

($p=0.021$) compared to controls. Parent comfort with the procedure increased after viewing the video ($p = 0.002$). Variability of answers was reduced in the video group ($p = 0.03$). Parents' top three concerns were pain, infection, and neurologic injury. **Conclusions:** Pediatric lumbar puncture consent can be significantly improved with a short educational video to address the parental concerns and standardize consent.

CHAIR'S SELECT ABSTRACTS - NEUROSURGERY AND NEUROIMAGING

C.01

Neck and arm pain after surgery for cervical myelopathy: outcomes and predictors of improvement

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Background: Cervical spondylotic myelopathy (CSM) may present with neck and arm pain. This study investigates the change in neck/arm pain post-operatively in CSM. **Methods:** This ambispective study llocated 402 patients through the Canadian Spine Outcomes and Research Network. Outcome measures were the visual analogue scales for neck and arm pain (VAS-NP and VAS-AP) and the neck disability index (NDI). The thresholds for minimum clinically important differences (MCIDs) for VAS-NP and VAS-AP were determined to be 2.6 and 4.1. **Results:** VAS-NP improved from mean of 5.6 ± 2.9 to 3.8 ± 2.7 at 12 months ($P<0.001$). VAS-AP improved from 5.8 ± 2.9 to 3.5 ± 3.0 at 12 months ($P<0.001$). The MCIDs for VAS-NP and VAS-AP were also reached at 12 months. Based on the NDI, patients were grouped into those with mild pain/no pain (33%) versus moderate/severe pain (67%). At 3 months, a significantly high proportion of patients with moderate/severe pain (45.8%) demonstrated an improvement into mild/no pain, whereas 27.2% with mild/no pain demonstrated worsening into moderate/severe pain ($P < 0.001$). At 12 months, 17.4% with mild/no pain experienced worsening of their NDI ($P<0.001$). **Conclusions:** This study suggests that neck and arm pain responds to surgical decompression in patients with CSM and reaches the MCIDs for VAS-AP and VAS-NP at 12 months.

C.03

Deformation-based morphometry analysis of longitudinal low-grade glioma growth

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Background: Diffuse low-grade gliomas (LGGs) are primary brain tumours with infiltrative, anisotropic growth related to surrounding white and grey matter structures. Deformation-based morphometry (DBM) is a simple and objective image analysis method that can identify areas of local volume change over time.

In this study, we illustrate the use of DBM to study the local expansion patterns of LGGs monitored by serial magnetic resonance imaging (MRI). **Methods:** We developed an image processing pipeline optimized for the study of LGG growth involving the fusion of follow-up MRIs for a given patient into an average template space using nonlinear registration. The displacement maps derived from nonlinear registration were converted to Jacobian maps, which estimate local tissue expansion and contraction over time. **Results:** Our results demonstrate that neoplastic growth occurs primarily around the edges of the tumour while the lesion core and areas adjacent to obstacles, such as the skull, show no significant expansion. Regions of normal brain tissue surrounding the lesion show slight contraction over time, representing compression due to mass effect of the tumour. **Conclusions:** DBM is a useful tool to understand the long-term clinical course of individual tumours and identify areas of rapid growth, which may explain the current presentation and/or predict future symptoms.

C.04

Comparison of clinical outcomes between posterior instrumented fusion with and without interbody fusion for isthmic spondylolisthesis

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Background: The purpose of this study is to compare 1-year postoperative clinical outcomes between posterior instrumented fusion with (P/TLIF) and without (PLF) interbody fusion in patients with isthmic spondylolisthesis. **Methods:** This is a multi-centre retrospective study using the Canadian Spine Outcomes and Research Network. Adult patients who received surgical management for isthmic spondylolisthesis were included in this study. The primary outcome was change in Oswestry Disability Index at 1-year. Secondary outcomes were change in EQ-5D, SF-12 PCS, back pain, leg pain, estimated blood loss, length of surgery, length of stay, rate of transfusions and adverse events. Descriptive statistics, Student t-test, Chi-Squared test, and stepwise multivariable regression were used for analysis. **Results:** A total of 300 patients (252 P/TLIF, 48 PLF) were included in this study. The mean age was 50 years. The P/TLIF group had poorer baseline leg pain scores ($t=2.02$, $p=0.01$). There were no significant differences in primary and secondary outcomes between the two groups. Addition of interbody fusion was not a significant variable in the stepwise multivariable regression analysis. **Conclusions:** There were no significant differences in clinical outcomes at 1 year. Addition of interbody fusion was not associated with higher complication rates or length of stay.