

# White Cerebellum Sign

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## ABSTRACT

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White cerebellum sign<sup>1</sup> is a classic radiologic finding seen usually in children with cerebral hypoxia. We report a 1 year-old child with this radiological finding due to status epilepticus and review its etiology and literature.

**Keywords:** Status epilepticus, Cerebral hypoxia

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## INTRODUCTION

'White cerebellum sign' is a classic radiologic finding seen usually in children with cerebral hypoxia. We report a 1 year-old child with this radiological finding due to status epilepticus and review its etiology and literature.

## CASE HISTORY

A 1 year old male child was referred to our hospital with 7 day h/o fever and seizures. He was admitted in a local hospital where he had status epilepticus and was intubated. CSF done there had shown lymphocytic

pleocytosis (CSF WBC 60 cells/ mm<sup>3</sup>, lymphocytes 95%) and elevation of proteins (CSF protein 60 mg %). He was on treatment with injection ceftriaxone, acyclovir, phenytoin and phenobarbitone.

On arrival to our hospital, child was in shock, GCS was 3/15, pupils were dilated and fixed and brainstem reflexes were absent. Non contrast CT brain revealed completely hypodense cerebral hemispheres with hyper dense cerebellum, thalamus and brain stem- 'White cerebellum sign/Reversal sign' (Figures 1, 2, 3). EEG did not show any electro- cerebral activity. Child expired 12 hours after admission to our hospital.

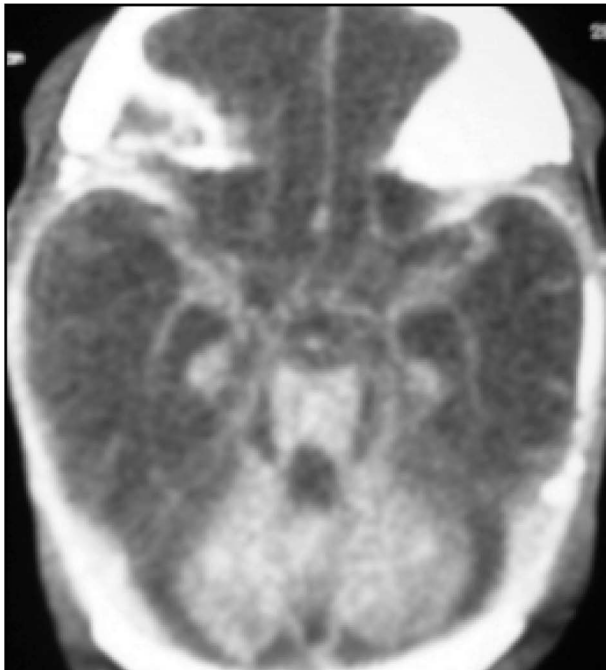


Figure 1. Cerebellum and brainstem appears hyperdense. There is diffuse hypodensity of cerebral hemispheres.

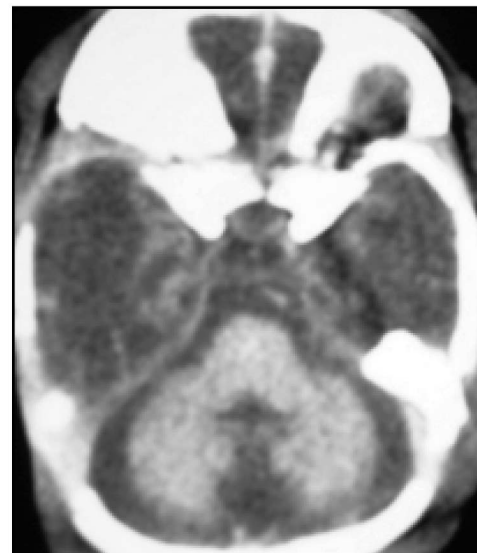


Figure 2. Relative hyperdensity of cerebellum-White cerebellum sign

## DISCUSSION

'White cerebellum sign' is seen as diffuse decrease in the density of the cerebral hemispheres, with loss of gray-white differentiation and a relative increase in the

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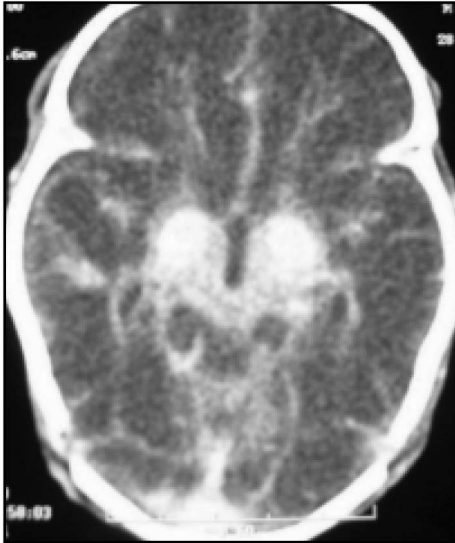


Figure 3. Reversal sign

density of the cerebellum, thalami and brainstem. It is also known as 'Reversal sign'. It is seen in severe head injury, birth asphyxia, drowning, status epilepticus, bacterial meningitis, and encephalitis. It represents anoxic/ischemic cerebral injury. It indicates irreversible brain damage and carries a poor prognosis.<sup>1</sup>

One of the proposed mechanisms for the appearance seen in the reversal sign is distension of the deep medullary veins secondary to partial obstruction of venous outflow due to raised intracranial tension. Other theories that have been proposed include preferential flow to the posterior circulation and transtentorial herniation partially relieving the raised intracranial tension, leading to improvement in the perfusion of central structures such as the brainstem.<sup>2</sup>

White cerebellum sign is an uncommon radiologic finding seen mainly in cases of pediatric hypoxia. The possible etiology is ill understood. It usually represents severe anoxic - ischemic brain injury and carries a poor prognosis

## END NOTE

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**Conflict of Interest:** None declared

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