

but evidence of direct glycinergic inhibition of the external urethral sphincter in Onuf's nucleus may be responsible for urinary retention.

## NEUROLOGY (STROKE)

### P.055

#### **Distinguishable distribution of cerebral artery stenoses: ultrasonographic evidence from a northeast Chinese cohort**

H Liu (Changchun) X Wu (Changchun) Y Xing (Changchun) K Liu (Changchun) H Zhang (Changchun)\*

doi: 10.1017/cjn.2015.165

**Background:** Cerebral artery stenosis is an important risk factor for ischemic strokes. This study aims to explore intracranial and extracranial artery stenosis in a large northeast Chinese cohort. **Methods:** We recruited 14793 outpatients and hospitalized patients to identify cerebral artery stenosis. Artery stenosis screening was done with transcranial Doppler (TCD) for intracranial arteries and carotid duplex sonography for extracranial arteries. **Results:** More intracranial than extracranial artery stenoses were identified (4255 versus 2809, i.e. 28.8% versus 19.0%,  $P < 0.05$ ). Similarly, more intracranial stenosis was significantly more common than extracranial artery stenosis in this population (2632 versus 1186, i.e. 17.8% versus 8%,  $P < 0.05$ ). Among all identified intracranial arteries stenoses, the proportion of middle cerebral artery (MCA) stenosis was the highest. More intracranial than extracranial artery stenoses was seen within each age group, and rates of both increased with age. Intracranial and extracranial artery stenosis was more frequently identified in males than females. **Conclusions:** Incidence of cerebral artery stenosis in the population increases with age. Intracranial artery stenosis is more common than extracranial artery stenosis and the MCA stenosis accounted for the highest proportion, within each age group. More males suffer from intracranial or extracranial artery stenosis than females.

### P.056

#### **Noninvasive assessment of ischemic penumbra by using MR-SWI during the acute phase of cerebral infarction: a comparison to PWI**

S Luo (Changchun) X Wu (Changchun) F Deng (Changchun) Y Zhang (Changchun) J Miao (Changchun) Y Chen (Changchun) L Wang (Changchun) J Feng (Changchun) H Zhang (Changchun)\*

doi: 10.1017/cjn.2015.166

**Background:** Assessment of ischemic penumbra during the acute stage of cerebral infarction is crucial for a decision to initiate thrombolytic therapy and for predicting stroke evolution. Although controversial as a perfect equivalence to penumbra, perfusion weighted imaging (PWI)-diffusion weighted imaging (DWI) mismatch may predict the response to thrombolysis. Due to the reliance on contrast agents in PWI, noninvasive alternatives remain an unmet need. **Methods:** We herein investigate the potentials of SWI as an alternative to PWI in defining ischemic penumbra and in predicting

stroke outcome. A multimodal magnetic resonance imaging work-up which includes conventional magnetic resonance imaging sequences (T1WI, T2WI and FLAIR), DWI, PWI and SWI was performed. The Alberta Stroke Programme Early CT Score (ASPECTS) was used to evaluate the changes in DWI, SWI and PWI. **Results:** The mismatch of SWI-DWI was comparable with that of PWI-DWI ( $p > 0.05$ ). Furthermore, the grade of prominent vein and the cerebral blood volume in the ipsilateral brain tissue were positively correlated. **Conclusions:** SWI can be used as a noninvasive alternative to identify occlusive arteries and to evaluate the ischemic penumbra. The susceptibility vein sign may represent thrombosis in arteries whereby being helpful to identify responsible blood vessels in ischemic stroke.

### P.057

#### **Different strokes for different folks: epidemiology of cerebrovascular diseases amongst Chinese-Canadians residing in Toronto**

JY Chu (Toronto)\* JK Chu (Atlanta) DK Chu (Hamilton) S Lam (Toronto)

doi: 10.1017/cjn.2015.167

**Introduction:** It has been recognized in the past few decades that different ethnic groups living in Canada may have different stroke epidemiology. This presentation is focused on the stroke patterns of Chinese-Canadians living in the Toronto area. **Methods:** Two retrospective case-controlled studies were carried out between 1990- 2000 to study the stroke characteristics of Chinese-Canadians living in Toronto. Statistical analysis was carried out by the Institute of Clinical Evaluative Sciences. A further retrospective study was also carried out in 2011 to look at the relationship between stroke and diabetes mellitus amongst this population. **Results:** Chinese-Canadians were found to have 1/6 the prevalence of extracranial vascular stenosis. They have a higher frequency of intracranial vascular disease which may be due to the higher frequency of hypertension and diabetes mellitus. Higher incidence of intracranial hemorrhage was found compared to Caucasian controls which may be due to the lack of awareness and optimal treatment of their hypertension. Details of the results of these three studies will be presented. **Conclusions:** This is the first long term retrospective study of the stroke patterns and epidemiology for Chinese-Canadians residing in Toronto. Further prospective population-based study will be vital to study the important interactions between genetics and environment in the pathogenesis of different strokes for different folks.

### P.058

#### **Bilateral thalamic infarction due to artery of percheron occlusion with corresponding CT perfusion abnormalities**

A MacLellan (Toronto)\* K Boyle (Toronto)

doi: 10.1017/cjn.2015.168

**Background:** The Artery of Percheron (AOP) is a rare anatomic variant that supplies the bilateral medial thalami from a common origin; occlusion results in a characteristic pattern of bilateral thalamic infarction seen on neuroimaging. To date, we have not identified any cases in the literature describing corresponding ischemic changes seen on hyperacute CT Perfusion imaging. We aimed to characterize perfusion abnormalities seen in AOP occlusion by describing a case

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:* Case 1: 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 Al-turkustani (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 is characterized 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