

P.091**Surgical outcomes for patients undergoing repeat endoscopic endonasal trans-sphenoidal surgery for recurrent pituitary adenomas**

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Background: Endoscopic endonasal trans-sphenoidal surgery (EETS) is a commonly used approach for the surgical treatment of primary pituitary adenomas. The role of this approach in patients with recurrent disease remains unclear. Here we review a high-volume institutional experience with repeat EETS for recurrent pituitary adenomas and compare outcomes against primary surgeries.

Methods: A retrospective chart review of patients who underwent EETS at Toronto Western Hospital from 2008-2016 for pituitary adenomas was completed. Baseline patient characteristics and surgical outcomes were recorded for each surgery. Primary and repeat operations were compared for analysis using Fisher's exact test and *t*-test where appropriate. **Results:** 347 primary and 48 repeat surgery patients were identified. The median follow-up was 3.6 years (range 0-10.6 years). Rates of GTR, optic decompression, endocrinopathy cure, and visual improvement in repeat EETS were 44%, 21%, 22%, and 21%, respectively. While these rates are lower when compared to primary surgeries (75% $p<0.001$, 58% $p<0.001$, 75% $p=0.01$, 37% and $p=0.04$), they demonstrate that desirable outcomes are still achievable after EETS for recurrent disease. **Conclusions:** These results from a quaternary-care centre suggest that repeat EETS is a viable option that is safe and effective at improving the visual and endocrine status in select patients with recurrent pituitary disease.

P.092**The effect of the timing of surgery on outcomes for incidental low-grade gliomas: a systematic review**

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Background: Although previous research has suggested that patients with incidentally discovered low-grade gliomas (iLGG) who undergo surgery prior to the appearance of symptoms have improved outcomes compared to those who are symptomatic, an ideal approach to managing iLGG is not well-established. The purpose of this systematic review is to identify all cases of iLGG in the literature and characterize the effect of the timing of surgery on survival. **Methods:** We searched EMBASE, MEDLINE, and PubMed for articles related to iLGG. After duplicates were removed, the articles were then screened based on strict inclusion and exclusion criteria. **Results:** We retrieved 24/1377 unique articles with a total of 175 patients who underwent surgery for iLGG prior to symptoms appearing. The average age was 29.1yrs (range 1-62) and the mean follow-up period was 56 months (range 1-234months). Unfortunately, only 6/24 articles reported progression-free survival (average 32.4months) and only 1/24 reported 10-year survival. **Conclusions:** The articles we identified favored an early intervention for iLGG, however, there was a considerable lack of long-term follow-up and survival data to justify

such a claim. Further studies need to be performed with adequate follow-up data in order to determine the optimal timing of surgical intervention for these patients.

P.093**Visual outcomes after expanded endoscopic endonasal resection of suprasellar meningiomas and optic nerve decompression**

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Background: The Endoscopic endonasal approach (EEA) has become increasingly popular in the treatment of suprasellar meningiomas, which often cause visual symptoms due to compression of the anterior optic apparatus. **Methods:** We performed a retrospective chart review on patients who underwent EEA optic nerve decompression and resection of suprasellar meningiomas between January 1st 2005 and December 1st 2018 at McMaster University. **Results:** The mean age of our patients was 59.8 years. We treated 9 male and 23 female patients, with a mean follow up of 6.29 years. 23 patients (71.9%) presented with visual symptoms, with a mean duration of 8.65 months. In our patient cohort, 95.5% had stable or improved visual acuity postoperatively. Less than six months of visual decline was more likely to be associated with postoperative improvement of visual acuity, with an odds ratio (OR) of 0.0222 (95% CI: 0.0017–0.289, $p<0.05$); as well as visual field (OR: 0.0625; 95% CI, 0.0042–0.915, $p<0.05$). Additionally, the absence of RAPD was associated with improved postoperative visual acuity (OR: 0.0675; 95% CI, 0.0354–0.706, $p<0.05$). **Conclusions:** Endoscopic endonasal approach can achieve good visual outcome in patients harboring suprasellar meningiomas. Symptom duration of less than six months and absence of RAPD were positive predictor of postoperative visual outcome.

P.094**Incorporating Navigated Transcranial Magnetic Stimulation (nTMS) into the neurosurgical practice: oncological, vascular and research potentials**

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Background: Surgical management of eloquent lesions in the brain require a multidisciplinary approach. Radiographic imaging, such as magnetic resonance, can provide details of "normal" anatomy however are limited when lesions can distort/displace due to mass effect or neuroplasticity. Functional MRI (fMRI) has limitations due to patient dependent actions can often be limited due oncological or vascular lesions but known to still be near or involving "eloquent" cortex. Navigated transcranial magnetic stimulation (nTMS) provides the physician with the ability to accurately (~2mm error) stimulate cortex of the brain, in a clinical setting, and to understand function of areas of motor and language and incorporate this information into the surgical theatre. **Methods:** We will present a personal experience of complex oncological and vascular cases to illustrate how nTMS can assist in the determination of surgical approaches and educating patients of potential morbidities. Will also