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Saurabh Jain
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Saurabh Jain

Department of Neurosurgery, GBH American Hospital, Udaipur, Rajasthan, INDIA

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Introduction

A white cerebellar sign is a classic yet uncommon sign. An early recognition is required to prognosticate the patient. Initially it was described with child abuse (1) and perinatal hypoxia, but later on its implications were broadened to the traumatic brain injury too. Due to unknown reasons this sign is exclusively limited to pediatric population only.

Case presentation

A two year old female child brought to emergency department after an episode of fall from 12 feet height while playing. On examination her Glasgow Coma Scale was Three(E1V1M1). Very shallow respiration and pupils were not reacting. After initial intubation and ventilation, she was subjected to NCCT head. The NCCT head suggested multiple calvarial fractures, multiple contusions with Sub arachnoid Haemorrhage involving whole of cerebrum with generalised hypodensity of supratentorial compartment (Figures 1, 2, 3). The patient was kept in critical care unit. In spite of best efforts the clinical condition continued to deteriorate and she died after 36 hours of hospital admission.

Discussion

Generalised hypodensity in supratentorial compartment gives an illusion of hyperdense cerebellum, that's why it is also termed as White cerebellar sign or reversal sign. Initially it was described with perinatal hypoxia and child abuse but later on described in traumatic injury. Lot of case reports and review articles are available in medical literature (1-6), narrating this sign. Almost all of them describes very bad outcome except Chalela et al whose patient made a remarkable recovery (2).

The exact cause and mechanism is yet to decipher. The work of Myers is considered as a milestone who suggested that preservation of central structures is due to transtentorial herniation in stage of acute oedema. Though his observations were based on animal models (3). In his another work Myers suggested that elevated serum glucose secondary to anoxia, ischemia is the probable cause of this rampant process (4). While Bird et al hypothesised that distension of deep medullary vein secondary to obstruction in venous outflow in elevated intracranial pressure is the principle cause of this grave sign(5).

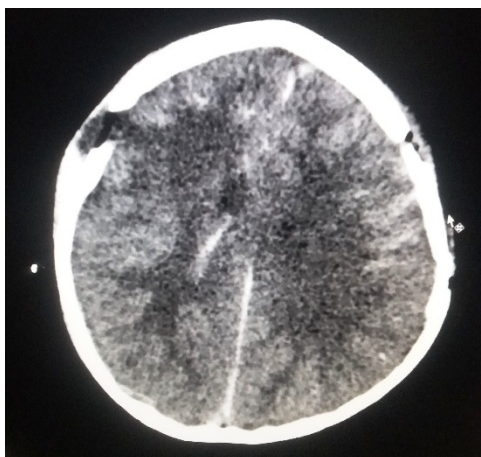


Figure 1 - Axial NCCT head showing multiple contusions and SAH and calvarial fractures

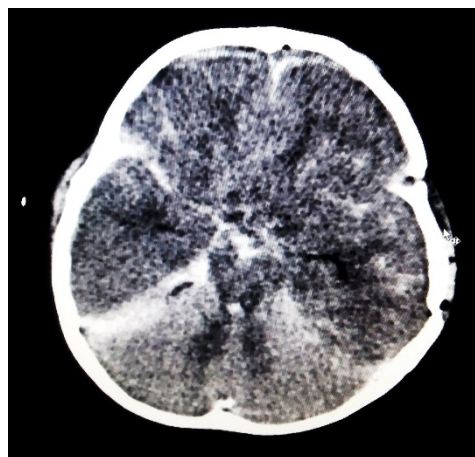


Figure 3 - Axial NCCT Head depicting Hypodensity of Supratentorial compartment

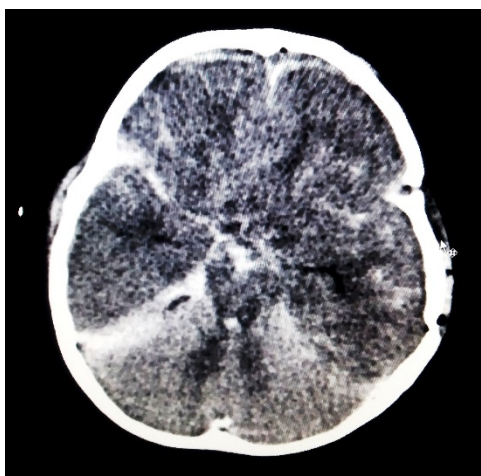


Figure 2 - Axial NCCT Head depicting Hypodensity of Supratentorial compartment

Conclusion

Generalised hypodensity in supratentorial compartment is suggestive of severe raise in intracranial pressure so much that it hampers the blood supply in bilateral cerebral hemisphere. This is seen as white cerebellar sign and associated with very bad prognosis usually in terms of mortality of sever morbidity.

Correspondence

Dr. Saurabh Jain

203, the Garnet, 33 B New Fatehpura, Udaipur, Rajasthan, India

Email: drsaurabh_jain@rediffmail.com

Mobile: +91 7746885699

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