"White cerebellum" sign - A dark prognosticator

Prasad Krishnan, Siddhartha Roy Chowdhury

Department of Neurosurgery, National Neurosciences Center, Peerless Hospital Complex, Kolkata, West Bengal, India

A 52-year-old man was admitted 6 hours following head injury. His Glasgow Coma Scale (GCS) was 3/15 [E1M1V1]. Bilateral pupils were fixed and dilated. Corneal reflex, cough reflex, and doll's eye movements were absent. He was intubated and ventilated. He was triggering on ventilator, but this ceased within 2 hours. Within 10 hours, he developed refractory hypotension followed by cardiac arrest and died. Computed Tomography (CT) scan done at admission showed hyperdensity of the cerebellum relative to the cerebral hemispheres and the brain stem in axial, sagittal, and coronal sequences with obliteration of all cisterns and non-visualization of the ventricles. Right-sided acute subdural hematoma with bilateral traumatic subarachnoid hemorrhage and patchy contusions were also seen [Figure 1].

"White cerebellum" sign is a classic but uncommonly described sign in radiology.[1,2] This sign was initially described in cases of child abuse but is not specific for the same.[2] Most of the cases in literature have been described following hypoxic ischemic damage. We found only 2 articles from India with this sign, of which one was following trauma[2] and the other following post-partum seizures.[1] The appearance is due to generalized decrease in density of the supratentorial structures relative to the cerebellum that retains its normal density. The loss of density in the supratentorial structures is due to extensive edema that causes loss of the grey-white interface.[1] Various hypotheses[1,2] have been put forward as the cause of this condition including distention of deep medullary veins due to obstruction by raised intracranial pressure resulting in florid cerebral edema, relatively preserved blood flow in posterior circulation, and hypoxia damaging the Na+ pump with damage to more metabolically active areas. It has significance as it implies irreversible brain damage,[1] and it is stated that 1/3rd of patients with this finding die and the rest have severe deficits.[1] This striking sign must be remembered for the bleak prognosis it carries.

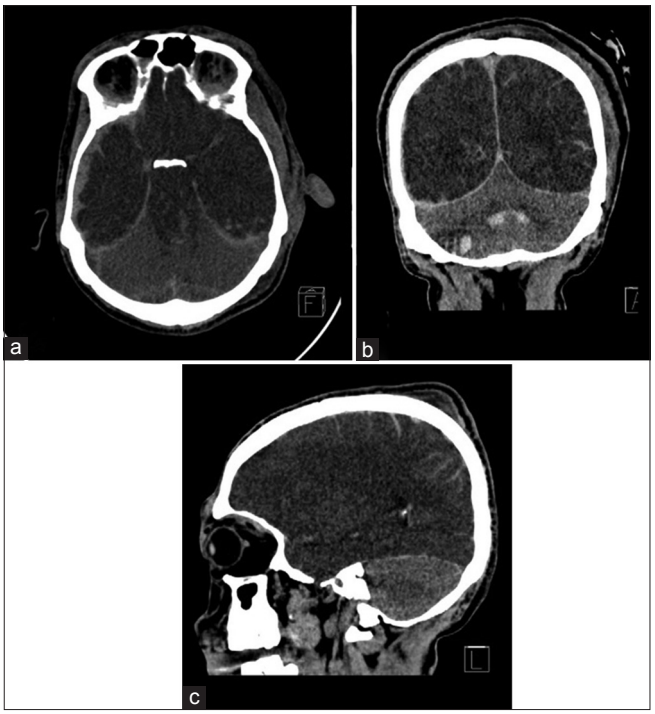

Figure 1: Computed tomography scans in (a) Axial, (b) Coronal, and (c) Sagittal sections showing with right-sided acute subdural hematoma, bilateral hypodense cerebral hemispheres, and brain stem, complete cisternal effacement, and patchy contusions. The cerebellum is hyperdense to the rest of the brain

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Address for correspondence:
Dr. Prasad Krishnan, Flat 3B, 9 South End Park, Kolkata - 700 029, West Bengal, India. E-mail: prasad.krishnan@rediffmail.com