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. Sphenoorbital 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.

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

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doi: 10.1017/cjn.2024.243

Background: Sellar and suprasellar pediatric lesions are uncommon. Endoscopic transnasal transphenoidal 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.

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

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doi: 10.1017/cjn.2024.244

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.

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

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doi: 10.1017/cjn.2024.245

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

bona fide spinal cord NSPCs and their isogenic iPSC-derived counterparts, iPSC-SC and iPSC-Br. Methods: Human spinal cord and skin tissue were obtained with ethics approval to establish primary NSPC cultures. iPSCs were derived from these primary cells and differentiated into iPSC-SC and iPSC-Br NSPCs. Assessments encompassed differentiation, proliferation capabilities, immunostaining, and RNA sequencing for differential gene expression. Results: Functional and transcriptional differences were identified between bona fide NSPCs and iPSC-SC/iPSC-Br. Bona fide and iPSC-SC NSPCs exhibited spinal cord regionalization, while iPSC-Br displayed forebrain regionalization. iPSC-derived NSPCs shared features reminiscent of early developmental stages, including embryonic patterning genes and increased proliferation rates. Notably, differentiation profiles were most similar between bona fide and iPSC-Br, with substantial distinctions observed between bona fide and iPSC-SC. Conclusions: This study unveils unique regional, developmental, and functional characteristics distinguishing spinal cord NSPCs from iPSC-derived counterparts. Addressing these disparities holds promise for enhancing iPSC-derived NSPC therapies in spinal cord injuries, contributing to a deeper understanding of their potential applications in regenerative medicine.

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The growing problem of spine surgery wait times in British Columbia: longitudinal trends and impacts on perioperative outcomes

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doi: 10.1017/cjn.2024.246

Background: Surgical delays are in common in Canada. Wait times in elective spine surgery and their impact on outcomes remain uncharacterized. Methods: This was a single-center analysis of elective spine surgery data between 2009-2020. Wait times between referral and consultation (T1), consultation and surgical booking (Ti), and booking and surgery (T2) were assessed. Results: 2041 patients were included. Longitudinal analyses were adjusted for age, sex, diagnosis, surgical volume, while outcomes analyses were age and sex-adjusted. Total T1+Ti +T2 increased 8.1% annually ($p<0.001$). T1 decreased 4.3% annually ($p=0.032$). It was not associated with adverse events (AEs) or disposition. Every 100 days of T1 was associated with 1.0% longer hospitalization ($p=0.001$). Ti increased 21.0% annually ($p<0.001$). Every 100 days of Ti was associated with 2.9% increased odds of an adverse event ($p=0.002$), 1.8% longer hospitalization ($p<0.001$), and 15.9% increased likelihood of discharge home ($p<0.001$). T2 increased 7.0% annually ($p<0.001$) and was not associated with AEs. Every 100 days of T2 was associated with 11.6% longer hospitalization ($p<0.001$) and 76.5% increased likelihood of discharge home ($p<0.001$). Conclusions: Total wait times for elective spine surgery have increased between 2009-2020. Notably, Ti increased ninefold and was associated with AEs. This study highlights areas of delay and targets for healthcare optimization.

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Consult and kyphoplasty delay impacts on geriatric vertebral compression fracture outcomes

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doi: 10.1017/cjn.2024.247

Background: Vertebral compression fractures (VCF) lead to both considerable morbidity and increased mortality. Kyphoplasty, a minimally invasive surgery, treats VCFs providing significant pain relief, preserving vertebral height, and reducing spinal deformity. Methods: A retrospective cohort study at Hamilton Health Sciences (HHS) was conducted on elderly patients (60 years or older) who underwent kyphoplasty at between 2012 and 2022. The patients had prior hospital admissions under non-spine-related specialties at HHS within two years before their surgery. Primary outcomes were the progression of vertebral height loss and focal kyphotic deformity. Results: The study included 119 patients (52.1% female, mean age 70.71 years). A significant increase in vertebral height loss was observed from diagnosis to pre-kyphoplasty (0.32% change, $p < 0.0001$) and from diagnosis to post-kyphoplasty (0.24% change, $p = 0.015$). However, there were no significant correlations between delay times and changes in vertebral height or focal kyphotic deformity. Conclusions: Delays in neurosurgical consultation and kyphoplasty did not significantly affect radiographic outcomes in elderly patients with VCF despite the progression of vertebral height loss. This suggests that while timely patient care is essential, delayed treatment may not adversely affect key radiographic metrics in elderly VCF patients.

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Saskatchewan spine pathway classification is associated with post-operative outcome and improved quality-adjusted life years following lumbosacral fusion

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doi: 10.1017/cjn.2024.248

Background: Low back pain (LBP) is a common cause of disability and decreased quality of life. The Saskatchewan Spine Pathway classification (SSPc) is a method for triaging patients who are candidates for surgery. Methods: Consecutive patients who underwent lumbosacral instrumented fusion for degenerative spinal pathology from Jan 1, 2012, to Sept 20, 2018, by a single surgeon at our institution were retrospectively reviewed. Patients were stratified by SSPc into 4 groups based on pain pattern. Demographic and clinical data were collected. Outcomes were compared between cohorts both for absolute values and achieving MCID. Results: 169 consecutive patients were included in our study. After stratifying by SSPc grouping, there were 61 SSPc I patients, 45 SSPc III patients, and 63 SSPc IV patients. Patients in all groups had clinical improvement following surgery. Patients classified as SSPc III had superior outcomes in ODI, EQ-5D and EQ-VAS, and were more likely to achieve the