

## **Extended Endoscopic Transnasal Approach For The Treatment Of Cranipharyngiomas**

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The surgical management of craniopharyngiomas is challenging because of their close proximity to crucial structures of the parasellar region. Previously, transsphenoidal surgery (TSS) had been considered a contraindication for lesions originating in, or extending into, the extrasellar space with a normal-size sella. However, the transsphenoidal removal of supradiaphragmatic craniopharyngiomas became possible through adoption of extended TSS, which was originally described by Weiss in 1987. Thus, in the 1990s, neurosurgeons began using extended TSS with a surgical microscope to remove supradiaphragmatic craniopharyngiomas, and more recently, the use of TSS with an endoscope has become more common in craniopharyngioma treatment. Our own series also confirmed the efficacy of radical resection of craniopharyngioma at primary and repeat surgery because it offers the best chance of disease control and potential cure, although endocrine function frequently worsens after surgery. However, extended TSS is contraindicated in certain types of craniopharyngiomas, including tumors with far-lateral extension beyond the internal carotid arteries or far-anterior extension, and tumors with major suprasellar calcifications. Dural fascia graft + nasoseptal flap is a very effective technique to prevent CSF leaks after extended TSS for craniopharyngiomas. In our series, gross total removal (GTR) can be achieved for most tumors without hypothalamic impairment, especially in primary surgery. There were lower GTR rates and higher complication rates in our repeat surgery patients. We believe that GTR should be the goal in craniopharyngioma surgery via endoscopic extended TSS when feasible, and it should be achievable without serious complications, although most patients require postoperative hormonal replacement. When GTR is not possible or tumor recurrence occurs after GTR, we recommend radiosurgery to prevent tumor regrowth or progression.