Anterior Skull Base Defect reconstruction

Endoscopic endonasal approaches (EEA) have been used for skull base defect reconstruction surgeries. The nasoseptal flap (NSF), a vascular pedicled flap, was introduced to decrease postoperative cerebrospinal fluid leakage.

Purposes: This study aimed to outline the authors' institutional experience using NSF and rigid implants in anterior skull base defect reconstruction surgeries following EEA.

Design: A retrospective cohort review of patients who underwent NSF reconstruction following EEA in the Otorhinolaryngology and Neurosurgery Departments at King Saud University Medical City, Riyadh, Saudi Arabia, from January 2015 to May 2021, divided into 2 time periods according to the reconstruction technique.

Result: Out of the 106 patients who underwent EEA, 77 underwent NSF reconstruction. The majority had expanded EEA (94.8%). The mean age was 40.21 ± 17.7 years, and the female gender represented 61% of the sample. More than half of the sample underwent right NSF (57.1%). Meningioma was the most common diagnosis (45.5%). The clivus was the most frequent site of lesions (23.4%). The overall rate of postoperative CSF leakage and lumbar drainage (LD) insertion was 15.6% and 51.9%, respectively. The duration of LD was a median of four days. The overall failure rate was 13%, declining from 20% in the first period to 5.4% in the second period. Rigid implants were used significantly more in the first period than in the second period (67.5% versus 16.2%, $P < 0.001$). Meningitis, the highest postoperative complication, was reported in 6 patients (7.8%). One patient died three weeks postoperatively after massive nasal bleeding. No significant difference was found between either side of the NFS regarding the CSF leakage and failure rate.

Conclusion: In the authors' experience, there has been an overt decline in failure rates and complications of EEA over the last three years due to increased experience among surgeons and a standardization of reconstruction techniques. Minimal reconstruction may provide satisfactory results by decreasing the use of rigid implants. An endoscopic endonasal approach with an NSF for anterior skull base defect reconstruction is considered a safe procedure with no significant difference between the sides of the flap [1].

Endoscopic surgery is safe and effective for ASB reconstruction. Refinements in surgical technique and increasing experience have contributed to improving success rates over the years [2].

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2)
Turri-Zanoni M, Zocchi J, Lambertoni A, Giovannardi M, Karligkiotis A, Battaglia P, Locatelli D, Castelnuovo P. Endoscopic Endonasal Reconstruction of Anterior Skull Base Defects: What Factors Really Affect the Outcomes? World Neurosurg. 2018 May 9. pii: S1878-8750(18)30946-X. doi: 10.1016/j.wneu.2018.04.225. [Epub ahead of print] PubMed PMID: 29753077.