

# Temporalis muscle flap

The [temporalis muscle flap](#) was first described in the late 1800s for treatment of temporomandibular joint ankylosis and orbital reconstruction after exenteration. In 1917, Gillies described using the temporalis muscle to reconstruct malar deformities after trauma <sup>1)</sup>.

Later in 1934, he described tunneling the temporalis muscle and fascia to corner of the mouth and eyelid for facial reanimation <sup>2)</sup>.

Techniques for the temporalis muscle flap have since evolved for many uses in the head and neck. The temporalis muscle flap is generally thought to be a straightforward, reliable, regional flap with axial blood supply, and adequate bulk and flexibility for many craniofacial defects <sup>3)</sup>

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Traditionally, [galeal flap](#) or cranialization was often used to reconstruct the [skull base defect](#) caused by [trauma](#) or [tumor](#) removal. However, in the case of huge skull base defect, galeal flap is not enough to block the communication between [nasal cavity](#) and [intracranial](#) space.

Shin et al. suggested a combination flap of galea and reverse temporalis muscle as a method for reconstruction of huge skull base defect.

From 2016 to 2019, retrospective review was conducted, assessing 7 patients with bone defect which is not just opening of [frontal sinus](#) but extends to frontal sinus and [cribriform plate](#). Reconstructions were done by combination of galeal flap and reverse [temporalis muscle flap](#) transposition.

Defects were caused by [nasal cavity](#) tumor with intracranial extension or brain tumor with nasal cavity extension. There was no major [complication](#) in every case. During the follow up period, no patient had signs of complication such as ascending infection, herniation and CSF [rhinorrhea](#). Postoperative radiologic images of all patients that were taken at least 6 months after the surgery showed that [flaps](#) maintained the lining and the volume well.

Conventional reconstruction of skull base defect with galeal flap is not effective enough to cover the large sized defect. In conclusion, galeal flap in combination with reverse [temporalis muscle flap](#) can effectively block the communication of nasal cavity and intracranium <sup>4)</sup>.

<sup>1)</sup>

Speculand B. The origin of the temporalis muscle flap. Br J Oral Maxillofac Surg. 1992 Dec;30(6):390-2. PubMed PMID: 1450163.

<sup>2)</sup>

Gillies H. Experiences with Fascia Lata Grafts in the Operative Treatment of Facial Paralysis: (Section of Otology and Section of Laryngology). Proc R Soc Med. 1934 Aug;27(10):1372-82. PubMed PMID: 19989927; PubMed Central PMCID: PMC2205492.

<sup>3)</sup>

Clauser L, Curioni C, Spanio S. The use of the temporalis muscle flap in facial and craniofacial reconstructive surgery. A review of 182 cases. J Craniomaxillofac Surg. 1995 Aug;23(4):203-14. PubMed PMID: 7560105.

<sup>4)</sup>

Shin D, Yang CE, Kim YO, Hong JW, Lee WJ, Lew DH, Chang JH, Kim CH. Huge Anterior Skull Base Defect Reconstruction on Communicating Between Cranium and Nasal Cavity: Combination Flap of Galeal Flap and Reverse Temporalis Flap. J Craniofac Surg. 2020 Feb 7. doi:

10.1097/SCS.00000000000006221. [Epub ahead of print] PubMed PMID: 32049922.

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