

Endoscopic endonasal transtethmoidal transcribriform approach

The [anterior skull base](#), in front of the [sphenoid sinus](#), can be approached using a variety of techniques including extended subfrontal, transfacial, and craniofacial approaches. These methods include risks of brain retraction, contusion, cerebrospinal fluid leak, meningitis, and cosmetic deformity. An alternate and more direct approach is the endonasal, transtethmoidal, transcribriform, transfovea ethmoidalis approach.

An endoscopic, endonasal approach was used to treat a variety of conditions of the anterior skull base arising in front of the sphenoid sinus and between the orbits in a series of 44 patients. A prospective database was used to detail the corridor of approach, closure technique, use of intraoperative lumbar drainage, operative time, and postoperative complications. Extent of resection was determined by a radiologist using volumetric analysis.

Pathology included meningo/encephaloceles (19), benign tumors (14), malignant tumors (9), and infectious lesions (2). Lumbar drains were placed intraoperatively in 20 patients. The CSF leak rate was 6.8% for the whole series and 9% for intradural cases. Leaks were effectively managed with lumbar drainage. Early reoperation for cerebrospinal fluid (CSF) leak occurred in 1 patient (2.2%). There were no intracranial infections. Greater than 98% resection was achieved in 12 of 14 benign and 5 of 9 malignant tumors.

The endoscopic, endonasal, transtethmoidal, transcribriform, transfovea ethmoidalis approach is versatile and suitable for managing a variety of pathological entities. This minimal access surgery is a feasible alternative to transcranial, transfacial, or combined craniofacial approaches to the anterior skull base and anterior cranial fossa in front of the sphenoid sinus. The risk of CSF leak and infection are reasonably low and decrease with experience. Longer follow-up and larger series of patients will be required to validate the long-term efficacy of this minimally invasive approach ¹⁾.

¹⁾

Greenfield JP, Anand VK, Kacker A, Seibert MJ, Singh A, Brown SM, Schwartz TH. Endoscopic endonasal transtethmoidal transcribriform transfovea ethmoidalis approach to the anterior cranial fossa and skull base. *Neurosurgery*. 2010 May;66(5):883-92; discussion 892. PubMed PMID: 20414977.

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