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We made several important observations in this study. First, PCT can be used to assess the salvageability of patients with poor GCS and/or uncal herniation. In a study period of 26 months, we only enrolled 16 patients with poor GCS and uncal herniation who CEPCT were performed before aggressive surgical treatment. In all cases, the attending neurosurgeon was present during the exam and transport of these critically ill patients. The preserved CBF and CBV in the midbrain were shown on the PCT map. The patient had good neurological recovery after surgery.

This early information provided by CEPCT is pivotal for both the surgeon and the family in terms of outcome prediction and clinical decision-making. Other clinical implications includes understanding BBB pathophysiology, surgical planning, brain death prediction/diagnosis, and diagnosis of the motor trephine syndrome.

1. Wintermark M, Chiolerio R, van Melle G, Revelly JP, Porchet F, Regli L, et al: Relationship between brain perfusion computed tomography variables and cerebral perfusion pressure in severe head trauma patients. *Crit Care Med* 32:1579-1587, 2004
2. Stiver SI, Wintermark M, Manley GT: Reversible monoparesis following decompressive hemicraniectomy for traumatic brain injury. *J Neurosurg* 109:245-254, 2004
3. Shlosberg D, Benifla M, Kaufer D, Friedman A: Blood-brain barrier breakdown as a therapeutic target in traumatic brain injury. *Nat Rev Neurol* 6:393-403, 2010
4. Pellon R, de Lucas EM, Fernandez CG, Florez AF, Piedra T: Usefulness of addition of CT perfusion to CT angiography for brain death diagnosis in a child. *Neuropediatrics* 41:189-192, 2010