

Case Report

Alveolar hydatid cyst mimicking cerebellar metastatic tumor

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This article may be cited as:Ozdol C, Yildirim AE, Daglioglu E, Divanlioglu D, Erdem E, Belen D. Alveolar hydatid cyst mimicking cerebellar metastatic tumor *Surg Neurol Int* 2011;2:13Available FREE in open access from: <http://www.surgicalneurologyint.com/text.asp? 2011/1/2/76281>**Abstract**

Background: Echinococcus multilocularis is a rare infestation in the world with a particularly increased incidence mainly in South America, Central Europe and Asia. Progression of alveolar Echinococcosis is more aggressive that can metastasize to lungs, brain and bones however brain involvement is usually rare with an incidence about 1%.

Case Description: We report a 23-year-old man with a cerebellar Echinococcosis multilocularis mimicking a metastatic cerebellar tumor. Suboccipital craniotomy was performed for gross total removal of the tumor. Histopathological specimens confirmed the diagnosis of Echinococcosis multilocularis.

Conclusion: Radical surgical excision should be recommended for single Echinococcosis multilocularis lesions particularly at infratentorial localization.

Key Words: Alveolar hydatid cysts, cerebellum, echinococcus, surgery, tumor

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Quick Response Code:**INTRODUCTION**

Hydatid disease is a parasitic infestation produced by Echinococcus granulosus (EG) and Echinococcus multilocularis (EM).^[3] EM is a rare human infestation with a wide geographic distribution especially in regions like South America, Central Europe, Central and East Asia.^[8,10] Echinococcosis is endemic for Turkey, particularly in Eastern and Northeastern Anatolian region.^[2] The life cycle is completed when a fox or canine consumes a rodent that is infected with cysts. Human beings can be the accidental host for these parasites.^[11] EM primarily affects the liver. This chronic infestation may spread hematogenously to produce metastatic foci in the distant organs. Involvement of the brain is rare, reported to be around 1%.^[7,13] Alveolar hydatid cysts constitute 3% of

cerebral hydatid cyst cases. Infratentorial involvement is considerably rare.^[4] Here we report a 23-year-old man with cerebellar involvement of Echinococcus multilocularis mimicking a metastatic cerebellar tumor.

CASE REPORT

A 23-year-old man presented with nausea, imbalance, occasional urinary and fecal incontinence and a severe headache for 1 month. The patient was a farmer with an unremarkable past experience for his relatives. Neurological examination was completely normal. Magnetic resonance imaging (MRI) demonstrated a left cerebellar mass lesion of 3×2×1.5 cm in size with marked peripheral contrast enhancement [Figure 1]. Computed tomography (CT) examination of the chest and abdomen

were performed for a primary origin. Multiple calcified mass lesions with lobulated contours were shown in the right upper lobe of lung, right liver and another solid tumor between right kidney and liver. Suboccipital craniotomy was performed and a left intracerebellar pale yellow mass was excised grossly as total. The tumor was almost avascular and it was easily dissected from the surrounding cerebellar tissues. Postoperative course was unremarkable without any neurological deficit. Histopathological examination revealed PAS (+) cuticular membrane with wide areas of necrosis and inflammation which were typical for EM [Figure 2]. Serological tests at the postoperative period confirmed the presence of EM with indirect hemagglutination test.

Albendazole (800 mg, bid, 3 cure, 28-day cycle followed by a 14-day albendazole-free interval) and cephotaxime (4 g, bid) were prescribed for postoperative treatment. A further operation was performed to resect the lesion in the lung a month after intracranial surgery. Postoperative early CT examination and MRI performed 6 months after surgery showed no recurrence.

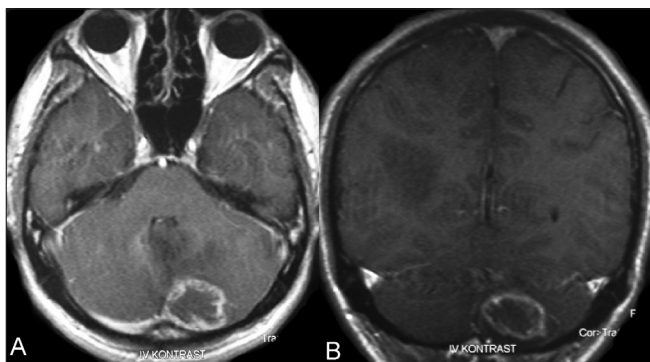


Figure 1: Gadolinium enhanced T1-weighted axial (A) and coronal (B) MR images demonstrate a left cerebellar lesion with peripheral enhancement.

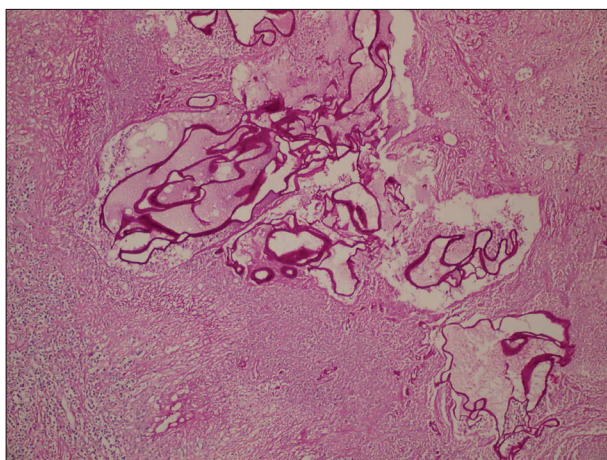


Figure 2: PAS (+) cuticular membrane pieces were prominent on the histopathological studies with wide necrotic areas and inflammation which were concordant with alveolar echinococcosis. (PAS (+)×100).

DISCUSSION

Alveolar hydatid disease is a human infestation caused by the larval stage of EM. The natural definitive host is the canine, fox and cats while the intermediate hosts are usually small rodents and sometimes humans. The metacestode form of EM has a tendency to disseminate into other organs than liver by local spreading or hematogenous metastasis.^[5] Lung, heart, thyroid, brain, bone and spleen are main target organs.^[6,13] EM cases are usually adults and clinical findings depend on the area and size of the lesion. The clinical presentation usually includes symptoms of increased intracranial pressure (headache, vomiting, motor weakness, etc.), seizures and cranial nerve findings.^[14] Immunofluorescence, indirect hemagglutination tests, ELISA and immunoelectrophoresis with antigenic extracts of EM are usually supportive laboratory tests for a diagnostic accuracy.^[9] A solid, semisolid or multilocular cystic mass is a common finding on CT and MRI of EM.^[15,16] Calcification and perilesional edema are prominent.^[1] Cerebral lesions are usually single or multiple. They are usually supratentorial and within the watershed zone of middle cerebral artery; however, infratentorial EM is extremely rare.^[16] Altinors *et al.* studied 219 hydatid disease patients and reported only 11 infratentorial lesions with 2 EM localized in cerebellum.^[4] EM involvement of brain and liver is similar to an infiltrative tumor. Tuberculosis, bacterial abscesses, fungal infections, invasive brain tumors and metastases should be considered in the differential diagnosis of these infections.^[13] Differential diagnosis of EM lesions includes malign tumors due to local invasive pattern, tissue destruction during growth and metastases to distant organs. Histopathological examination is necessary for a definite diagnosis.

The case we presented here had a left cerebellar lesion presumed to be a metastatic tumor which is quite uncommon. On the other hand, lesions in the liver and lung were misinterpreted as a primary source of metastasis which was another diagnostic conflict. The diagnosis of EM was confirmed with further histopathological examination.

Radical excision should be performed for all accessible surgical lesions. Several cycles of postoperative albendazole chemotherapy are almost always required. Gamma knife radiosurgery may be an alternative to surgery for patients with a high risk of surgery and anesthesia.^[12]

CONCLUSION

Alveolar echinococcus should be considered in the differential diagnosis of cerebral tumors, particularly in endemic areas. Morbidity and mortality of cerebellar

EM is higher than the supratentorial EM lesions due to high risk of complications. Cerebellar EM lesions should always be considered as surgical candidates due to herniation risk; however, surgical treatment for multiple cerebral lesions is usually palliative with alternative chemotherapeutics.

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