

peripheral nervous systems (PNS). The quiz was pilot-tested and refined before distribution as an electronic survey to practicing neuroradiologists and fellows within newsletters from the American Society for Neuroradiology and Canadian Neurological Sciences Federation. **Results:** The quiz was begun by 45 neuroradiologists and completed in its entirety by 22. Most respondents were working at urban academic/teaching hospitals (81%) in the USA (42%). The majority (90%) report no clinical neurology rotation during their training. Respondents identified a high proportion (88%) of correct answers in questions about brainstem localizations. Fewer correct answers were selected in questions describing seizure semiology (44%) or flaccid weakness (59%). **Conclusions:** The small size of our study limits interpretation and generalizability of the findings. Identification of a potential gap in neuroradiology education relating to localization of more complex CNS and PNS presentations merits further exploration.

## NEUROVASCULAR, STROKE AND NEUROINTERVENTIONAL

### P.144

#### Patient-relevant deficit dictates EVT decision-making in low NIHSS patients with medium vessel occlusion stroke

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**Background:** There are no recommendations regarding endovascular treatment (EVT) for patients with acute ischemic stroke (AIS) due to primary medium vessel occlusion (MeVO). The aim of this study was to examine the willingness to perform EVT among stroke physicians in patients with mild, yet personally-disabling deficits due to MeVO. **Methods:** In an international survey consisting of 4 cases of primary MeVOs, participants were asked whether the presence of personally-disabling deficits would influence their decision-making for EVT despite the patients having low NIHSS scores. Decision rates were calculated based on physician characteristics. Clustered univariable logistic regression was performed. **Results:** 366 participants from 44 countries provided 2562 answers. 56.9% opted to perform EVT in scenarios in which the deficit was relevant to the patient's profession versus 41.0% in which no information regarding patient profession was provided (RR1.39,  $p < 0.001$ ). The largest effect sizes were seen for female participants (RR1.68, 95%CI:1.35-2.09), participants >60 years (RR1.61, 95%CI:1.23-2.10), with more neurointervention experience (RR1.60, 95%CI:1.24-2.06), and who personally performed >100 EVTs per year (RR1.63, 95%CI:1.22-2.17). **Conclusions:** The presence of a patient-relevant deficit in low NIHSS AIS due to MeVO is an important factor for EVT decision-making. This may have relevance for the conduct and interpretation of low NIHSS EVT randomized trials.

### P.145

#### Perceived Limits of Endovascular Treatment for Secondary Medium Vessel Occlusion Stroke

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**Background:** Thrombus embolization during endovascular treatment (EVT) occurs in up to 9% of cases, making secondary medium-vessel occlusions (MeVOs) of particular interest to neurointerventionalists. We sought to gain insight into the current EVT approaches for secondary MeVO stroke in an international case-based survey as there are currently no clear recommendations for EVT in these patients. **Methods:** Participants were presented with three secondary MeVO cases, each consisting of three case-vignettes with changes in patient neurological status (improvement, no change, unable to assess). Clustered multivariable logistic regression analyses were used to assess factors influencing the decision to treat. **Results:** 366 physicians from 44 countries took part. The majority (54.1%) were in favor of EVT. Participants were more likely to treat occlusions in the anterior M2/3 (74.3%; risk ratio [RR]2.62, 95%CI:2.27-3.03) or A3 (59.7%; RR2.11, 95%CI:1.83-2.42) segment, compared to the M3/4 segment (28.3%;reference). Physicians were less likely to pursue EVT in patients with neurological improvement (49.9% versus 57.0%; RR0.88, 95%CI:0.83-0.92). Interventionalists and more experienced physicians were more likely to treat secondary MeVOs. **Conclusions:** Physician's willingness to treat secondary MeVOs endovascularly is limited and varies per occlusion location and change in neurological status. More evidence on the safety and efficacy of EVT for secondary MeVO stroke is needed.

### P.146

#### Non-contrast CT markers of intracerebral hemorrhage expansion: a predictive accuracy and reliability study

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**Background:** We evaluated (1) the predictive accuracy and (2) multi-observer reliability of non-contrast CT markers of hematoma expansion (HE). **Methods:** In 124 patients with spontaneous intracerebral hemorrhage, two investigators documented the presence of six density (Barras density, hypodensity, black hole, swirl, blend, fluid level) and three shape (Barras shape, island, satellite) expansion markers, with discrepancies resolved by a third rater. We defined HE

as any one of (1) >6 mL absolute or >33% relative growth of the intraparenchymal hematoma or (2) an absolute growth of >1 mL or new development of intraventricular hematoma. A subsample of 60 patients was used for the inter-observer reliability study in 13 raters. Seven raters participated in the intra-rater study. **Results:** The sensitivity of markers for HE varied between 4% (fluid level) and 78% (satellite), while specificity ranged from 37% (swirl) to 97% (black hole). Almost perfect inter-rater agreement was observed for the swirl (0.89) and fluid level (0.83) markers, while hypodensity (0.65) showed substantial agreement. Only the blend and fluid level markers achieved substantial intra-rater agreement (> 0.6) in all raters. **Conclusions:** Non-contrast CT markers of HE showed lower reliability and predictive accuracy than previously reported. Future studies should address means to improve NCCT-based HE prediction.

## P.147

### Ruptured Intracranial Infectious Aneurysms: Single Canadian Center Experience

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**Background:** Ruptured Intracranial Infected Aneurysms (IIAs) are a relatively rare phenomenon, but they portend high mortality. To our knowledge, there are no Canadian studies on IIA with paucity of data on experiences as well. Our purpose is to share experience of a single Canadian tertiary centre in managing ruptured IIA and to conduct a systematic review. **Methods:** Retrospective case series review of adult patients with ruptured IIA treated at our institution. Secondly, we conducted a systematic review of literature on ruptured IIA between 2011-2021 inclusive. **Results:** At our institution, with a total 8 cases with ruptured IIA, 4 patients were treated endovascularly and 2 by surgical bypass. For the systematic review, we included 12 non-comparative studies with a total of 547 patients with IIA. Median percentage of ruptured IIA was at least 65.2%, cases that required intervention was 23.7% for surgical cases, and 50% for endovascular cases. The overall median percentage of complications was 5.3%. **Conclusions:** This study highlights a single Canadian tertiary centre experience in the management of IIA and compares it to the global trends of the last 10 years in a systematic review.

## OTHER CHILD NEUROLOGY

### P.148

#### Children and teenagers with hydrocephalus: Are narrowed dural sinuses better predictors of shunt-failure than ventriculomegaly?

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**Background:** Intracranial hypertension secondary to shunt-failure is a feared complication requiring cross-sectional imaging

for diagnosis. We compared dural sinus narrowing and ventriculomegaly as predictors of shunt-failure. **Methods:** 60 head MRIs and 60 MR venographies of hydrocephalus patients age 0-18 years (n=25) were analyzed. MRI studies were included when f/u clinical data combined with intra-operative findings proved shunt-failure (positive Gold standard) or when MRI was available when the child was well (negative Gold standard). The absence or presence of concerning hydrocephalus was diagnosed. On MRV, the major dural sinuses were independently analyzed with respect to >50% narrowing, suggesting compression by increased CSF pressure. Ventriculomegaly and significant dural sinus narrowing was correlated to the presence/absence of shunt failure as per Gold standard. **Results:** Sinus narrowing substantially correlated with proven shunt-failure (Cohen's kappa test 0.635/p<=0.00001 as per Fisher exact test) while ventriculomegaly correlated poorly (0.258/p=0.0751). Sensitivity/specificity was 0.69/0.92 for sinus narrowing and 0.43/0.81 for ventriculomegaly. **Conclusions:** In this patient cohort, dural sinus narrowing more reliably predicted shunt-failure compared to ventriculomegaly.

## NEUROSURGERY (CNSS)

### FUNCTIONAL NEUROSURGERY AND PAIN

#### P.149

#### Spinal Cord Stimulation for Refractory Angina

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**Background:** Refractory angina is defined as a chronic condition characterized by the presence of angina due to coronary insufficiency which cannot be controlled by a combination of medical therapy, angioplasty and coronary bypass surgery. Prevalence in the United States is estimated to be between 300,000-900,000. Spinal cord stimulation for refractory angina pain relief was first described in 1987 but is still not widely used in North America. We report our experience with this treatment. **Methods:** A retrospective review of patients referred to the St Pauls Hospital neuromodulation program for consideration of SCS for refractory angina was conducted. Patients underwent implantation using a either a two stage approach (percutaneous or permanent lead trial followed by full system implantation) or full system implantation. **Results:** Between 2004-2020 36 patients underwent full system implantation (2 patients failed the trial and were not implanted). Of the 36 patients undergoing full system implantation, 33 (92%) experienced significant reduction of angina, increased exercise tolerance and/or medication reduction and were considered successful implantation. Most common lead placement location was at C7 T1. **Conclusions:** Spinal cord stimulation is an effective therapy for patients suffering from crippling angina pain despite medical optimization.