

THE IMPLICATIONS OF MICROSURGICAL ANATOMY FOR SURGICAL APPROACHES TO THE SELLAR REGION – AVOIDING COMPLICATIONS

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The knowledge of the normal anatomy and variations regarding the management of tumors of the sellar region is paramount to perform safe surgical procedures. The sellar region is located in the center of the middle cranial fossa; it contains complex anatomical structures, and is the site of various pathological processes: tumor, vascular, developmental, and neuroendocrine. We review the microsurgical anatomy (microscopic and endoscopic) of this region and discuss the surgical nuances regarding this topic, based on anatomical concepts. The transsphenoidal approach has the following anatomic limits: (1) superiorly, the posterior cribriform region; laterally, the cavernous sinus and carotid arteries; and (3) inferiorly, based on the inferior placement of the retractor and the extent of visualization of the clivus (commonly the region of the cervicoclival junction). When a lateral extension is needed, a transmaxillary route may be used. Endoscopy may maximize the exposure in all directions. In treating lateral extension, the carotid grooves are unroofed, and there is a exposure of the C3 portion of the internal carotid—the entrance to the cavernous sinus is made by opening the dura just medial to the carotid artery. By proceeding this way, there is a reduction in the need for blind curettage of tumor as performed by reaching the cavernous sinus via the sella. The transsphenoidal approach to the sellar region requires great care with regard to the internal carotid artery and its branches. It is important to note the distance between the carotid artery and the lateral surface of the pituitary gland. When the artery does not indent the gland (which may happen in 25% of cases), there was a mean distance of 2.3 mm (1–7 mm).