

## MULTIDISCIPLINARY

and CSF rheumatological, autoimmune and infectious investigations were noncontributory. Serum ACE levels were at first within normal limits. Steroid treatment stabilized symptoms and perhaps coincidentally, separate rituximab treatments were followed within days by vertigo (with a new pontine lesion) or a respiratory decompensation. A wedge lung biopsy revealed granulomatosis. Current treatment consists of mycophenolate, methotrexate with a prednisone wean. *Conclusions:* This case report reinforces the varied manifestations and mimics of sarcoidosis (including CLIPPERS) and highlights the need for a high index of suspicion despite apparently negative investigations.

## NEUROMUSCULAR

## P.007

**Onset of facial weakness correlated with muscle strength in infantile facioscapulohumeral dystrophy (FSHD)**

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*Background:* We investigated motor function associations with age, gender, and D4Z4 fragment size among participants with infantile FSHD. *Methods:* We collected standardized motor assessments including goniometry, manual muscle testing (MMT), quantitative muscle testing (QMT), and FSHD clinical severity scores (CSS) at 12 CINRG sites. To measure associations, we used linear regression models adjusted for age at enrollment, onset of weakness, gender, and D4Z4 repeats. *Results:* 53 participants (59% female, mean age 23.1±14.6 years) were enrolled. Weakness was most pronounced at the shoulder girdle and rectus abdominis (median MMT 30-38% of normal). Older enrollment age was associated with greater CSS ( $p=0.005$ ) and reduced range of motion in shoulder abduction, shoulder flexion, elbow flexion, and ankle dorsiflexion (all  $p<0.01$ ). Females and participants with larger D4Z4 repeats had milder shoulder/arm weakness and lesser disease severity (all  $p<0.05$ ). Increased age at onset of facial weakness was significantly associated with greater total muscle strength, as measured by QMT and MMT (both  $p=0.002$ ). *Conclusions:* We confirm the descending pattern of muscle involvement and milder disease severity in females or those with larger D4Z4 repeats. Furthermore, earlier age at onset of facial weakness was associated with greater muscle weakness. Future longitudinal assessments will describe rates of disease progression in this population.

## P.009

**Physician assisted death and the neurosurgeon**

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*Background:* The Supreme Court of Canada (SCC) recently rendered a decision striking down the Criminal Code absolute prohibition on providing assisted dying. End of life decisions are commonly encountered by neurosurgeons due to the nature of their practice. Neurosurgeons will be faced with patients requesting PAD in the near future. *Methods:* The recent SCC ruling heralds a change that will radically alter a most basic tenet that has historically guided physicians and surgeons. A subcommittee of the Canadian Neurosurgical Society (CNSS) was formed to generate a position statement to reflect the interests of both neurosurgeons and their patients. *Results:* Fundamental issues regarding the implementation of PAD identified include:

- Clarity of legislation
- The creation of an independent, third party referral service
- Effective safeguards and oversight of the entire process
- The right to “conscientious objection” on the part of physicians who do not wish to be involved in PAD

*Conclusions:* The CNSS urges clarity in legislation regarding PAD and strict oversight in its implementation to reduce potential harm. We also support the creation of an independent, third party referral service which would serve to respect the conscience of those health care providers who do not wish to actively participate in PAD.

## P.010

**The Canadian Neurosurgery Research Collaborative (CNRC): A novel, trainee-led, nationwide multicentre research network**

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*Background:* The goals of evidence-based neurosurgery are to improve surgical outcomes, reduce complications, and provide an objective basis for altering practice. The need for higher quality studies, typically prospective and multicentre, has been growing especially in light of the evolving complexity of neurosurgical interventions and heterogeneity of patient populations. In the United Kingdom (UK), trainee-led research collaboratives have been established to tackle this problem. Therefore, we sought to evaluate the potential role for a resident-led research collaborative in neurosurgery in Canada based on the UK experience. *Methods:* A literature review of trainee-led collaboratives was conducted utilizing PubMed and Medline. Identified articles were reviewed for study quality and clinical relevance to explore the potential benefits of collaboratives. *Results:* In the

UK, 27 collaboratives have been established in various specialties by trainees. Some published high quality trials with implications on their clinical fields. Evidence suggests that such endeavors improves trainees' research skills and may help cultivate a research culture tailored towards clinical trials. *Conclusions:* Given the growing evidence for research collaboratives in the UK, we propose launching the Canadian Neurosurgery Research Collaborative (CNRC) which currently represents 12 out of 14 neurosurgery programs in Canada, and planning its first multicenter prospective study.

## P.011

### Evaluation of educational needs in neurology in the province of Quebec: a survey-based study

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*Background:* In contrast with 56% of US medical schools, most Canadian medical schools do not offer a required clerkship neurology rotation. This study aims to assess the need for additional clinical neurology training in Quebec medical schools. *Methods:* Third and fourth year medical students from the province of Quebec completed surveys inquiring about accumulated theoretical teaching time, clinical neurology exposure, self-reported neurological examination proficiency and interest in additional training. *Results:* 66 students answered the survey. 43% were from Université de Montréal, 18% from McGill University, 14% from Université Laval and 24% from Université de Sherbrooke. For theoretical teaching, 44% reported at least 60 hours (h) of teaching, 44% reported 40 to 60h and 23% reported 10 to 40h. For clinical exposure, 24% reported at least 60h, 8% reported 40 to 60h, 40% reported 10 to 40h and 29% reported less than 10h. Most students reported being comfortable with their neurological examination skills (58%) but still 41% were uncertain or felt uncomfortable. 80% indicated interest in receiving additional clinical exposure. *Conclusions:* Amongst Quebec medical students, clinical neurology exposure is likely insufficient. An important proportion of students remain uncomfortable with the neurological examination and most students are interested in additional neurological training.

## P.012

### Spinal durotomy repair simulator for deliberate microsurgical practice: integration into a residency training module

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*Background:* Deliberate practice is one aspect of gaining competency in surgical skills. We have previously integrated a vascular microsurgery module into our residency training curriculum, and have recently described our experience with constructing patient-specific spine models for simulating lumbar spinal durotomy repair. The goal of this project is to develop the necessary infrastructure to facilitate practice on the spine model during residency. *Methods:* A 3D-printed plastic lumbar spine model was created from a patient computed tomography scan. L2 was manually laminectomized, and paraspinal tissues were simulated using Polyvinyl Chloride (PVC)

Plastisol. Harvested bovine pericardium was sewn into tubular form as a dural substitute. The pericardial tubes were tied at either end and attached to intravenous tubing to create a closed loop water system. *Results:* We are developing a video tutorial describing how to setup and use the model. Residents will be recorded while performing a 1.5 cm durotomy and repair using a surgical microscope available in our training laboratory (Drake-Hunterian Neurovascular Laboratory, London, Ontario, Canada). Residents are asked to grade the realism of the model using a questionnaire. Metrics of quality are to be determined. *Conclusions:* Our proposed model is a cost-effective, easy-to-prepare lumbar spinal simulator that facilitates microsurgical practice during neurosurgical residency.

## P.013

### Conflicts of interest in neurosurgical research - comparing voluntary physician disclosure to mandatory company data

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*Background:* Industry involvement in neurosurgical research is common, creating financial conflicts of interest (COIs). Most journals require voluntary disclosure of financial COIs. In 2013, the Sunshine Act (SA) was passed in the US, mandating industry disclosure of all payments to physicians. The accuracy of voluntary disclosure can now be determined by comparing voluntary author disclosure with industry data. *Methods:* We reviewed disclosure statements and calculated rates of voluntary disclosure in major neurosurgical journals before (2011) and after (2013) the Sunshine Act to determine if voluntary disclosure increased after its implementation. We then determined the accuracy of voluntary disclosure in 2013, comparing voluntary disclosure with industry disclosure on the Open Payments Database (OPD). Mean, median and range of industry payments to neurosurgeons were calculated. *Results:* Voluntary disclosure significantly increased in JNS-Spine only (10.7% to 35.4%,  $p < 0.001$ ) after implementation of the SA. The average rate of non-disclosure in all journals studied was 38.3% (Range 33.8%-42.2%)

\$32,598,522.97 of industry payments were provided to 656 authors in the five-month period studied (Average \$49,692.87/author). *Conclusions:* Voluntary COI disclosure in JNS- Spine increased after implementation of the Sunshine Act. Industry payments to physicians publishing in neurosurgery journals are common and rates of non-disclosure of COIs are high. The ethical implications of COIs and non-disclosure are discussed.

## P.014

### Cadaveric avian wing model complements live rat model in microsurgical simulation training for neurosurgical residents: technical aspects

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*Background:* Training of surgical residents based on the traditional Halstedian model is becoming increasingly scrutinized. The