Anterior skull base reconstruction

- The Role of Comprehensive Structural Preservation Strategy in Skull Base Reconstruction Following Endoscopic Endonasal Surgery for Pituitary Neuroendocrine Tumors: A Retrospective Single-Center Study
- Use of a Septal Stapler to Secure a Septal Free Mucosal Graft to the Nasoseptal Flap Donor Site Following Endoscopic Endonasal Resection of a Pituitary Adenoma
- Expert Strategies: Skull Base Reconstruction-Global Perspectives, Insights, and Algorithms through a Mixed Methods Approach
- The Eyelid Trans-orbital Trans-cavernous Approach to the Basilar Apex: A Cadaveric Proof-of-Concept Study
- Anatomical Step-by-Step Dissection of Complex Skull Base Approaches for Trainees: Surgical Anatomy of the Translabyrinthine and Transcochlear Approaches
- Cranial Reconstruction for Infiltrative Meningioma Using 68Ga-DOTATATE Positron Emission Tomography/Computed Tomography and Individual Patient Solutions CaseDesigner: A Case Series
- Deep Temporal Muscle Pedicled Flap: A Novel Reconstruction Technique Following Transorbital Approach, Anatomic Study, and Surgical Implications
- One-piece bifrontal basal craniotomy with pericranial flap for frontal sinus management: How I Do It

The development and widespread utilization of the nasoseptal flap has revolutionized anterior skull base reconstruction. Before the description of the nasoseptal flap in 2006, other local vascularized flaps such as the pericranial or temporoparietal fascia flaps were utilized and conveyed potentially unnecessary morbidity to patients. Reconstruction of the anterior skull base does not always require a vascularized tissue flap and can often be achieved with non-vascularized autologous or synthetic grafts. However, large skull base defects involving high-flow cerebrospinal fluid leaks require vascularized tissue reconstruction to avoid post-operative CSF leak and resultant complications. The nasoseptal flap utilizes mucosa based on a vascular pedicle within the nasal cavity that minimizes morbidity and maximizes success for anterior skull base surgical procedures.

The nasoseptal flap, also known as the Hadad-Bassagasteguy flap (HB flap), was developed at the University of Rosario, Argentina, and the University of Pittsburgh and was first described in 2006. Since then, there have been many theorized augmentations, proposed expansions, and enhanced indications for its use [1].

Consensus

There is limited consensus on endoscopic skull base surgery (ESBS) reconstruction principles. This study aims to generate comprehensive themes regarding ESBS reconstruction by pooling the experiences of ESBS experts, with comparison to a literature review of current published evidence.

Methods: Structured qualitative interviews of ESBS experts regarding postoperative management and reconstruction of various defect locations were conducted.

Results: A total of 68 experts comprising 40 academic teams across 13 countries with an average of 18 years of ESBS experience were included. We propose 10 stepwise algorithms for common skull base reconstruction scenarios based on these expert interviews. When available, the nasoseptal flap

is used for all high_flow cerebrospinal leak defects. Multilayered reconstruction is favored at all anatomical subsites with increasing number of layers for increasing defect size and complexity. Heterogeneity exists in terms of inlay technique and materials, free grafting versus various pedicled flap options for low-flow defects or in the absence of a nasal septum, nasal packing, tissue sealant, lumbar drain use, and postoperative management. Commonalities and discrepancies between experts were summarized.

Conclusion: Skull base reconstruction and post-ESBS management is highly complex with a wide variety of practice patterns and expert strategies. Further research of higher quality evidence is warranted to identify optimal management patterns, though the current work aims to inform surgeons on these controversial areas by drawing from numerous experiences [2].

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Hoerter JE, Kshirsagar RS. Nasoseptal Flap. 2022 Dec 5. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan–. PMID: 35015408.
2)
Kuan EC, Talati V, Patel JA, Nguyen TV, Abiri A, Pang JC, Goshtasbi K, Liu L, Craig JR, Papagiannopoulos P, Phillips KM, Tajudeen BA, Adappa ND, Palmer JN, Sedaghat AR, Wang EW, Anand V, Batra PS, Bergsneider M, Bernal-Sprekelsen M, Bleier BS, Cappabianca P, Carrau RL, Casiano RR, Castelnuovo P, Cavallo LM, Cohen MA, Dallan I, Eloy JA, El-Sayed IH, Evans JJ, Fernandez-Miranda JC, Ferrari M, Froelich S, Gardner PA, Georgalas C, Gray ST, Hanna EY, Harvey RJ, Hong SD, Hwang PH, Kelly DF, Kong DS, Lan MY, Lee JYK, Levine CG, Liu JK, Locatelli D, Meço C, McKean EL, Nicolai P, Nyquist GG, Omura K, Passeri T, Patel ZM, Celda MP, Neto CP, Rabinowitz MR, Rabinowitz MR, Raza SM, Recinos PF, Rosen MR, Sargi ZB, Schlosser RJ, Schwartz TH, Sindwani R, Snyderman CH, Stamm AC, Thorp BD, Turri-Zanoni M, Wang MB, Wang WH, Witterick IJ, Won TB, Woodworth BA, Wormald PJ, Zada G, Su SY. Expert Strategies: Skull Base Reconstruction-Global Perspectives, Insights, and Algorithms through a MixedMethods Approach. Int Forum Allergy Rhinol. 2025 May 15:e23596. doi: 10.1002/alr.23596. Epub ahead of print. PMID: 40371737.