

surgery, non-operative admission, additional investigations recommended, opinion without further investigations, unnecessary consult). Results: There were 1916 consultations reviewed, with 52% of calls (n=991) originating outside of our hospital, and 72% (n=1387) coming from an emergency department. Cranial cases made up 64% (n=1230) of consults, while the remaining 36% (n=688) were spine cases. The mean patient age was 60.1±0.4 years. In multinomial logistic regression analysis, age, geographical distance of consulting site, and consult specific variables (neurosurgical subspecialty, inside vs. outside call, emergency department vs. inpatient ward or private office) were associated with consult disposition ($p < 0.001$). Conclusions: This study provides a descriptive analysis of neurosurgical consultations in Nova Scotia. Results from this study may be used to address inefficiencies in the neurosurgical consultation process, including targeted education for consulting physicians.

P.138

Burnout in Canadian neurosurgery

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Background: Burnout is common among health care professionals and can lead to depression and poor patient outcomes. The prevalence of burnout among Canadian neurosurgeons and trainees is yet unknown. Methods: International survey of neurosurgeons and trainees Results: Of total 403 responses, 47 were Canadian respondents (80.9% were male and 14.9% were female). Rate of burnout among Canadian neurosurgeons and trainees was 42.6%; however, there was no significant difference between rate of burnout between Canadian respondents and non-Canadian respondents (35.3%), $p=0.33$. Rate of burnout among Canadian neurosurgeons and resident/fellow was 40 and 47.1%, respectively, $p=0.64$. Subgroup analysis showed no difference in rate of burnout between Canadian and non-Canadian practicing neurosurgeons ($p=0.34$) and Canadian and non-Canadian resident/fellow ($p=0.76$). Canadian neurosurgeons with work experience of 5-10 years are more likely to have burnout compared to neurosurgeons with more or less work experience (OR 17, 95%CI 1.43-826.22, $p=0.005$). There was a trend that female Canadian respondents had more burnout than male counterparts (OR 4.2, 95%CI 0.57-47.45, $p=0.09$). Conclusions: Burnout is not uncommon among Canadian neurosurgeons/trainees. Monitor and supports should be provide to those who are at risk to mitigate burnout and provide resilience.

P.139

The use of tranexamic acid in craniotomy: a Canadian survey and literature review

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Background: There is growing evidence supporting the intraoperative use of an antifibrinolytic agent, tranexamic acid (TXA) to limit blood loss; however, use of TXA has not been widely adopted in cranial procedures. We aimed to determine the practice pattern regarding the use of TXA in craniotomy in Canada, and review the

literature. Methods: A survey was conducted among the Canadian centres on TXA use during elective craniotomy. Online databases were searched for randomized controlled trials reporting the use of TXA in craniotomy for tumors. The results included the estimated blood loss and the dose used. Results: TXA was not routinely used in elective craniotomy but used selectively in 6 of 15 centres based on risk, intraoperative bleeding, or surgeon preference. The dose was 1 g with or without infusion. 6 studies were identified through literature search. The dose varied between 10–20 mg/kg bolus and 1 mg/kg/hr infusion, or a 2 g bolus alone. All studies reported a significant reduction in blood loss with TXA. Conclusions: We found widely divergent indications for intraoperative TXA use in elective craniotomy throughout Canada. This is in keeping with limited evidence in the literature. Further studies are needed to inform the decision regarding TXA use.

P.140

The clinical outcomes of patients with normal pressure hydrocephalus and fecal incontinence

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Background: Normal Pressure Hydrocephalus (NPH) is characterized by the clinical triad of dementia, gait disturbance, and urinary incontinence. An initial case series by Hakim and Adams highlighted that all patients exhibited this triad, with only one presenting with fecal incontinence. This study aims to examine the outcomes of individuals experiencing fecal incontinence who have undergone ventriculoperitoneal shunting (VPS). Methods: A systematic review and surgical case series was conducted, involving consecutive adults diagnosed with NPH and treated with VPS between September 2016 and September 2022. Results: In the cohort of 85 patients, the median duration of NPH symptoms was 3.2 years. Gait and balance symptoms were prevalent in all patients, while cognitive, bladder, and bowel symptoms were observed in 85.9%, 91.8%, and 23.5% of cases. No significant differences were noted in age, sex, neurologic diseases presence, or lower gastrointestinal or pelvic pathology. The prevalence of fecal incontinence pre-surgery, within less than 3 months, and 3 months post-surgery were 23.5%, 32.9%, and 17.6%. The systematic review search yielded 515 articles, and 18 included patients with fecal incontinence. Conclusions: The insights gained from the systematic review and cohort offer a comprehensive understanding of the outcomes observed in patients with NPH and fecal incontinence following VPS.

P.141

Endoscopic transorbital approach to the skull base: a single centre experience

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Background: Minimally invasive endoscopic techniques via the transorbital approach (ETOA) have emerged as a promising

alternative for addressing skull base tumours. This study aims to showcase our institution's extensive experience with ETOA, detailing the surgical technique employed and presenting comprehensive patient outcomes. **Methods:** A retrospective analysis was conducted on data from patients who underwent ETOA within the past five years. **Results:** Over the study period, 24 ETOA procedures were performed on 21 patients, with an average age of 48.92, 13 of whom were women. The superior orbital corridor was utilized in 95.83% of cases, and in 79.17%, ETOA was complemented by a transnasal approach. Sphenoidal meningioma accounted for the most common surgical indication (33.33%, n=8), all resulting in vision improvement, followed by lateral frontal sinus mucocele (25%, n=6). The median length of stay was one day, and ETOA achieved the procedure goal in 19 patients. Transient V1 numbness was the primary complication (29.17%, n=7), and 20.83% (n=5) necessitated another surgery. Notably, no mortality was associated with this procedure. **Conclusions:** Our institution's experience underscores the notable safety and efficacy potential of ETOA, with 19 out of 21 patients exhibiting positive outcomes, obviating the need for revision surgery in most cases.

P.142

The use of intraoperative magnetic resonance imaging for endoscopic transnasal transsphenoid surgery in children

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Background: Sellar and suprasellar pediatric lesions are uncommon. Endoscopic transnasal transsphenoidal surgery (ETTS) is the preferred treatment, but early post-op MRI is hindered by sphenoidal packing. This study aims to assess iMRI safety and efficacy in pediatric ETTS cases. **Methods:** We performed a retrospective review from Jan 01, 2015 to Dec 31, 2022, evaluating use of iMRI. We determined if the goals of the surgery (biopsy, cyst decompression, subtotal resection, gross total resection) were met, and iMRI's influence on surgery outcomes. We examined patient age, surgery duration, length of stay, histopathology results, surgical complications, post-op MRIs within 1 month, and tumor progression/recurrence. **Results:** Over eight years, 20 pediatric ETTS procedures, 14 with iMRI, were conducted. Achieving goals in 13 cases, iMRI prompted extra surgery once. Two adenomas progressed, requiring a second surgery, and craniopharyngioma cases had complications, needing further interventions. Hospital stays varied (1-9 days), with a mean surgery duration of 6 hours and 47 minutes. The study underscores iMRI's potential impact, stressing the necessity for more research in pediatric transsphenoidal surgeries. **Conclusions:** While intraoperative MRI in pediatric transsphenoidal surgeries may aid goal verification, this small study doesn't conclusively demonstrate improved

outcomes. Complication rates align with non-IMRI procedures, highlighting the need for further research.

SPINE AND PERIPHERAL NERVE SURGERY

P.143

Safety of same-day discharge following incidental durotomy in tubular microdiscectomy: a retrospective cohort study

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Background: Cerebrospinal fluid (CSF) leak is a common complication of minimally invasive tubular microdiscectomy (MIM). However, it is not known whether patients with CSF leak can be safely discharged home the same day. **Methods:** This is a retrospective cohort study of patients with incidental durotomy after MIM from January, 2009 to August, 2023. Patient demographic information, surgery information, CSF leak management, and postoperative outcomes were recorded. **Results:** There were 16 patients (53%) who were admitted to hospital and 14 (47%) patients discharged home the same day post CSF leak. There were no differences in patient demographics between the two groups at baseline. Twenty-nine out of 30 (97%) of the patients had onlay duraplasty, and one (3%) patient was repaired using sutures. The hospitalized group was kept on bed rest overnight or 24 hours. The discharge group was kept on best rest for 2 hours or mobilized immediately after surgery. The average length of admission for the hospitalized group was 2.4 ± 4.0 days. No patients in either group required readmission or revision surgery for CSF leak. **Conclusions:** Patients with CSF leak post minimally invasive tubular microdiscectomy can be safely discharged home the same day provided that duraplasty or primary repair was performed intraoperatively.

P.144

Comparative analysis of spinal cord-derived and induced pluripotent-derived neural stem & progenitor cells for SCI therapy

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Background: Induced pluripotent stem cells (iPSCs) have revolutionized spinal cord injury (SCI) treatment by generating neural stem/progenitor cells (NSPCs). However, understanding how iPSC-derived NSPCs compare to authentic spinal cord NSPCs remains unclear. This study thoroughly characterizes