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Intracranial Calcified hydatid cyst mimicking primary brain tumor

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Citation

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Abstract

Background. Cerebral hydatid cysts are rare and less than 5% of them show calcifications. Since symptoms are similar to those of brain tumor, and can mimic these lesions on radiologic investigations, intracranial calcified hydatid cysts can be misdiagnosed. *Case Presentation*. A 39-year-old man presented to us with seizures. On examination, he had right-sided homonymous hemianopia. Computed tomography (CT) brain showed calcified lesion in the occipital region, reported as calcified meningioma. Magnetic resonance imaging (MRI) showed a focal lesion in the left occipital region which was hypo intense on T1W and T2W images. A right parieto-occipital craniotomy was performed revealing a cystic mass which membrane was fibrous and the contents were semi solid. The cyst was excised completely with gentle dissection. There were no postoperative deficits. Histology revealed multiple calcific deposits, and remnants of hydatid cyst. *Conclusion*. Calcified intracranial hydatid cysts can mimic a primary brain tumor so they should be suspected if patients live in or come from areas with endemic hydatid cyst disease. The pathological examination confirms the diagnosis when it was not considered.

1. Introduction

Hydatid disease (Echinococcosis) is a world cyclozoonotic infection caused by Echinococcus tapeworm at the larval stage. This infection is endemic in various regions of the world. The prevalence is high in the North African countries [1]. Liver and lung are the most common localizations. Cerebral involvement is rare and comprises less than 2% of cerebral occupying lesions [2]. Among these, only 1-5% shows calcifications [3]. The symptoms of cerebral hydatid cyst are similar to those of brain tumors. Preoperative diagnosis is crucial, since the cyst has to be removed unruptured. When it is calcified the intracranial hydatid cyst can be misdiagnosed.

We present a case of calcified hydatid cyst mimicking primary brain tumor.

2. Case Report

This 39-year-old man, with no history of contact with dogs, presented to us with

seizures since 15 years, and was on treatment from a local practitioner. On examination, he had right-sided homonymous hemianopia. No other deficit was found.

Computed tomography (CT) of the brain showed calcified lesion in the occipital region, reported as calcified meningioma (fig 1). Magnetic resonance imaging (MRI) showed a focal lesion in the left occipital region which was hypo-isointense on T1W and T2W images (fig 2). Blooming areas was noted on gradient images, suggestive of calcification (fig3). X-ray chest was normal. Ultrasonography of the abdomen did not show any lesion in liver.

A left parieto-occipital craniotomy was performed. The dura was opened to visualize the lesion. The external surface of the cyst was adherent to the dura. As we had not suspected a hydatid cyst, we opened the cyst which membrane was fibrous and the contents were sucked. The contents were semi solid. The cyst was excised completely with gentle dissection since the thick wall had a good plane of differentiation from the surrounding brain parenchyma. The cavity was then irrigated well with hypertonic saline. No postoperative deficits were noticed but the homonymous hemianopia did not improve. He was given Tab. Albendazole 400 mg twice a day for 3 months.

Histology revealed multiple calcific deposits, and remnants of hydatid cyst. Hydatid serology was performed later, which turned out to be negative.

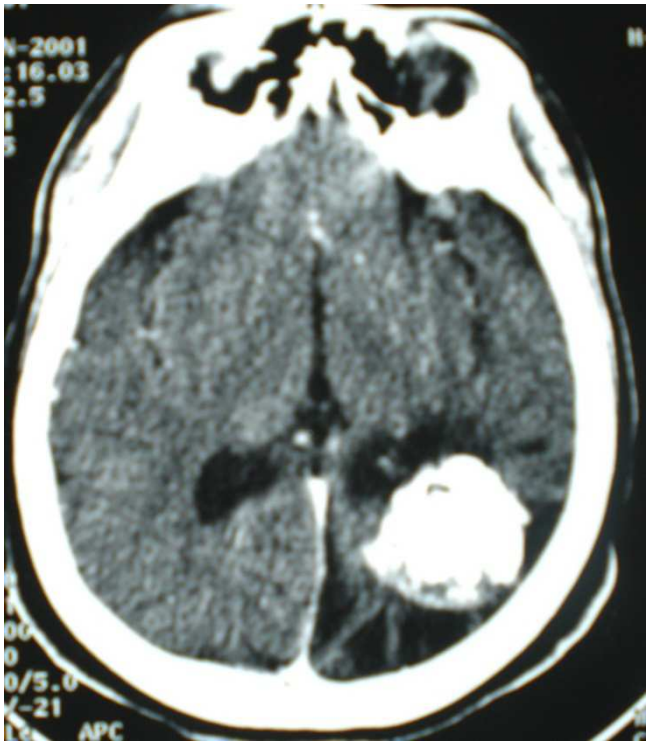

Fig 1. *Brain CT Scan without contrast image showing a calcified lesion in the occipital region.*

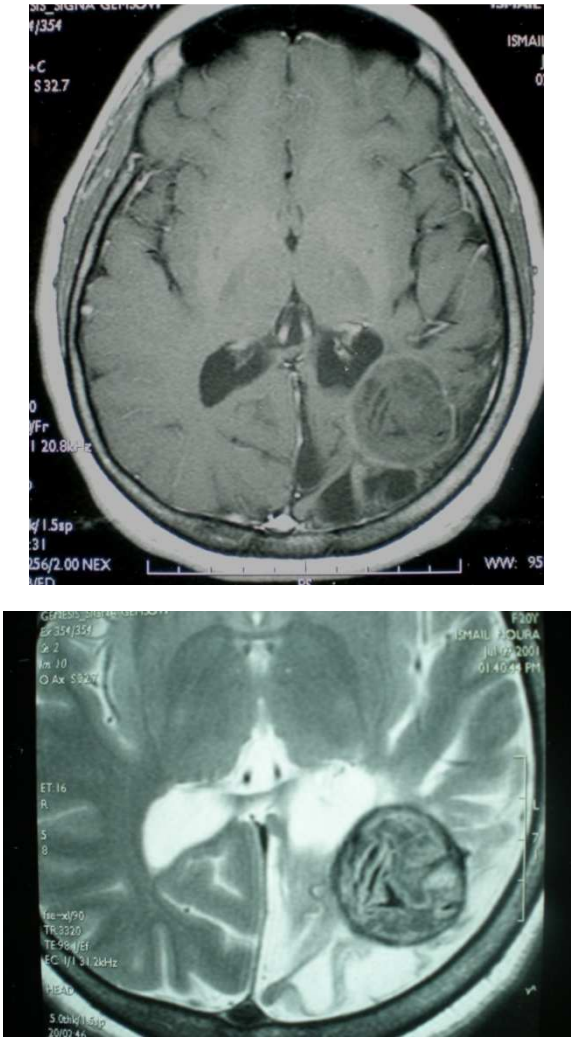

Fig 2. *Magnetic resonance imaging (MRI) showing a focal heterogeneous lesion in the left occipital region on T1W and T2W images.*

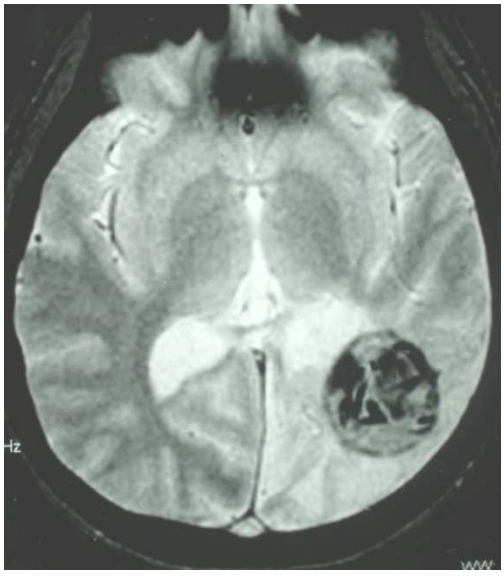

Fig 3. *MRI gradient images showing blooming areas, suggestive of calcifications.*

3. Discussion

Hydatidosis is a worldwide disease. This zoonotic infection is most common in agricultural regions. It is endemic in Mediterranean countries. The causal agent is the tapeworm of Echinococcus Granulosis which lives in the intestinal tract of dogs. It commonly affects the liver in 75% of cases and the lung in 15% [4]. Intracranial hydatid cyst comprises less than 2% of cerebral occupying lesions and usually diagnosed during childhood. Our patient was 39 Years old. Although hydatid cyst may be located anywhere in the brain, it is commonly seen in the supratentorial compartment. It affects the cerebral hemispheres and more commonly seen in the areas supplied by the middle cerebral arteries. The parietal lobe is the commonest site [5] but it is not seen in our case.

Cerebral hydatid cysts are slowly growing. Symptoms appear late when the size of cyst increases and cause mass effect [6]. The usual presentations symptoms are headache and vomiting due to raised intracranial tension. Focal neurologic deficit is also common. Calcified intracranial cysts, in contrast, usually present with seizures [3] or even stay asymptomatic [7]. Our patient has a history of 15 years epilepsy and never been explored.

Imaging with computer tomography (CT) and magnetic resonance imaging (MRI) are central to making the diagnosis of cerebral hydatid cyst. Both are equal in the detection and localization of the cyst in brain. CT is better in detection of cyst wall calcifications [8]. When calcified, cerebral hydatid cyst can be misdiagnosed. In fact it can mimic primary brain tumors as meningioma or osteoma, but perilesional edema , contrast enhancement and attachment to the dura matter seen with tumors are unusual for hydatid cysts [7]. In most cases reported, there was no mass effect on the brain due to the non-expansion of the calcified cyst. Serological tests are frequently negative when the hydatid cyst is calcified [9], which is seen in our case

Total resection of the cyst without rupture via the craniectomy is the recommended treatment. This surgery is relatively easy when the cyst is uniloculated [10]. In the present case, the first diagnosis was a brain tumor, so the technique of Arana-Iniguez was not performed [11].

Calcified intracranial hydatid cysts are difficult to excise completely because of their vascular adherences [12] and it is unusual to suspect the diagnosis even per operatively [3]. By far, the pathological examination of the resected cyst confirms the diagnosis.

4. Conclusion

Calcified intracranial hydatid cysts are rare. They can mimic a primary brain tumor so they should be considered in patients living in or coming from areas with endemic hydatid cyst disease. The presence of calcification, the absence of perilesional edema and contrast enhancement are useful for preoperative diagnosis. The pathological examination confirms the diagnosis.

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