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Clinical characteristics and outcomes of patients treated for acromegaly at The Ottawa Hospital

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Background: Acromegaly is associated with significant morbidity. The purpose of this study was to establish characteristics and outcomes of patients treated for acromegaly at The Ottawa Hospital, to compare our results with published reports from other centers and to identify opportunities to improve patient care. **Methods:** A retrospective chart review of patients surgically and medically treated for acromegaly between January 1, 2007 and December 31, 2016 was completed. Demographic information, biochemical data, presenting features, disease comorbidities, treatment interventions, and were collected. **Results:** Fifty-one patients were identified using CCI/ICD-10 codes and IGF-1 levels. Similar to other centers, the majority of patients had a macroadenoma (78.4% vs 11.8%) with a high percentage invading the cavernous sinus (57.5%). While surgical intervention was performed in 90% of patients, only 23.3% of patient achieved surgical cure (IGF-1 normalization within reference range). Approximately 30% of patients were controlled with adjuvant medical therapy while more than 40 % had elevated IGF-1 levels at last follow-up. Radiotherapy was less commonly used. **Conclusions:** Despite a multi-modal treatment approach for acromegaly, outcomes are variable. This study highlights the need for further research to better understand factors associated with surgical cure, response to medical therapy and the role of radiotherapy.

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Epidemiologic features of pituitary adenoma patients requiring surgical treatment: large North American patient population based study

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Background: The surgical treatment of pituitary adenoma has evolved greatly over the decades. In order to better understand the patient population and their surgical treatment, we conducted an institutional review for pituitary adenoma surgery using the endoscopic endonasal trans-sphenoidal (EETS) approach. **Methods:** A retrospective review of all EETS cases for pituitary tumor resection was performed between November 2009 and June 2016. Patient characteristics, tumor type, endocrine data, operation characteristics were extracted from medical records. Preoperative MRI images were reviewed. The SIPAP classification was applied to the pituitary tumors. Postoperative patient data were extracted for the available follow-up period. **Results:** 232 cases were identified. Functional tumors were present in 29% of the cohort. Complete excision was most common for functioning tumors (49%) compared to nonfunctioning tumors (26%). There were no major vascular injuries. Hormone replacement with cortisol was required transiently in 70% of patients, with thyroid hormone replacement occurring in 40% of the cohort. **Conclusions:** From this large North American cohort nearly 30% of operated pituitary tumors were functioning. More commonly, these tumors were completely resected compared to the nonfunctioning group. The most commonly replaced hormone following EETS surgery was cortisol and this was largely transient.

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Predictability of pituitary tumor resection and recurrence following endoscopic endonasal trans-sphenoidal surgery

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Background: The surgical treatment of pituitary tumour has undergone substantial changes over time. In this study we evaluated our institutional results for pituitary tumour surgery using the endoscopic endonasal trans-sphenoidal (EETS) approach. **Methods:** Patient demographic, clinical and surgical data were extracted from medical records. Preoperative MRI images were reviewed. The SIPAP classification was applied to the pituitary tumors. Chi2 test and t test were used for statistical analysis. **Results:** 202 cases were identified. Functional tumors were present in 29% of the cohort. Patients with a suprasellar or parasellar SIPAP score of 0 or 1 had complete resection of their tumor in 66.6% of cases, compared to 29% with a suprasellar or parasellar SIPAP score $\geq$ 2 (Risk Ratio 2.3 CI 1.58-3.39, p=0.0005). When the tumor was completely resected radiologically, the mean time to recurrence was not different for the SIPAP 0 or 1 group which was 27 months in comparison to 34 months for the group with a SIPAP score 2 (p=0.13). **Conclusions:** Our study results showed that the preoperative MRI SIPAP score can be used to better inform patients about their expected outcomes of EETS.

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A systematic review of the prophylactic antibiotic use in endoscopic endonasal transsphenoidal surgery for pituitary lesions

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Background: The benefit of prophylactic antibiotic use in endoscopic endonasal transsphenoidal surgery (EETS) for pituitary lesions is controversial. Many surgeons administer antibiotics perioperatively not based on clear guidelines but “to be safe”. **Methods:** A systematic review using PRISMA guidelines was performed to assess the efficacy of perioperative antibiotic use to prevent infectious complications in patients undergoing EETS. Inclusion criteria: randomized controlled trials, systematic reviews, observational studies, and case series. Data extracted: study design, year of publication, sample size, surgery type, perioperative antibacterial treatment (antibiotic, dose, and duration), number of patients with 30-days post-operative meningitis and/or sinusitis. End points: rates of meningitis and sinusitis post-EETS. **Results:** A total of 280 articles were identified. Four observational studies met inclusion criteria. Based on GRADE score these studies were considered low in quality. 633 patients were