

**P.111****Peripheral hypersensitivity to subthreshold stimuli persists after resolution of acute experimental disc-herniation neuropathy***MF Shamji (Toronto)\* Y Tu (Toronto) MW Salter (Toronto)*

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**Objective:** While acute disc-herniation radiculopathy frequently resolves without clinical sequelae, some patients experience long-term sensory or motor dysfunction. This study examined chronic sensitivity of the rodent hindpaw after resolution of an acute inflammatory neuropathy. **Methods:** C57BL/6 mice underwent mid-thigh sciatic nerve exposure, with sham animals exposed and experimental animals injured by placement of littermate tail nucleus pulposus (NP). Animals were evaluated for mechanical allodynia (Von Frey), thermal sensitivity (heat withdrawal and acetone latency), and gait stability (RotaRod), until the acute nociceptive phenotype resolved. Thereafter, animals were injected with intraplantar subthreshold capsaicin or vehicle followed by the same testing. At sacrifice, sciatic nerves were assessed for macrophage infiltration by immunohistochemistry, and dorsal root ganglion (DRG) explants were assessed for capsaicin sensitivity using cobalt staining. **Results:** NP-treated animals were allodynic after subthreshold capsaicin delivery compared with sham-operated controls and NP-treated animals delivered vehicle only. Early intraneural macrophage infiltration at one week dissipated by this three week timepoint. DRGs derived from NP-treated animals exhibited greater cobalt staining upon capsaicin exposure compared with shams. **Conclusion:** Non-compressive disc herniation creates long-term sensitization in the sciatic nerve distribution. This persists despite resolution of acute intraneural macrophage migration, and the demonstrated role of TRPV1 provides insight into the transformation of acute inflammatory pain into chronic neuropathic pain.

**P.112****Obesity and lumbar fusion: increased risk of blood loss***GA Jewett (Calgary)\* D Yavin (Calgary) IS Sahota (Calgary) P Dhaliwal (Gainesville) S Du Plessis (Calgary)*

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**Background:** Several studies have demonstrated that obese patients are at increased risk of perioperative complication during lumbar spine surgery. Herein we quantify the association between blood loss and obesity during lumbar fusion. **Methods:** Outcomes were collected in the setting of a single center randomized control trial conducted among patients undergoing elective lumbar fusion. A univariate analysis of potential risk factors (gender, age, body mass index [BMI], number of levels fused, previous use of anticoagulants, and previous use of non-steroidal anti-inflammatories) for operative blood loss was performed. Logistic regression was conducted to estimate adjusted odds ratios (ORs) and 95% confidence intervals. **Results:** Among 85 patients, the mean estimated blood loss (EBL) was 563 ml, 47.1% were male, and the median number of levels fused was one. Obesity (BMI  $\geq$  30kg/m<sup>2</sup>) was a significant risk (OR 2.46, P=0.025) for increased blood loss (EBL > 500 ml). Number of levels fused was similarly associated with EBL (P<0.01) while gender confounded the association between obesity and EBL. **Conclusions:** Surgeons should anticipate greater blood loss when performing lumbar

fusion in obese patients. To reduce operative morbidity, consideration should be given to preoperative weight loss whenever possible.

**P.113****Evaluation of fusion in a PEEK cage after anterior cervical discectomy and fusion***M Voisin (Kingston)\* F Saunders (Kingston) D Yen (Kingston) P Fenton (Kingston)*

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Anterior Cervical Discectomy and Fusion (ACDF) is the gold standard treatment for cervical spondylosis but there is a lack of consensus in the literature regarding which type of bone graft is superior: autograft or allograft. The purpose of this study is to evaluate fusion after ACDF using a stand-alone intervertebral cage packed with autologous cervical bone shavings acquired during the procedure. Twenty patients that underwent single-level ACDF from 2011 to 2014 using a stand-alone polyetheretherketone (PEEK) cage were recruited. Patients were evaluated for evidence of bone fusion by plain films and CT scan. Fusion was primarily assessed by grading the level of trabecular bridging bone across the bone-graft interface. Odom's criteria were used to assess clinical outcome. All interbody disc spaces achieved successful fusion at follow-up. A total of 80% (16/20) of patients had radiographic evidence of trabecular bone present both within and around the cage. The other 20% exhibited bridging bone within the cage but had evidence of minor radiolucent gaps and lack of bridging bone completely surrounding the cage. Eighty percent of patients reported excellent/good clinical outcomes. ACDF using a PEEK stand-alone cage with autograft bone shavings has a high rate of fusion and avoids potential complications of classic autograft harvesting and decreased allograft fusion rates.

**P.114****Intrathecal morphine in lumbar spine surgery: a novel injection technique***GA Jewett (Calgary)\* D Yavin (Calgary) P Dhaliwal (Gainesville) T Whittaker (Calgary) J Krupa (Calgary) S Du Plessis (Calgary)*

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**Background:** Intrathecal morphine (ITM) is an efficacious method of providing post-operative analgesia. Despite adoption in many surgical fields, ITM has yet to become a standard of care in lumbar spine surgery. This may in part be attributed to concerns over precipitating a cerebrospinal fluid (CSF) leak following dural puncture. **Methods:** The dural sac is penetrated obliquely at a 30° angle to prevent overlap of dural and arachnoid puncture sites. Oblique injection in instances of limited dural exposure is made possible by introducing a 60° bend to a standard 30-gauge needle. Participating spinal surgeons were provided with brief instructions outlining the injection technique. Adherence and complications were collected prospectively. **Results:** The technique was applied to 98 cases of elective lumbar fusion at our institution. Two cases (2.0%) of non-adherence followed pre-injection dural tear. 96 cases of oblique ITM injection resulted in no attributable instances of post-operative CSF leakage. Two cases (2.1%) of transient, self-limited CSF leakage immediately following ITM injection were observed without associated sequelae or requirement for further intervention. **Conclusions:** Oblique dural puncture is not associated with increased incidence