Teaching *NeuroImages*: Locked-in syndrome resulting from traumatic basilar artery occlusion following clivus fracture

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Figure 1 CT angiography and MRI of brain

(A–C) CT angiography demonstrates clivus fracture (black arrows), (A) flow in left vertebral artery (white arrow), (B) nonvisualization of proximal basilar artery, and (C) basilar artery reconstitution more distally (white arrow). (D) Diffusion-weighted imaging MRI shows acute brainstem infarcts.

A 67-year-old previously healthy man presented after head-first collision into a wall. Glasgow Coma Scale score on arrival was 11, but quickly deteriorated to 3. CT angiography and diagnostic angiogram demonstrated proximal basilar artery (BA) occlusion with nearby longitudinal clivus fracture (figures 1, A through C, and 2). MRI showed pontomedullary and cerebellar infarcts (figure 1D). These findings suggested BA entrapment by adjacent fractured clivus. Clinically, the patient's examination evolved to a locked-in state with purposeful vertical eye movements. Clivus fractures are rare in head trauma, occurring with <0.6% frequency.¹ Posterior circulation entrapment from clivus fracture, though also uncommon, is typically a poor prognosticator.²

AUTHOR CONTRIBUTIONS

Indranil Sen-Gupta, MD: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, acquisition of data. David A. Daiga, MD: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, acquisition of data. Mark J. Alberts, MD: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, acquisition of data, study supervision.

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Figure 2 Diagnostic cerebral angiogram

(A) Absent antegrade and (B) partial retrograde basilar artery filling (black arrows).

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