

Endoscopic transsphenoidal approach technique

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The [endoscopic endonasal transsphenoidal approach](#) is a minimally invasive surgical technique for the removal of the [sellar region lesion](#) and parasellar lesions. The procedure is performed via an anterior [sphenoidotomy](#). The two main characteristics of the [endoscopic approach](#), when compared with the standard microsurgical operation, arise from the use of the [endoscope](#) as a unique optical device and from the absence of a transsphenoidal retractor. More convenient straight surgical instruments are employed, whereas bayonet-shaped tools are used in the microsurgical procedure, to avoid any interference with the light beam generated by the microscope. The standard surgical technique is composed of three main time phases: the nasal, sphenoid, and sellar phases. During the nasal phase, the scope is introduced through the chosen nostril and advanced up to the sphenoid recess, where the sphenoidotomy is performed. The sphenoid phase consists of the detachment of the nasal septum from the sphenoid rostrum, the anterior sphenoidotomy, removal of the sphenoid septum or septa, and identification of the landmarks inside the sphenoid sinus. In the sellar phase, an opening of the sellar floor is performed for removal of the lesion. A wide view of the sellar environment is obtained through angled scopes to detect eventual tumor remnants. The procedure ends with the reconstruction of the sella and removal of the endoscope from the nostril, without any postoperative nasal packing ¹.

[Supine position](#) with the trunk raised 10° and the head in neutral position rotated 10° towards the surgeon. The head is secured in a [Horseshoe Headrest](#) without rigid three-pin fixation. The nose is prepared by placing pledgets soaked with 0.02% of Oxymetazoline into each nostril, followed by Povidone Iodine solution applied over the nose and upper lip as well as into the nares with cotton tip applicators.

Under [general anesthesia](#), [orotracheal intubation](#), and [antibiotic prophylaxis](#) with cefazolin 2 gr IV. [Supine position](#) with a neutral head resting on a donut-type pillow. Preoperative topical intranasal [oxymetazoline](#) was applied with lectins.

Nasal phase

Right [middle turbinate](#) resection. Preparation of a [nasoseptal flap](#) with mucosa from the right septum. It is left lodged in the right [choana](#). Posterior [septostomy](#) and communication of both [nostrils](#). In the [ostium](#), a tumor is visualized that completely occupies the [sphenoid sinus](#). Wide anterior [sphenoidotomy](#) Profuse bleeding throughout the nasal phase comes from the tumor. Part of the left paramedian septum that was encompassed by the tumor was removed.

Excision phase

Excision of the tumor part contained in the sphenoid sinus until the bony limits of the sella turcica were visualized. With the help of neuronavigation and Doppler, both ICAs were located. Clivus partly eroded. In the most inferior and posterior parts, a bone area corresponding to the posterior clinoid is observed, which is moth-eaten and loose, encompassed by a tumor. Intracapsular excision of the tumor is started by way of debulking and sending tumor samples for AP analysis. The tumor shows a friable consistency and a purplish color compatible with a pituitary neuroendocrine tumor. Central excision until visualizing gradual descent of sellar and arachnoid diagrams in the sellar cavity with contained low-flow fistula. Exeresis in the posterior region until observing the dura mater of the posterior fossa. Excision of the lateral walls and part of the cavernous sinus. Hemostasis with Floseal.

Reconstruction phase

[Tachosil](#) is placed covering the arachnoid in the area of the contained fistula. A [nasoseptal flap](#) is placed in contact with the bone defect around the sellar opening. The flap is fixed with [surgicel](#) and [tissucol](#). Rapid -Rhino binasal tires are left. The free mucosa of the middle turbinate is left covering the part of the septum from which the flap has been removed.

see [Nasoseptal flap for anterior skull base reconstruction](#).

Establishing a reconstruction [protocol](#) for [cerebrospinal fluid fistula prevention](#) in patients undergoing [pituitary neuroendocrine tumor surgery](#) is crucial for facilitating intraoperative [decision-making](#) and reducing the incidence of [complications](#).

[pituitary neuroendocrine tumor](#) surgery is traditionally within the realm of the [neurosurgeon](#). However, since the reintroduction of the transeptal [transsphenoidal approach](#) and [Endoscopic transsphenoidal approach](#) to the [sella turcica](#) for resection of [pituitary neuroendocrine tumor](#), otolaryngologists have been active partners in the surgical management of these patients.

Otolaryngologists have lent their expertise in nasal and sinus surgery, assisting the neurosurgeon with the operation. The otolaryngologist has the advantage of familiarity with the techniques and instruments used to gain exposure of the [sella turcica](#) by transnasal approach. Hence, the otolaryngologist provides the exposure, and the neurosurgeon resects the tumour. Such collaboration has resulted in decreased rates of complication and morbidity ²⁾.

Randomized multicenter studies are necessary to resolve the controversy over endoscopic and microsurgical approaches in hypophyseal pathology ³⁾.

Racial, ethnic, and socioeconomic disparities exist for outcomes after pituitary surgery. Black and Hispanic patients have worse postoperative outcomes compared to white patients, as well as disproportionate utilization of Medicaid and low-volume pituitary surgery centers. Further investigations are necessary to uncover the sources of these disparities in an effort to provide safer and more affordable care to all patients ⁴⁾.

Racial and socioeconomic factors play a significant role in the admission of patients to high-volume [pituitary surgery](#) centers ⁵⁾.

[Patients](#) undergoing [transsphenoidal pituitary surgery](#) at [high-volume centers](#) (HVCs) have shorter [hospitalizations](#), fewer postoperative [electrolyte](#) abnormalities, and lower charges; however, [socioeconomic](#) factors may influence access to [quality care](#) ⁶⁾.

1)

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