approach type, reconstruction technique, tumor pathology and outcomes were collected. Results: Forty-six patients underwent transclival EEA. The majority had ASA scores II and III (71.7%), with clival chordomas being the most common pathology (37%). Cranial nerve impairment was present in 65% of patients, and 80% showed improvement post-surgery. The mean procedure duration was 308 minutes, with a mean blood loss of 424 mL. A lumbar drain was used in 10.9%, and 76.1% received a pedicled nasoseptal flap for reconstruction. Complete tumor resection was achieved in 74% of malignant cases. Postoperative CSF leaks occurred in 4.3%, and the mean length of stay was 12.2 days. Higher readmission rates were associated with ASA IV classification (p=0.006). Conclusions: EEA to the clival region is safe and effective, with low perioperative complications and high rates of postoperative improvement.

## P.155

### Endoscopic endonasal approaches for the resection of anterior skull base meningiomas

*A Vargas-Moreno (Ottawa)* S Khairy (Ottawa) M Saymeh (Ottawa) J Rabski (Ottawa) S Kilty (Ottawa) F AlKherayf (Ottawa)*

doi: 10.1017/cjn.2025.10301

Background: This study aims to review the clinical outcomes, extent of resection, complications, and prognostic factors in patients undergoing endonasal endoscopic resection (EEA) of anterior cranial base meningiomas. Methods: We conducted a retrospective review of 25 patients who underwent EEA resection of these lesions between 2001 and 2023. We assessed the extent of resection, complications, postoperative outcomes, and key technical aspects of the procedure. Results: 84% of patients were classified as ASA class III. Additionally, 64% of patients presented with visual disturbances. The mean blood loss was 472 ml. Intraoperative lumbar drains were used in 40% of cases, and dural sealants in 56%. A pedicled nasal flap was employed for reconstruction in 92% of cases. One vascular injury was documented, and 16% of patients developed a cerebrospinal fluid (CSF) leak in the postoperative period The degree of resection varied according to tumor location. Prognostic factors for achieving gross total resection, functional improvement, and key factors for reconstruction are discussed. The rate of CSF leaks decreased dramatically in the later years of the series Conclusions: Cranial base meningiomas can be successfully managed via a purely endoscopic endonasal approach, with acceptable morbidity and mortality rates.

## P.156

### The role of indocyanine green fluorescence in the treatment of pituitary tumors

*A Vargas-Moreno (Ottawa)* S Khairy (Ottawa) M Saymeh (Ottawa) J Rabski (Ottawa) S Kilty (Ottawa) F AlKherayf (Ottawa)*

doi: 10.1017/cjn.2025.10302

Background: Biochemical cure in functional pituitary adenomas (FPA) is crucial for reducing patient morbidity and improving quality of life following endoscopic endonasal procedures (EEA). The extent of resection plays a key role in achieving these outcomes. However, even with the aid of intraoperative navigation, complete resection of tumor components can be challenging due to the difficulty in distinguishing them from normal pituitary tissue. Indocyanine green (ICG) fluorescence has been used effectively in various cranial and spinal procedures, but its role in endoscopic skull base surgery has not yet been routinely established Methods: In this study, we describe our experience using ICG during EEA for the resection of FPA. Results: We discuss the fluorescence profiles of both adenomas and normal gland tissue. ICG helped identify additional tumor tissue that was not initially detected after macroscopic adenoma resection. It also allowed for perfusion assessment of the pituitary gland and nasoseptal flaps. No complications were observed following the ICG injection, and biochemical cure was achieved in more than 90% of cases. Conclusions: Our experience suggests that ICG is a safe and promising tool, improving both the extent of resection and endocrinologic outcomes in patients undergoing EEA for FPA.

## P.157

### TERT expression predicts progression-free survival in meningiomas

*C Gui (Toronto)* JZ Wang (Toronto) V Patil (Toronto) AP Landry (Toronto) P Castelo-Branco (Faro) U Tabori (Toronto) F Behling (Tubingen) K Aldape (Bethesda) JS Barnholtz-Sloan (Bethesda) CM Horbinski (Chicago) G Tabatabai (Tubingen) A Ajisebutu (Toronto) J Liu (Toronto) Z Patel (Toronto) R Yakubov (Toronto) R Kaloti (Toronto) Y Ellenbogen (Toronto) C Wilson (Tulsa) A Cohen-Gadol (Los Angeles) M Tatagiba (Tubingen) EC Holland (Seattle) AE Sloan (Cleveland) S Chotai (Nashville) LB Chambless (Nashville) A Gao (Toronto) S Makarenko (Vancouver) S Yip (Vancouver) F Nassiri (Toronto) G Zadeh (Toronto)*

doi: 10.1017/cjn.2025.10303

Background: TERT promoter mutation (TPM) is an established biomarker in meningiomas associated with aberrant TERT expression and reduced progression-free survival (PFS). TERT expression, however, has also been observed even in tumours with wildtype TERT promoters (TP-WT). This study aimed to examine TERT expression and clinical outcomes in meningiomas. Methods: TERT expression, TPM status, and TERT promoter methylation of a multi-institutional cohort of meningiomas (n=1241) was assessed through nulk RNA sequencing (n=604), Sanger sequencing of the promoter (n=1095), and methylation profiling (n=1218). 380 Toronto meningiomas were used for discovery, and 861 external institution samples were compiled as a validation cohort. Results: Both TPMs and TERT promoter methylation were associated with increased TERT expression and may represent independent mechanisms of TERT reactivation. TERT expression was detected in 30.4% of meningiomas that lacked TPMs, was associated with higher WHO grades, and corresponded to shorter PFS, independent of grade and even among TP-WT tumours. TERT expression was associated with a shorter PFS equivalent to those of TERT-negative meningiomas of one higher grade. Conclusions: Our findings highlight the prognostic significance of TERT expression in meningiomas,

even in the absence of TPMs. Its presence may identify patients who may progress earlier and should be considered in risk stratification models.

## P.158

### Molecular characterization of RTOG-0539 risk groups in meningioma: insights into radiotherapy response and tumor biology

*L Yefet (Toronto)* A Landry (Toronto) J Wang (Toronto) J Liu (Toronto) V Patil (Toronto) C Gui (Toronto) Y Ellenbogen (Toronto) A Ajisebutu (Toronto) F Nassiri (Toronto) G Zadeh (Toronto)*

doi: 10.1017/cjn.2025.10304

Background: Meningiomas are the most common intracranial tumors. Radiotherapy (RT) serves as an adjunct following surgical resection; however, response varies. RTOG-0539 is a prospective, phase 2, trial that stratified patients risk groups based on clinical and pathological criteria, providing key benchmarks for RT outcomes. This is the first study that aims to characterize the molecular landscape of an RT clinical trial in meningiomas. Methods: Tissue from 100 patients was analyzed using DNA methylation, RNA sequencing, and whole-exome sequencing. Copy number variations and mutational profiles were assessed to determine associations with meningioma aggressiveness. Tumors were molecularly classified and pathway analyses were conducted to identify biological processes associated with RT response. Results: High-risk meningiomas exhibited cell cycle dysregulation and hypermetabolic pathway upregulation. 1p loss and 1q gain were more frequent in aggressive meningiomas, and NF2 and non-NF2 mutations co-occurred in some high-risk tumors. Molecular findings led to the reclassification of several cases, highlighting the limitations of histopathologic grading alone. Conclusions: This is the first study to comprehensively characterize the molecular landscape of any RT trial in meningioma, integrating multi-omic data to refine treatment stratification. Findings align with ongoing genomically driven meningioma clinical trials and underscore the need for prospective tissue banking to enhance biomarker-driven treatment strategies.

## P.159

### Negative feedback between Ezh2 and Cyclin D1 governs granule neuron precursor fate

*A Chahin (Kingston)* J Purzner (Kingston) T Purzner (Kingston)*

doi: 10.1017/cjn.2025.10305

Background: While developing a differentiation therapy for Sonic Hedgehog Medulloblastoma (MB), we discovered a potential paradoxical feedback cycle between Ezh2, a protein that temporarily keeps differentiation genes silenced via trimethylating H3K27, and Cyclin D1, a protein that regulates cell cycle entry. Methods: We quantified H3K27me3 in P7 purified cerebral GNPs using chromatin immunoprecipitation sequencing and correlated it with gene expression via RNA sequencing (RNA-seq). To assess transcriptional effects of Ezh2 loss, we purified P7 GNPs from Math1-Cre, Ezh2-flox knockout mice. MB cells were cultured in suspension spheres and imaged using the ImageXpress Micro XLS system, with nuclei segmented based on DAPI staining. Results: Cyclin D1 ranked among the top 7.37% of expressed genes but was heavily marked by the repressive histone mark H3K27me3 (top 5.5%) in GNPs. Ezh2 overexpression increased G0-arrested MB cells 2.7-fold, while, in GNPs, RNA-seq showed significant Cyclin D1 upregulation in Ezh2 knockout mice (Log2FC: 1.301). Cyclin D1 regulates the pRb/E2F1 complex, and we observe that Ezh2 expression depends on pRb/E2F1 complex abundance, forming a feedback loop. Notably, combining the Hedgehog inhibitor Vismodegib with an Ezh2 inhibitor rescued MB cells from Vismodegib-induced death. Conclusions: Our study introduces a model that promotes GNP differentiation, leading tumor cells to differentiate into neurons.

## P.160

### Convexity dermoid cyst: a case report and review of the literature

*B Newton (Saskatoon)* P Toyota (Saskatoon) V Zherebitskiy (Saskatoon) A Wu (Saskatoon) L Hnenny (Saskatoon)*

doi: 10.1017/cjn.2025.10306

Background: Dermoid cysts are rare benign intracranial lesions arising from abnormal neuroectodermal folding during embryogenesis. While typically midline, near the sella or posterior fossa, we report an unusual case of a convexity dermoid cyst extending into the sylvian fissure. Methods: A 33-year-old female with a left convexity mass underwent resection, confirming a dermoid cyst. A literature review was also conducted. Results: The patient presented with progressive, intermittent right-sided hand and face paresthesias. CT showed a 4.3 × 4.7 cm hypodense lesion with peripheral calcification contiguous with the calvarium. MRI revealed an extra-axial, T2-hyperintense, T1-hypointense lesion with internal septations extending from the calvarium into the sylvian fissure. Craniotomy achieved gross total resection, revealing a soft lesion with interwoven hair, suggestive of a dermoid cyst. Pathology confirmed a cystic lesion with mature squamous epithelium, keratin, skin appendages, and chronic inflammation. Conclusions: Dermoid cysts are rare intracranial lesions that most commonly occur in the midline. This case highlights a rare convexity dermoid cyst, expanding our understanding of its atypical locations.

## P.161

### Postoperative visual deterioration after endoscopic pituitary adenoma resection: predictors, management, and long-term sequelae

*S Khairy (Ottawa)* A Vargas-Moreno (Ottawa) M Saymeh (Ottawa) J Rabski (Ottawa) S Kilty (Ottawa) F AlKherayf (Ottawa)*

doi: 10.1017/cjn.2025.10307

Background: Postoperative visual deterioration following endoscopic endonasal surgery for pituitary adenoma is very rare yet significant morbidity. Visual deficit can arise from iatrogenic injury, compression or ischemic insults. The specific predictors of