

# Intracranial Pressure Monitoring and MultiModal Neurointensivism in Management of INTRACRANIAL HYPERTENSION in PICU.

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## Background and Aims:

Elevated Intracranial Pressure (ICP) is a potentially devastating complication of neurologic injury. In children, increased ICP is usually a complication of traumatic brain injury. However, it may also happens in children who have hydrocephalus, brain tumors, intracranial infections, hepatic encephalopathy, or impaired central nervous system venous outflow.

Successful management of children with elevated ICP requires prompt recognition and therapy directed at both reducing ICP and reversing its underlying cause. Early recognition of elevated ICP can prevent neurologic sequelae and death.

Intracerebral pressure monitoring is helpful in the early management and treatment of intracranial hypertension.

The objective of this study is to report a case of Intracranial pressure monitoring and multimodal neurointensivism in a child with intraparenchymal bleeding.

**Methods:** Case report

## Results:

An 8 years old boy was admitted at the pediatric intensive care unit (HMVSC, SP-BR) with an acute presentation of diffuse petechiae, epistaxis, fever and reduced level of consciousness (Glasgow coma scale=7). Labs showed pancytopenia and impaired coagulation. After clinical stabilization with fluids, antibiotics, mechanical ventilation and blood products, cranial CT scan showed 3 areas of intraparenchymal bleeding and a small uncal herniation.

An intraparenchymal catheter for intracerebral pressure (ICP) monitoring was installed to guide therapy. The multimodal monitorization was initiated with ICP measures, continuous electroencephalogram and transcranial doppler.

For diagnostic elucidation, a Myelogram was performed and demonstrated bone marrow aplasia.

During the neurointensive care management, measures for neuroprotection were performed. The ICP levels were unstable despite of an outburst-suppression pattern identified at continuous EEG after treatment with Thiopental. The new CT-scan did not show additional bleeding areas.

At follow-up, after removal of sedatives, there was a slight but continuous clinical improvement. This improvement of EEG monitorization and neurologic functions allowed the patient extubation.

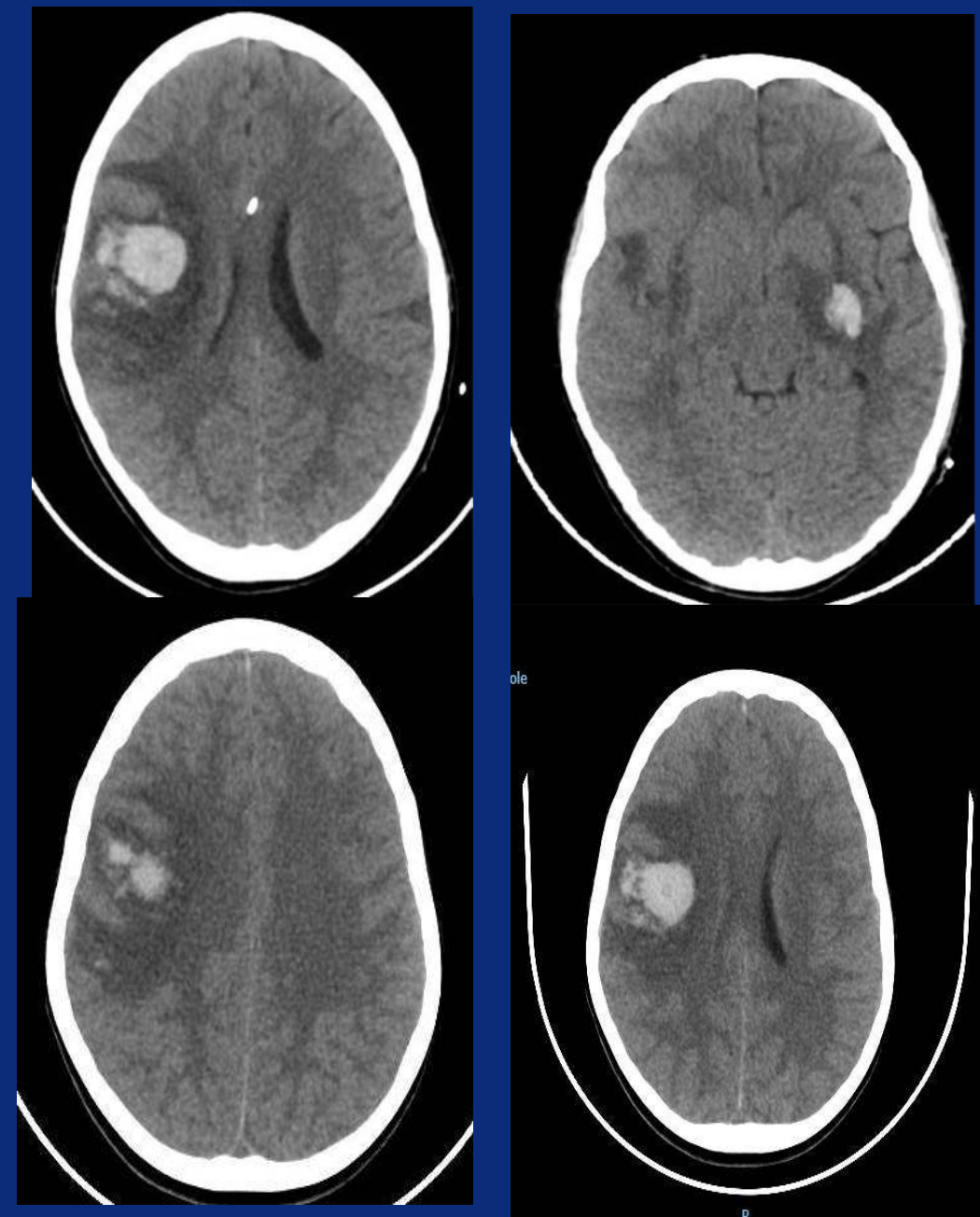
The patient was then transferred to a specialized hematology unit with almost full recovery of neurologic functions.

## Conclusions

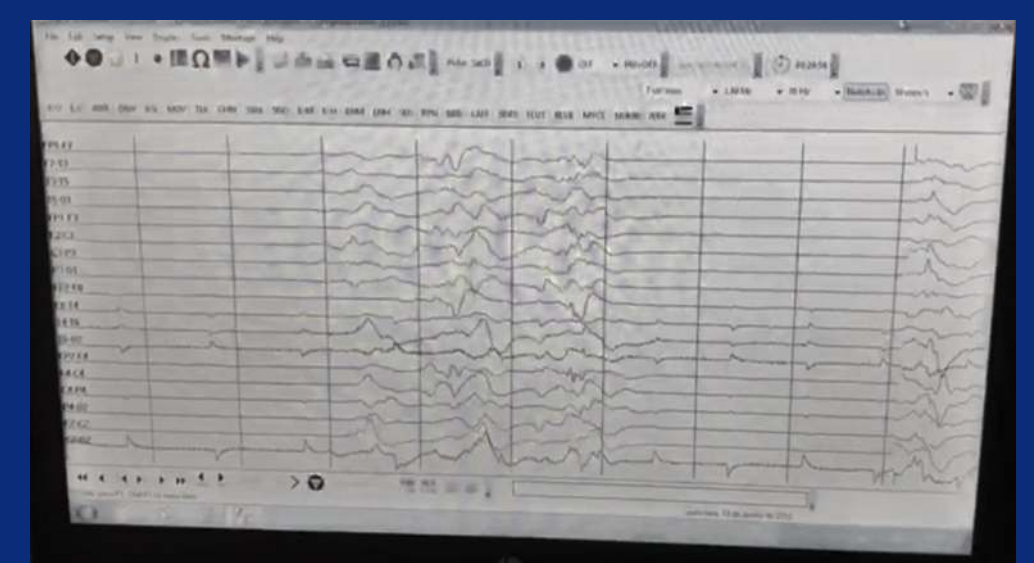
We report the case of a patient that survived an acute episode of severe spontaneous intracranial hemorrhage with clinical and radiological signs of intracranial hypertension and uncal herniation. We emphasize the importance of an early recognition and adequate management of intracranial hypertension with ICP monitoring in order to obtain a favorable outcome.

## Bibliography:

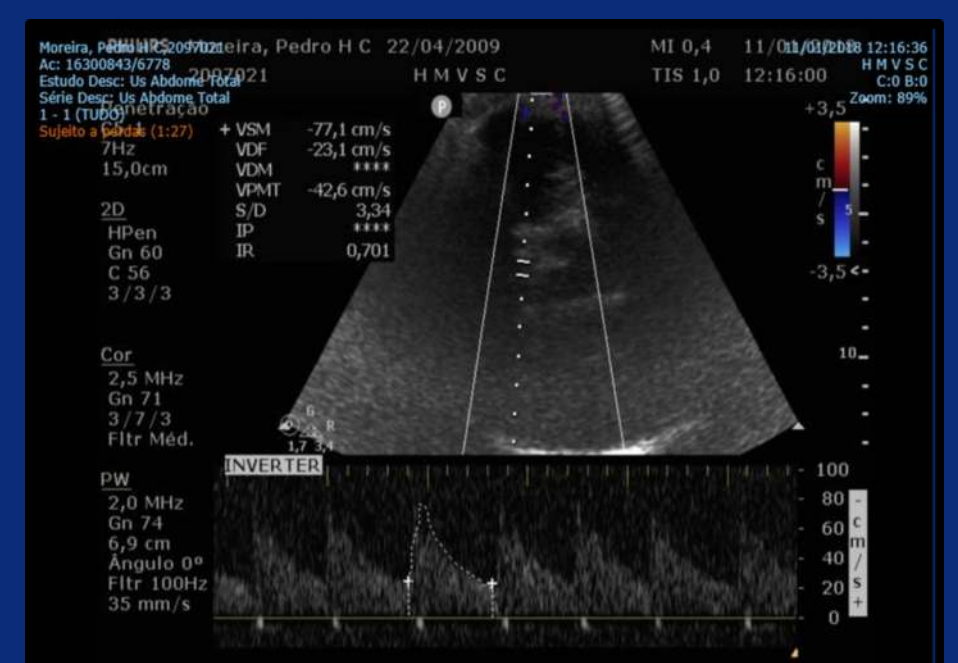
Aplastic anemia: pathophysiology and treatment. Young NS, Bacigalupo A, Marsh JC Biol Blood Marrow Transplant. 2010;16(1 Suppl):S119. Epub 2009 Sep 24.



Cranial CT: intraparenchymal bleeding.



EEG



US Doppler: fluxo em artérias cerebrais médias.