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IMAGES IN CLINICAL PRACTICE

CEREBRAL POPCORN - A RARE ETIOLOGY OF SEIZURES

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Eleven-year-old girl with absence seizures for the previous four months came to the emergency department with a 15 minutes lasting episode of tonic-clonic movements of the upper limbs and left lateralization of the head. No fever or other associated symptoms. Normal blood tests, negative toxicities and cranioencephalic computed axial tomography (CE-CT) with an intra-axial hyperdense expansive lesion, measuring 15x15x17 mm, with calcifications inside it (Figure 1). Cranioencephalic magnetic resonance imaging (CE-MRI) was performed for better characterization of the lesion in which was observed a heterogeneous lesion with a morulate appearance (diameter 11-12 mm), surrounded by an area of prominent hyposignal on T1 and T2, with intense hemosiderin deposition. (Figure 2). These aspects were compatible with the diagnosis of cavernoma and she was discharged, medicated with levetiracetam and referred to a pediatric neurology and neurosurgery consultation. Two months later, she underwent surgery to remove the cavernoma, which was uneventful and since then, no new seizures occured. Histology confirmed the diagnosis of cavernoma and the post-surgery CE-MRI showed no hemorrhage and a small cavernous residue.

Figure 1. CE-CT with hyperdense lesion with calcifications inside.

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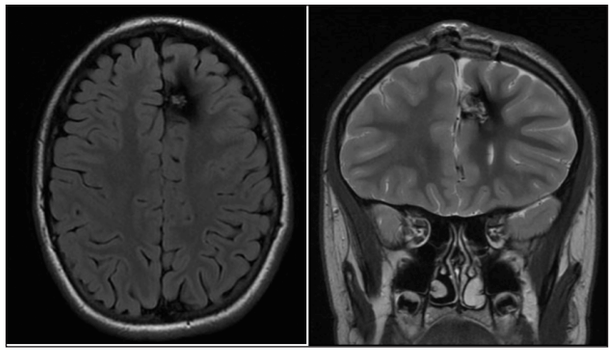
Figure 2. CE-MRI axial and coronal sections with heterogeneous lesion with surrounding hyposignal and intense hemosiderin deposition in the surrounding parenchyma.



What is the diagnosis?

Cavernous brain malformations are a rare vascular abnormality in children, affecting 0,2-0,4% of the world populatio[1]; one fourth affect pediatric patients.[1] They are characterized by benign vascular hamartomas of the central nervous system, 40-60% of cases being unique lesions.[2] Up to 10% are asymptomatic[3], but occasionally may lead to severe neurological symptoms such as seizures or hemorrhages.[4] CE-CT can diagnose most lesions, but as some lesions are small and not hyperdense, the CE-MRI is the gold standard. The most notable MRI features are the dark hemosiderin ring of the classic "popcorn" lesion seen on T2-weighted image.[2] Antiepileptics are used as the first line of treatment[5], but total surgical resection ensures an excellent clinical outcome and control of seizures.[6] It is essential to early recognize this pathology as the treatment has a good clinical response, thus avoiding possible severe neurological complications.

Compliance with ethical standards
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