

Editorial

Over the past 20 years, there has been an evolution of cranial base surgery among multiple specialties, like neurosurgery, otolaryngology, maxillofacial surgery and plastic surgery. A variety of external approaches have been described that access the anterior, lateral and posterior cranial base from multiple transcranial and transfacial directions. In the last decade, there has been a paradigm shift linked to developing endoscopic technologies with the introduction of completely endoscopic endonasal approaches. All subspecialties want to shift their skills from invasive to minimally invasive intervention. This is always an issue that who should master the minimally invasive endoscopic procedures.



For otolaryngologists or head and neck surgeons training in the era of endoscopic sinus surgery, acquisition of endoscopic skills should occur in conjunction with training in external approaches to skull base. Endonasal skull-base procedures are categorized into five levels based on their technical difficulty, potential risk to neural and vascular structures, extent of intracranial dissection and type of pathology.

I am a strong proponent of team approach with the participation of multiple specialties. Working as a team builds the necessary skills for more advanced endonasal procedures and promotes cross-fertilization of ideas. Both surgeons and patients benefit from the combined expertise of these specialties.

The ideal skull-base surgeon should also understand oncological principles, to be able to perform both open and endoscopic approaches, can offer patients the best approach for their pathology, is able to choose the best reconstruction for the defect and is prepared to deal with emergencies that require a transition from an endoscopic to an open approach.

Unfortunately, most of the head and neck surgeons have forsaken endoscopic sinus surgery to focus on their oncological practice and may rarely use an endoscope. This may be changing, however, as endoscopic techniques are adopted for the resection of pharyngeal, laryngeal and thyroid neoplasms. The head and neck oncologist/skull-base surgeon should be well trained in oncological principles and external approaches to the skull base.

I am concerned about the training of future surgeons and whether they will be adequately trained in all skull-base approaches. In order to truly understand the options, relative advantages and limitations of different surgical approaches, the surgeon needs to have a sound anatomical foundation with experience in all surgical approaches. This allows the surgeon to tailor the surgical approach to the patient's disease and combining different approaches. I do not believe in the concept of an endonasal 'midline skull-base surgeon'; rather, the complete skull-base surgeon should employ the endoscope as another tool in his/her armamentarium.

It is unrealistic to expect that future surgeons can be trained in all surgical techniques. It is inevitable that some techniques will fall by the wayside and become obsolete, but there is still some value in having these surgical relics in your 'tool chest' to pull out when needed. Modern training programs in cranial base surgery should incorporate aspects of open and endoscopic surgery with competency-based training. This may require a team approach.

Courses with cadaveric dissection and the advent of surgical simulators will help to maintain familiarity with rarely performed procedures.

I hope that it will generate more discussion about the optimal training program.

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