

between the two groups (all $p > 0.05$). There was no significant difference in the extent of resection between the groups ($p = 0.7442$). There was no significant difference in complications rates, reoperation rates, and death at 6 months (all $p > 0.05$). Estimated blood loss was significantly higher in the regular hours group ($p = 0.0278$). There was no significant difference in the total operative time ($p = 0.0643$) and length of stay ($p = 0.0601$). Conclusions: After-hours high grade glioma surgery is not associated with increased morbidity or mortality.

P.087

Factors affecting health-related quality of life among adult meningioma patients: a systematic review

K Jonas (Toronto) M Carpino (Toronto) M Ahn (Toronto)
M Cusimano (Toronto)*

doi: 10.1017/cjn.2024.192

Background: Meningiomas are common brain neoplasms that can significantly influence health-related quality of life (HRQOL), yet the factors influencing HRQOL in adult patients remain unclear. We aimed to bridge this knowledge gap by determining these key factors. **Methods:** We conducted a systematic review, searching EMBASE, MEDLINE, CINAHL, Scopus, and PsycINFO up to March 2023. We included original, peer-reviewed studies focusing on adult patients (>18 years) with current or past meningioma at any stage of treatment that measured HRQOL or its proxies in relation to tumour-, treatment-, and patient-related factors. Two independent reviewers screened abstracts and full texts, selecting studies with acceptable risk of bias for data extraction and narrative synthesis. **Results:** Of N=2942 identified studies, N=30 were included. Key factors found to influence HRQOL in adult meningioma patients include surgery, radiotherapy, neurological function, functional status, comorbidities, sleep quality, psychological impairment, age, and employment. Factors related to tumour characteristics yielded inconsistent findings. Heterogeneity and inconsistencies in HRQOL measurement across studies hindered definitive conclusions about the impact of factors on HRQOL. **Conclusions:** Our review emphasizes the need for standardized, disease-specific HRQOL assessments in meningioma patients. More consistent, large-scale, prospective research is essential to comprehensively understand and improve HRQOL, and thereby ensure tailored care for this population.

P.088

Wounded glioma syndrome: neurologic worsening in patients with subtotal resection in high-grade gliomas

C Ma (Vancouver) M Rizzuto (Vancouver) D Chen (Vancouver)
M Fatehi Hassanabad (Vancouver) S Makarenko (Vancouver)*

doi: 10.1017/cjn.2024.193

Background: For treatment of high-grade gliomas (HGGs), subtotal resection (STR) may be preferred to minimize injury to eloquent areas. We aimed to characterize neurologic deficits developed in STR patients within the first month post-operatively and to establish a potential threshold for a safe volume of residual tumor to avoid neurological worsening. **Methods:** This is a single

institution retrospective chart review, with 146 charts reviewed and 78 patients deemed eligible. Preoperative deficits and post-operative neurological deficits presenting prior to 1 month after surgery were captured. Imaging features such as tumour volume, edema, and other pertinent imaging characteristics were collected from preoperative and postoperative imaging. **Results:** Most patients that developed a postoperative deficit presented with motor deficits (55.1%), while only 1.3% of patients developed new or worsening tremor after surgery. On average, in patients with a new deficit, 26.5% of tumor was resected, and all patients had more than 19% of residual tumor. **Conclusions:** Postoperative neurologic deficits may develop after a subtotal resection when an average of 73.5% of tumor remains. The proposed threshold for tumor resection is greater than 26.5% to minimize the potential of neurologic worsening 1 month postoperatively.

P.089

Volumetric extent of resection and visual outcomes in pituitary adenoma patients presenting with visual compromise undergoing the endoscopic endonasal approach

JG Pascual (Manila) D Ben-Israel (Calgary) M de Lotbiniere-Bassett (Calgary) F Costello (Calgary) JM Clark (Calgary) YP Starreveld (Calgary)*

doi: 10.1017/cjn.2024.194

Background: Reporting extent of resection (EOR) in pituitary adenoma (PA) surgery via endoscopic endonasal approaches (EEA) is not standardized. The use of 3-dimensional volumetric analysis is proposed for measurement of tumor volumes and EOR. Their relationship with visual outcomes is explored. **Methods:** A retrospective analysis of PA patients presenting with visual disturbances and treated surgically via EEA by a single surgeon between 2006 and 2021. The main outcome was visual function at 12 months post-operatively. **Results:** 142 patients were included. Majority were male, with mean age of 57.1 years. Most (58.2%) presented with bitemporal hemianopsia. The mean tumor size was 11.3 cm³. The mean EOR was 84.5% (range 21.5-99.8%), with a mean post-operative tumor volume of 1.9 cm³. Visual function improved in 92.2%. Re-resection for visual deterioration was performed in 5.7% of patients, (mean time 2.4 years). No clinical, pathologic, or imaging factors were significantly associated with visual outcome. A significant association was found between EOR and re-resection (mean EOR 66.7% vs 85.6%, $p = 0.002$). **Conclusions:** For patients with PA presenting with visual deficits, treatment with EEA led to improvement in visual function in the majority of patients, without the need for gross total resection. EOR was significantly associated with the need for re-resection.

P.090

Third ventricular pituitary: case report and review of the literature

S Hart (Hamilton) K Reddy (Hamilton)*

doi: 10.1017/cjn.2024.195

Background: Pituitary is a rare, low grade tumour typically of the sellar region. Here we present a pituitary located in the

third ventricle. Methods: 56 year old female presented with amenorrhea, hyperprolactinemia, and progressive bitemporal hemianopsia. MRI revealed a suprasellar mass located within the third ventricle and appearing separate from the pituitary. A supraciliary and translamina terminalis surgical approach to tumour resection was completed without complication. Post-operatively, she developed transient DI which resolved by post-operative day 3 and she was discharged home without any neurological deficits. Pathology revealed pituitaryoma, WHO grade I. Results: Pituitaryomas are rare tumours arising from neuroepithelial cells of the pituitary. The majority of cases are pure sellar or sellar with suprasellar extension, or at least have some connection to the pituitary. In many cases, imaging findings are synonymous to pituitary adenomas. We present a unique case in which the tumour was suprasellar but appeared separate from the pituitary. Surgical intervention is the most highly predictive factor of recurrence, as gross total resection can be curable. Conclusions: Here we present a unique location of pituitaryoma. Due to the exceedingly rare nature of pituitaryoma, unique presentations and management help to provide better understanding of the breadth of this disease presentation.

P.091

Synthetic data reliably reproduces brain tumor primary research data

R Khalaf (Montreal) W Davalan (Montreal)* A Mohammad (Montreal) RJ Diaz (Montreal)*

doi: 10.1017/cjn.2024.196

Background: Synthetic data has garnered heightened attention in contemporary research due to confidentiality barriers and its capacity to simulate variables challenging to obtain. This study aimed to evaluate the reliability and validity of synthetic data in the context of neuro-oncology research, comparing findings from two published studies with results from synthetic datasets. Methods: Two published neuro-oncology studies focusing on prognostic factors such as serum albumin and systemic inflammation scores were selected, and their methodologies were replicated using *MDClone* Platform to generate five synthetic datasets for each. We used Chi-Square test to assess inter-variability between synthetic datasets. Survival outcomes were evaluated using Kaplan-Meier and t-test was used to determine statistical significance. Results: Findings from synthetic data consistently matched outcomes from both original articles, with serum albumin and systemic inflammation scores correlating with survival prognosis in glioblastoma and metastasis patients ($p < 0.05$). Reported findings, demographic trends and survival outcomes showed significant similarity ($P > 0.05$) with synthetic datasets. Conclusions: Synthetic data consistently reproduced the statistical attributes of real patient data. Integrating synthetic data into clinical research offers excellent potential for providing accurate predictive insights without compromising patient privacy. In neuro-oncology, where patient follow-up pose challenges, the adoption of synthetic datasets can be transformative.

P.092

Incidence of tissue-sampled brain metastases pre- and post-COVID-19 in Newfoundland and Labrador: an eight-year review

A Kazerouni (St. John's) LA Boone (St. John's) T Noble (St. John's) J Barron (St. John's) R Avery (St. John's)*

doi: 10.1017/cjn.2024.197

Background: Brain metastases indicate an advanced tumour stage for many cancers. We sought to investigate the incidence change of tissue-sampled brain metastases and its relation to staging challenges during the COVID-19 pandemic in Newfoundland and Labrador. Methods: We reviewed all brain metastasis cases from 2015-2022 requiring first-time tissue sampling according to pathology reports from the St. John's Health Sciences Centre. Incidence rates were calculated using yearly population data by regional health authorities and standardized using the 2011 Canadian standard population. Results: We included 173 cases. The average annual age-standardized incidence rate of brain metastases requiring tissue sampling per 100,000 increased from 2.5 (95% CI: 2.0-3.1) pre-COVID-19 to 4.1 (95% CI: 3.3-5.0) post-COVID-19. Brain metastases from lung primaries accounted for 69% of this increase. While incidence declined to near-baseline in the Eastern provincial population by 2022 (3.3; 95% CI: 1.5-5.1), incidence rose into 2022 in the Western population (8.6; 95% CI: 3.9-13.2). Conclusions: These data suggest a delayed presentation of malignancies during the COVID-19 pandemic and underscore the importance of prioritized staging during times of strain on healthcare systems. Regional, temporal trends suggest regions distant from tertiary care centres could face challenges in resolving cases with delayed presentation post-COVID-19.

P.093

BMI as a predictor of recurrence in high-grade meningioma: A single center retrospective cohort study

P Toyota (Saskatoon) AR Persad (Palo Alto) E Liu (Saskatoon) J Saini (Toronto) V Zhrebetskiy (Saskatoon) R Auer (Saskatoon) L Hnenny (Saskatoon)*

doi: 10.1017/cjn.2024.198

Background: Elevated BMI has been proposed as a risk factor for the development of meningioma. The relationship between body mass index (BMI) and disease control in high-grade meningioma has not yet been examined. A retrospective cohort study was performed to assess the relationship between high-grade meningioma recurrence and BMI. Methods: This is a retrospective cohort study of patients with Grade 2 or Grade 3 meningioma at a single tertiary care center between 2008 and 2017. We collected clinical data including age, sex, BMI, location, Simpson grade, brain invasion, and radiation treatments. Disease control was monitored on followup MRI scans.