Outcome aspects of pituitary surgery

Background:
Pituitary adenomas are common benign intracranial tumors that can cause symptoms by overproducing pituitary hormones, reducing pituitary function or compressing neural structures surrounding the pituitary. Surgery is often the first line of treatment. As both the tumor and the treatment can cause a wide array of symptoms many different aspects of outcome are important to highlight.

Method:
The first aim is to clarify if choice of surgical technique may impact health related quality of life (HRQoL) and work-related outcome after surgery. Second, a local method in determining cure after surgery of Cushing’s disease is evaluated. Thirdly we examine if the introduction of 3D-endoscopy is of benefit to the patient or the health care system. Finally, patients with reduced visual acuity caused by non-functioning adenomas are summarized with regard to prognosis and results after surgical treatment. The third aim is achieved via a prospective comparison of patients prior to and after the introduction of 3D-endoscopy. The three other aims are all done by retrospective review of patients’ files and patient questionnaires. Statistics are calculated with R-project.

Preliminary results:
I: HRQoL was not affected by surgical technique or surgical complications in long-term follow-up but showed an overall trend toward lower values compared with the general population. Sick leave, return to work frequency, and permanent sick leave were not affected by surgical technique. Female gender was a factor for lower ratings in all outcome variables thus having a greater risk of decreased HRQoL and work ability after pituitary surgery. II: The locally developed suppression test can safely predict short- and long-term remission after surgery of Cushing’s disease. Plasma cortisol after 24 h with betamethasone was most accurate in predicting both short- and long-term remission (Three-month remission with cut-off 107 nmol/L: sensitivity 0.85, specificity 0.94, positive predictive value (PPV) 0.96 and AUC 0.92 (95% CI 0.85–1). Five-year remission with cut-off 49 nmol/L: sensitivity: 0.94, specificity 0.93, PPV 0.88, AUC 0.98 (95% CI 0.95–1).

Impact:
The published and future results may help physicians and patients in relaying realistic expectations of surgical treatment of pituitary adenomas.

Publications: