequently caused by Echinococcus granulosus larvae and infrequently caused by Echinococcus multilocularis larvae. All organs can be involved, but it is most frequently localized in the liver and the lung. This is related to the life cycle of the parasite. Parasite eggs are received by intermediate hosts via the digestive system or infrequently the respiratory system and cause disease. In the intermediate hosts, oncospher getting out of the eggs with the effect of enzymes in the stomach and small intestines, perforate the intestinal wall and enter the portal circulation (1). The liver is the first filter encountered. Most larvae are kept here and the cystic structure is formed. The larvae passing the hepatic microvascular wall (10-20%) reach the lung. A part of them enters the systemic circulation and may localize in all tissues and organs (2-4). The disease



Picture 5. Cranial MRI

appears as a slowly enlargening cystic mass and the most common localization is the liver and secondly the lung. In childhood, the rates of hepatic involvement and lung involvement are equal (5). While 78% of all hydatid cysts are observed in the liver and lung, the rate of involvement of other organs is 22%. Subcutaneous and adipose tissue involvement is rather rare and usually is accompanied by involvement of another organ (6-9).

In different series, rates ranging between 0.5% and 4.7% have been reported for subcutaneous and adipose tissue involvement (10). In a study performed in an endemic region, the rate of soft tissue involvement was found to be 2.3% accompanied frequently by another organ involvement (8). In our case, brain, lung and hepatic involvement was present in addition to subcutaneous involvement.

Most children with hydatid cyst are at 6-14 years of age. Even if infestation occurs at an early age, a certain period should pass before manifestations.

The most useful tests for diagnosis of hydatid cyst are imaging methods. Because of false positive and false negative results of serologic tests, imaging methods including USG, CT and MRI have a marked superiority over serologic tests (2,3). CT and MRI give substantially detailed information about the localization, dimensions, content, extension and relation with the surrounding tissues. MRI which has a gradually increasing significance in imaging of soft tissue has been reported to give more detailed information about hydatid cyst involving soft tissue (11).

Consequently, hydatid cyst most commonly localizes in the liver and lung, but it may rarely localize in the brain, subcutaneous tissue and other tissues. Especially in regions where the disease is endemic, hydatid cyst should definitely be considered in cases with a cystic lesion in any part of the body and serologic tests and radiologic imaging should be performed.

Conflict of interest: None declared

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