Hinged craniotomy

- Meta-Analysis Comparing Outcomes of Hinge Craniotomy to Decompressive Craniectomy in Patients Suffering from Elevated Intracranial Pressures
- Contralateral subdural effusion following decompressive hinged craniotomy: A case report and narrative review
- Comparison of Outcomes of Hinge Craniotomy Versus Decompressive Craniectomy in Patients With Malignant Intracranial Hypertension: A Prospective, Randomized Controlled Study
- Decompressive Craniectomy and Hinged Craniotomy for Traumatic Brain Injury: Experience in Two Centers in a Middle-Income Country
- Fronto-Orbital Osteoblastoma With Unilateral Exophthalmos: A Rare Presentation and Review of Diagnostic Challenges
- Complications Following Decompressive Craniectomy
- Decompressive craniectomy in trauma: What you need to know
- Hinge Craniotomy for Posterior Cranial Vault Expansion: Using the Keel to the Surgeon's Advantage

A hinged craniotomy is a neurosurgical technique in which a bone flap is partially reattached to the skull using hinges (such as sutures, plates, or even absorbable materials) instead of completely fixing it back into place with rigid fixation. This allows for controlled expansion of the cranial vault postoperatively while still providing some protection for the underlying brain.

Indications

Malignant brain tumors (e.g., glioblastoma) that may cause postoperative swelling.

Decompressive craniectomy alternative: In patients who may need future reoperations or swelling relief.

Pediatric cases (e.g., craniosynostosis) where skull growth is a factor.

Traumatic brain injury (TBI): When there is concern about brain swelling but a full decompressive craniectomy is not necessary.

Technique

Skin Incision and Bone Flap Creation: A standard craniotomy is performed, but instead of removing the bone completely, one side remains attached as a hinge (commonly at the base or one side).

Hinge Placement: The bone flap is secured with sutures, mini plates, or bioabsorbable materials, allowing controlled movement.

Closure: The skin and dura are closed to allow for potential postoperative expansion.

Follow-up: If needed, the flap can be repositioned or removed later.

Advantages

Reduces the risk of syndrome of the trephined seen in large craniectomies.

Provides some protection compared to a full craniectomy.

Allows for brain swelling accommodation while avoiding a second major surgery to replace the bone flap.

Can improve cosmesis and reduce complications related to artificial implants.

Complications

Hinged craniotomy complications