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IMAGES IN CLINICAL RADIOLOGY

Global Ischemia of The Cerebellum: The Dark Cerebellar Sign

Cengiz Yılmaz, Ender Alkan and Hasan Erdoğan

Keywords: Dark cerebellum; White cerebellum; CT; Trauma

Case History

A three-year-old boy with a history of motor vehicle accident presented with loss of consciousness. Non-enhanced cranial computed tomography (CT) (**Figure 1**) showed diffuse cerebellar hypodensity (open arrows) compared to supratentorial brain parenchyma (arrows). There was also a fracture dislocation of C1-C2 (**Figure 2**, arrow).

Comment

We want to present the dark cerebellar sign, which is not known as well as the white cerebellar sign. White cerebellar sign refers to a normal cerebellum and brainstem that appear hyperdense in comparison to the supratentorial brain on non-enhanced CT. The cerebellum and brainstem are believed to be more resistant to hypoxia-ischemia than the supratentorial brain [1]. A diffuse hypodensity of the cerebrum is seen in cases of profound and sustained hypoxia. This may occur in prolonged cardiac arrest, poisoning

Figure 2.

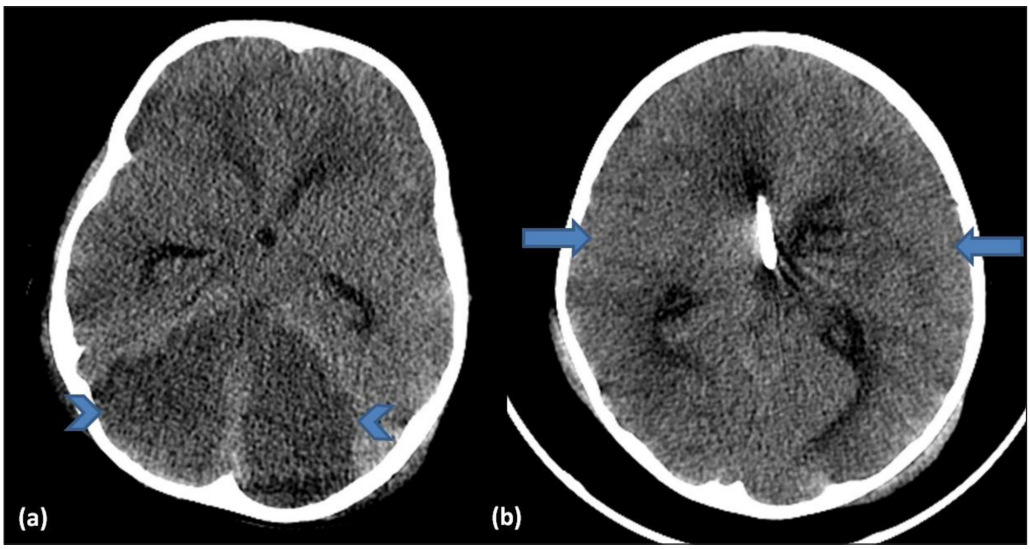

Figure 1.

Aksaray University Education and Research Hospital, TR
Corresponding author: Ender Alkan (drealkan@gmail.com)

(carbon monoxide, cyanide, hydrogen sulfide, barbiturate), or as a complication of a severe meningo-encephalitis. On the other hand, the dark cerebellar sign is a much rarer finding and is characterized by a diffuse hypodense cerebellum compared to the normal density of the supratentorial brain parenchyma. The hypodensity of the cerebellum is caused by diffuse parenchymal cerebellar edema and/or infarction [2]. The prognosis is usually very poor. Acute cerebellitis should be in the differential diagnosis of a hypodense, edematous cerebellum [3]. At this situation clinical information may aid differential diagnosis.

In conclusion, dark cerebellar sign refers to diffuse hypodensity of the cerebellum at non-enhanced CT, and develops secondary to diffuse cerebellar ischemia/infarction. In our case diffuse cerebellar infarction probably developed secondary to transection of the vertebral artery.

Competing Interests

The authors have no competing interests to declare.

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