presentation, highlighting the importance of recognizing this syndrome clinically, and radiologically, in an acute stroke presentation. *Methods:* Description of a case, and literature search on PubMed. *Results:* A 74-year-old man was seen in the ER as a Code Stroke protocol with acute alteration of level of consciousness (LOC). ER assessment showed no focal abnormalities and was significant only for disorientation. CT/CTA/CTP initially appeared unremarkable for acute abnormalities. His LOC deteriorated requiring intubation, and subsequent MRI showed bilateral thalamic infarction. Further CT Perfusion review demonstrated increased Mean Transit Time and decreased Blood Flow without Volume abnormalities in the bilateral paramedian thalami. *Conclusion:* AOP infarction is an uncommon cause of bilateral thalamic infarction. We have demonstrated a case highlighting perfusion abnormalities not previously reported in AOP occlusion, illustrating the importance and utility of advanced CT perfusion imaging whilst considering less common stroke syndromes.

## P.059

### A case series of non-bacterial thrombotic endocarditis associated with gynecological malignancies

*AJ Schabas (Vancouver)* S Yip (Vancouver) PA Teal (Vancouver) SK Mann (Vancouver)*

doi: 10.1017/cjn.2015.169

*Background:* Ischemic stroke secondary to NBTE is a rare complication of systemic malignancies. Although previously reported in gynecological cancers, this occurrence is infrequent. Furthermore, stroke pre-dating the gynecological malignancy diagnosis has rarely been reported. *Methods:* Case presentations and literature review. *Results:* Case1: A 48-year-old woman presented with acute dysarthria and left facial weakness caused by a right middle cerebral artery (MCA) infarct. Mitral valve vegetations were found on a transthoracic echocardiogram (TTE). A malignancy screen uncovered a pelvic endometrial adenocarcinoma. Case 2: A 49-year-old woman developed acute right hand weakness. A CT head scan showed a left pre-central gyrus infarct. Her TEE revealed aortic valve vegetations. An ovarian neoplasm was then discovered. Case 3: A 36-year-old woman with a known diagnosis of cervical squamous cell carcinoma developed acute left-sided weakness secondary to a right MCA stroke. Aortic valve vegetations were seen on TTE. *Conclusions:* We have reported three cases of NBTE where the underlying malignancy was gynecological. In the first two cases, the malignancy was discovered while investigating for the stroke mechanism, while the third had a known underlying malignancy. This series highlights the need to consider gynecological malignancies as an underlying cause of stroke in young women; and that the ischemic event can occur prior to the malignancy diagnosis.

## P.060

### 3D carotid reconstructions: imaging, pathology, algorithms and pipelines

*AR Khan (London) M Cocker (Ottawa) JD Spence (London) M Alturkustani (London) C Currie (London) C Cathie (London) L Hammond (London) C Lum (Ottawa) R Beanlands (Ottawa) J Tardif (Montreal) RR Hammond (London)**

doi: 10.1017/cjn.2015.170

*Background:* Whole-slide scanning of tissue sections spatially informed by imaging studies offers the opportunity to reconstruct specimens for co-registration to 3D imaging data. Digital image analysis algorithms can be designed to analyze and reconstruct such specimens via electronic "pipelines". *Methods:* A goal of the Canadian Atherosclerosis Imaging Network (CAIN) is to improve the assessment of carotid atheromatous disease through studies that inform clinical imaging with gold-standard data (plaque pathology). To achieve this, sectioned atheromas are manually annotated and analyzed by electronic algorithm for pathological features of interest. Resulting images are then reassembled in 3D for registration to ultrasound, CT, PET-CT and MRI studies. *Results:* Carotid endarterectomy specimens were sub-serially sectioned, stained, digitized and annotated manually and by electronic algorithms. Resulting 2D images were successfully rendered, reassembled and analyzed in 3D using ex-vivo micro-CT as a spatial reference. Furthermore, histology quantification using colour deconvolution was found to be preferred over hue-saturation-intensity methods 94.7-100% of the time in a blinded multiple rater study. *Conclusion:* Automated "pipelines" greatly facilitate 3D reconstruction in comparison to traditional slice-by-slice methods. Transformations spatially guided by pre-existing imaging data is not only faster, but has superior objectivity and fidelity. With embedded annotations, 3D pathology maps become a rich, micron-level, permanent digital pathological database for correlative studies.

# Neurophysiology (EMG)

## P.062

### Nail-patella syndrome: a rare etiology of inherited peripheral neuropathy?

*S Shafi (Ottawa)* P Bourque (Ottawa)*

doi: 10.1017/cjn.2015.172

*Background:* Nail-patella syndrome (NPS) is an inherited autosomal dominant disease, with an incidence of approximately 1 in 50,000. It ischaracterized by nail dysplasia, hypoplastic patellae, other bone deformities and open angle glaucoma. The phenotype is variable. *Methods:* Case report *Results:* A 66 year old male presented with complaints of mild loss of sensation in both feet with gradual proximal spread to his knees over the past decade. There was no history of pain, paresthesias, autonomic dysfunction or weakness. Examination showed pectus excavatum with symmetrically dystrophic fingernails. Sensation to crude touch, pain and temperature were reduced up to mid shin, and vibration sense was diminished till the malleoli symmetrically. Electrophysiologic studies revealed a mild to



https://doi.org/10.1017/cjn.2015.172 Published online by Cambridge University Press

moderate length-dependent polyneuropathy of axonal type. Detailed blood screening studies were negative. Genetic testing revealed the diagnosis of nail-patella syndrome with LMX1B gene mutation on chromosome 9q34. The lack of an identifiable acquired cause and the symmetric, slowly progressive and "painless" nature of the patient's peripheral neuropathy point toward an inherited etiology. *Conclusion:* We present a case of slowly progressive sensorimotor axonal polyneuropathy in a patient with a diagnosis of NPS, which has not been previously reported. Peripheral nervous system disorder may be a variable phenotypic manifestation of LMX1B gene mutation.

## Neurophysiology (fMRI)

# P.063

### Identification of resting state networks using independent component analysis in patients with brain tumors

*ST Lang (Calgary)* B Goodyear (Calgary) J Kelly (Calgary) P Federico (Calgary)*

doi: 10.1017/cjn.2015.173

*Background:* Resting state functional MRI (rs-fMRI) provides many advantages to task-based fMRI in neurosurgical populations, foremost of which is the lack of the need to perform a task. Many networks can be identified by rs-fMRI in a single period of scanning. Despite the advantages, there is a paucity of literature on rs-fMRI in neurosurgical populations. *Methods:* Eight patients with tumours near areas traditionally considered as eloquent cortex participated in a five minute rs-fMRI scan. Resting-state fMRI data underwent Independent Component Analysis (ICA) using the Multivariate Exploratory Linear Optimized Decomposition into Independent Components (MELODIC) toolbox in FSL. Resting state networks (RSNs) were identified on a visual basis. *Results:* Several RSNs, including language (N=7), sensorimotor (N=7), visual (N=7), default mode network (N=8) and frontoparietal attentional control (n=7) networks were readily identifiable using ICA of rs-fMRI data. *Conclusion:* These pilot data suggest that ICA applied to rs-fMRI data can be used to identify motor and language networks in patients with brain tumours. We have also shown that RSNs associated with cognitive functioning, including the default mode network and the frontoparietal attentional control network can be identified in individual subjects with brain tumours. While preliminary, this suggests that rs-fMRI may be used pre-operatively to localize areas of cortex important for higher order cognitive functioning.

## Neurosurgery (Critical Care/Neuro Trauma)

# P.065

### "Novell" medical therapies in ICP management: targeting three brain states

*FA Zeiler (Winnipeg)* N Sader (Winnipeg) CJ Kazina (Winnipeg) J Teitelbaum (Montreal) LM Gillman (Winnipeg) M West (Winnipeg)*

doi: 10.1017/cjn.2015.175

*Background:* There exists the role for novel agents in the management of refractory intracranial pressure (ICP) via targeting cerebral acidosis, hyperemia, and excitotoxicity. *Objective:* We performed 4 separate systematic reviews to determine the effect of tromethamine (THAM), indomethacin, and ketamine on ICP. *Methods:* All articles from MEDLINE, BIOSIS, EMBASE, Global Health, HealthStar, Scopus, Cochrane Library, the International Clinical Trials Registry Platform (inception to: February 2014 – THAM, July 2014 – Indomethacin, November 2013 - Ketamine), and gray literature were searched. The strength of evidence was adjudicated using both the Oxford and GRADE methodology. *Results:* Twelve articles were reviewed utilizing THAM while documenting ICP in neurosurgical patients. All but one study documented a decrease in ICP. Twelve original articles were reviewed utilizing indomethacin for ICP in neurological patients. All but one study documented a decrease in ICP. Seven articles were reviewed utilizing ketamine, documenting ICP in TBI patients, with 16 in non-trauma neurological patients. ICP did not increase in the studies during ketamine administration, and trended to decrease ICP. *Conclusion:* There exists Oxford level 2b, GRADE B evidence that THAM reduces ICP in the TBI and malignant ischemic infarct population. There exists Oxford level 2b, GRADE C evidence that indomethacin and ketamine reduce ICP in the adult severe TBI population.

# P.067

### The effectiveness of a concussion-u educational presentation on knowledge and attitudes of concussion amongst elite bantam and midget hockey players

*M Eagles (St. John's)* M Powell (St. John's) D Bradbury-Squires (St. John's) J Murphy (St. John's) G Campbell (St. John's) FB Maroun (St. John's)*

doi: 10.1017/cjn.2015.176

*Background:* The diagnosis of a concussion is often dependent on the athlete self-reporting their symptoms. It has been suggested that improving athlete's knowledge and attitudes towards concussions may increase self-reporting behavior; however, research in this area is inconclusive. The objective of this study is to determine if a Concussion-U educational presentation improves knowledge and attitudes of youth hockey players towards concussions. This is part of a larger study designed to determine the impact of an informational presentation on the knowledge and attitudes over a full hockey season. *Methods:* 56 elite male Bantam and Midget hockey players (mean age =14.52 ± 1.13 years) were recruited from the local community. Each participant completed a modified version of Rosenbaum and Arnett's Concussion Knowledge and Attitudes Survey



https://doi.org/10.1017/cjn.2015.172 Published online by Cambridge University Press