

Skull defect

Cranial [defects](#) may arise due to trauma, infection, surgical ablation or errors in development.

A large cranial defect combined with hydrocephalus is a frequent sequela of [decompressive craniectomy](#) (DC) performed to treat malignant intracranial hypertension.

Restoration of such defects is important for esthetics, function and morale of the patient.

see [Cranioplasty](#)

Large cranial defects in very young patients are challenging. The ideal material for cranioplasty in this age group has not yet been identified. Cryopreserved autologous bone presents very high rates of failures, acrylic resins pose a number of compatibility problems, bioceramics may be contraindicated, and autografts may be not adequate for repair of large defects. We present an 18-month-old baby with a large post-traumatic cranial defect which was repaired by assembling a new bone flap on a sterile stereolithographic 3-D model. This customized newly assembled flap consisted of a scaffold of autologous bone (from vault duplication) sustaining 2 large grafts of homologous cadaveric bone. It was adequately modeled and contoured on the 3-D model using metallic plates and screws. Immediately after implantation on the skull, the metallic devices were progressively replaced by reabsorbable material, thus maintaining the previously obtained flap profile. In this paper we detail this original technique which was developed to manage this specific patient ¹⁾.

Congenital skull defect: include defect in [tegmen tympani](#).

[Reconstruction](#) of [skull](#) defects following [decompressive craniectomy](#) is associated with a high rate of [complications](#). Implantation of autologous [cryopreserved bone](#) has been associated with infection rates of up to 33%, resulting in considerable patient morbidity.

The aim of a study was to systematize the modern methods used for reconstruction of extensive and complex skull defects. Special attention is paid to computer technologies, including 3D imaging and CAD/CAM. Laser-based stereolithography is thoroughly reviewed among other additive technologies. We present our view of the problem associated with proper timing of cranioplasty and choice of materials for it. Complications of skull defect reconstruction are also discussed ²⁾.

Middle cranial fossa defect

[Middle cranial fossa defect](#)

¹⁾

Talamonti G, Crisà F, Canzi G. Transplant of Adult Bone for Reconstruction of a Large Post-Traumatic Cranial Defect in a Very Young Baby. *Pediatr Neurosurg*. 2019 Mar 15:1-5. doi: 10.1159/000496694. [Epub ahead of print] PubMed PMID: 30879012.

²⁾

Chobulov SA, Kravchuk AD, Potapov AA, Likhтерman LB, Maryakhin AD, Sinbukhova EV. [Modern aspects of reconstructive surgery of skull defects]. *Zh Vopr Neurokhir Im N N Burdenko*. 2019;83(2):115-124. doi: 10.17116/neiro201983021115. Russian. PubMed PMID: 31166326.

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