Building a Successful Endoscopic Skull Base and Pituitary Surgery Practice

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KEYWORDS

- Endoscopic skull base surgery • Cranial base surgery
- Minimally invasive skull base surgery • Building a practice • 2-surgeon approach
- Lessons learned

KEY POINTS

- Building an endoscopic cranial base practice can be challenging and is predicated on the right team of neurosurgeon and rhinologist.
- Requisites for a successful program include a dedicated multidisciplinary team of people and institutional and departmental support.
- Endoscopic cranial base programs can greatly enhance resident and fellow training by offering a broader surgical experience and perspective with the management of multiple disease entities and also allowing the acquisition of novel technical skills, such as bimanual endoscopic surgery through the nose.
- Successful outcomes stem from an attentive, efficient, and dedicated team that improves its skills experientially in a supportive environment.
- The advantages of endoscopic approaches to the skull base are becoming more established, and interest in offering an endoscopic skull base experience to patients in medical centers is growing.

INTRODUCTION

Endoscopic approaches to the skull base have become a central component in providing comprehensive care to patients with skull base pathologic conditions. Although early pioneers of endoscopic skull base surgery focused on establishing

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the feasibility and safety of these approaches,[1–4] the challenge of contemporary skull base practices is not *if* but *how* to integrate endoscopic techniques into their paradigm of patient care. Setting up a multidisciplinary skull base practice that incorporates endoscopy, however, comes with greater challenges than those encountered by a single surgeon offering a new service. On the other hand, the increased options available to treat complex skull base pathology and the resultant benefit to patients provided by a team that successfully integrates both open and endoscopic skull base techniques far exceed the practice-building challenges that are initially faced. This article explores some of the key building blocks (the *who*, *what*, *when*, *where*, and *how*) necessary for a successful endoscopic cranial base and pituitary program and highlights some of the lessons learned during the authors' journey at the Cleveland Clinic.

WHO

The key ingredient to building a successful endoscopic skull base program, or any program for that matter, is the people. In the case of endoscopic skull base surgery, this relationship centers on the partnership between the otolaryngologist and the neurosurgeon. The team must have a unified vision of what a successful program looks like. At its foundation, the partners must have mutual respect for one another and understand how each person contributes to the team. A clear example of this team approach is demonstrated in the operating room (OR) during pituitary surgery. Traditionally, this surgery was performed in a sequential manner via a transseptal, transnasal, or sublabial approach, which was subsequently followed by microscopic resection of the tumor.[5–7] These two roles were clearly defined and performed by each surgical team with minimal overlap. While the otolaryngologist opened and closed the surgical defect, the neurosurgeon resected the tumor. This procedure is in stark contrast to the way surgery is currently performed in a growing number of centers. Endoscopic skull base surgery involves constant overlap of the disciplines and frequent simultaneous 2-surgeon surgery using 3- and 4-handed techniques. This model only works with partners who are both committed to using a team approach.

Of course the skull base team extends far beyond the dyad of neurosurgeon and rhinologist (**Fig. 1**). Close interplay with many other specialty and hospital services, both on the outpatient and inpatient sides, is necessary. Additionally, the skull base neurosurgeon generally will initially evaluate referrals of primary intracranial pathology (pituitary tumors, meningiomas, chordomas, and so forth), whereas the skull base rhinologist will contribute referrals of primary sinonasal pathology (complex

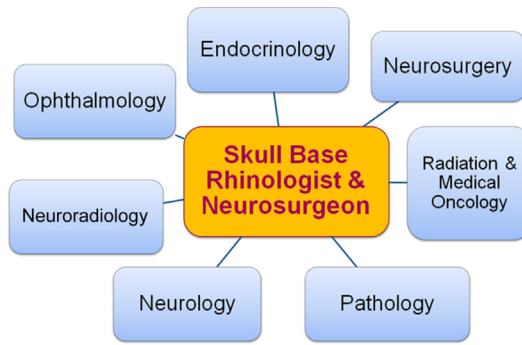

Fig. 1. Multidisciplinary network of specialists that support a robust endoscopic skull base program.