Hypopituitarism after surgery

Recovery from preexisting hypopituitarism after transsphenoidal surgery for pituitary neuroendocrine tumor is an important outcome to investigate. Furthermore, the pituitary function has not been thoroughly evaluated after fully endoscopic surgery, and benchmark outcomes have not been clearly established.

Little et al. characterized pituitary gland outcomes with a focus on gland recovery following endoscopic transsphenoidal removal of clinically nonfunctioning pituitary neuroendocrine tumors.

This multicenter prospective study was conducted at 6 US pituitary centers among adult patients with nonfunctioning pituitary macroadenomas who had undergone endoscopic endonasal pituitary surgery. Pituitary gland function was evaluated 6 months after surgery.

The 177 enrolled patients underwent fully endoscopic transsphenoidal surgery; 169 (95.5%) of them were available for follow-up. Ninety-five (56.2%) of the 169 patients had had a preoperative deficiency in at least one hormone axis, and 20/95 (21.1%) experienced recovery in at least one axis at the 6-month follow-up. Patients with adrenal insufficiency were more likely to recover (10/34 [29.4%]) than were those with hypothyroidism (8/72 [11.1%]) or male hypogonadism (5/50 [10.0%]). At the 6-month follow-up, 14/145 (9.7%) patients had developed at least one new deficiency. The study did not identify any predictors of gland recovery ($p \geq 0.20$). Permanent diabetes insipidus was observed in 4/166 (2.4%) patients. Predictors of new gland dysfunction included a larger tumor size ($p = 0.009$) and Knosp grade 3 and Knosp grade 4 ($p = 0.051$).

Fully endoscopic pituitary surgery resulted in the improvement of pituitary gland function in a substantial minority of patients. The deficiency from which patients were most likely to recover was adrenal insufficiency. Overall rates of postoperative permanent diabetes insipidus were low. This study provides multicenter benchmark neuroendocrine clinical outcome data for the endoscopic technique [1)].

1)
Little AS, Gardner PA, Fernandez-Miranda JC, Chicoine MR, Barkhoudarian G, Prevedello DM, Yuen KCJ, Kelly DF; TRANSSPHER Study Group. Pituitary gland recovery following fully endoscopic transsphenoidal surgery for nonfunctioning pituitary neuroendocrine tumor: results of a prospective multicenter study. J Neurosurg. 2019 Nov 15:1-7. doi: 10.3171/2019.8.JNS191012. [Epub ahead of print] PubMed PMID: 31731279.