

Interpeduncular cistern hemorrhage

Beretta et al. retrospectively reviewed a prospectively collected database of diffuse axonal injury (DAI) patients to evaluate the accuracy of the evidence of interpeduncular cistern (IPC) blood on computed tomography (CT) scan when diagnosing brainstem lesions (BSL) early after trauma. From December 1989 to December 2008 they prospectively maintained a clinical and radiological database of head injured patients admitted to the neurosurgical intensive care unit (ICU) that met the following criteria: coma (Glasgow Coma Scale [GCS] score < 9) following the traumatic event; neurological derangement not ascribable to hypoxia, hypotension, or long-acting drugs able to alter state of consciousness; absence of lesions accounting for the severity of coma either on the admission CT scan or on subsequent CT scans; and no contraindications to magnetic resonance imaging (MRI; e.g., indwelling metallic implants). Patients with MRI evidence of BSL exhibited a significantly higher incidence of IPC blood on CT scan than patients without such evidence (77.92% versus 20.00%; $p < 0.0001$). However, these same patients showed a similar incidence of lesions not associated with IPC blood (68.83% versus 56%; $p = 0.2459$). The evidence of IPC blood on CT scan as an indicator of BSL had a sensitivity of 0.78 (95% CI: 0.70, 0.86), and a specificity of 0.80 (95% CI: 0.72, 0.88), with a 3.90 likelihood ratio for a positive CT scan, and a 0.28 likelihood ratio for a negative CT scan. This data suggest that the finding of IPC blood on CT scan early after trauma in patients with otherwise unexplained coma is a good marker for possible brainstem lesions ¹⁾.

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Beretta L, Anzalone N, Dell'Acqua A, Calvi MR, Gemma M. Post-traumatic interpeduncular cistern hemorrhage as a marker for brainstem lesions. *J Neurotrauma*. 2010 Mar;27(3):509-14. doi: 10.1089/neu.2009.1054. PubMed PMID: 19938944.

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Last update: **2025/04/29 20:25**

