Hinge craniotomy has been described as an alternative to decompressive craniectomy for the control of intracranial pressure in traumatic brain injury and stroke. In this study, the authors highlight critical steps in performing a hinge craniotomy and present a clinical case of a patient with traumatic brain injury.

Keywords
- hinge craniotomy
- traumatic brain injury
- intracranial hypertension

Hinge craniotomy for Traumatic Brain Injury: Surgical Technique

Chirag Jain1, Indira Devi Bhagavatula1, Dhananjaya I. Bhat2, Dhaval Shukla1, Subhas Konar1

1 Department of Neurosurgery, National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, India
2 Department of Neurosurgery, RV Aster, Bengaluru, India

Abstract

Hinge craniotomy has been described as an alternative to decompressive craniectomy for the control of intracranial pressure in traumatic brain injury and stroke. In this study, the authors highlight critical steps in performing a hinge craniotomy and present a clinical case of a patient with traumatic brain injury.

ISSN 2277-954X.
Three independent investigators suggested an alternative to DC in 2007: hinge craniotomy (HC).\textsuperscript{6–8} They described the technique of resecuring the bone flap in a noncircumferential pattern to the skull, allowing it to hinge at one point. This provides space for the brain to expand through the defect, raising the bone flap. By enabling the bone flap to remain in situ, there would be minimal cosmetic defect. Once cerebral edema resolves, the bone flap would fall back into place, limiting the need for a subsequent cranioplasty.

HC has multiple advantages—maintained cerebral protection, avoidance of second surgery, and avoidance of unique DC-related complications. Numerous studies have demonstrated adequate control of ICP and comparable outcomes with HC in both TBI and stroke. A study conducted by Mishra et al\textsuperscript{9} in our institute demonstrated no significant differences in outcomes at the end of 1 year following either HC or DC for TBI and stroke. They also noted a lower rate of complications with HC compared with DC.

The aim of this video (\textsuperscript{►}Video 1) is to demonstrate the surgical technique of HC and highlight the nuances in performing the technique appropriately to ensure adequate decompression.

### Video 1

Video describing the steps of performing a hinge craniotomy in a patient with traumatic acute subdural hematoma.


**Conflict of Interest**

None declared.

**References**