

to 3/week. Seizures last only 2-3 seconds, without postictal confusion leading to improvements in neuropsychological function. AED dosages are not reduced. *Conclusions:* Successful intracranial EEG localization of otherwise non-lesional non-resectable seizure focus permits the use of deep brain stimulation that effectively reduces refractory seizure frequency.

## P.027

### Investigation of hippocampal sub-structures in HS and non-HS focal temporal lobe epilepsy at 7T

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*Background:* The clinical identification of hippocampal sclerosis (HS) is important in predicting surgical outcomes in patients with temporal lobe epilepsy (TLE). In cases where gross hippocampal sclerosis is not identifiable clinically, a more detailed analysis of hippocampal subfields using ultra-high-field magnetic resonance imaging (MRI) may reveal areas of abnormality, which was the focus of our study. *Methods:* Patients (N=13) with drug-resistant TLE (9 no-HS, 4 HS) and 20 age-matched healthy controls were scanned and compared using a 7T MRI protocol. Using a manual segmentation scheme to delineate hippocampal subfields, subfield-specific volume changes were studied between the two groups. In addition, radiological patient assessment at 7T was correlated with measured subfield changes. *Results:* Volumetry of the hippocampus at 7T in HS patients revealed significant ipsilateral subfield losses in CA1 and CA4DG. Volumetry also uncovered subfield volume losses in 33% of no-HS patients, which had not been detected conventionally. Furthermore, 89% of no-HS patients showed abnormality (internal architecture or size) at 7T, identified by radiologists blinded to the patient's initial classification. *Conclusions:* These preliminary findings indicate that hippocampal subfield volumetry assessed at 7T may be superior to conventional visual inspection by a neuroradiologist in the identification of hippocampal pathologies in TLE.

## P.028

### Incidence and management of seizures and epilepsy after ischemic stroke: a systematic review

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*Background:* Seizures and epilepsy are well-recognized complications after stroke. However, the reported incidence varies and so does their management. *Methods:* We conducted a systematic review and sought observational studies that reported incidence of seizures and/or epilepsy following arterial ischemic stroke in adults, and those that reported the management of epilepsy, specifically the use of EEG to determine the diagnosis, timing of initiation of anti-epileptic drug (AED), and the treatment response to AEDs. We systematically searched in Medline including Pre-Medline and EMBASE databases from their inception to October 1, 2015. First the titles and then the articles were reviewed and rated by two independent reviewers, and

disagreements were resolved by consultation with a third reviewer. A pre-set data abstraction form was used for extracting the information of interest. *Results:* A total of 11,815 titles were found from the initial search strategy across all databases following de-duplication. Of these 130 studies are included for full text review. The adjudication process is underway and the reviewers are sifting through these studies to select the studies that will be included in the final review. *Conclusions:* Understanding incidence and management of post-stroke epilepsy is important to improve the quality of life of stroke survivors.

## GENERAL NEUROLOGY

## P.029

### Case report: Facial diplegia and aseptic meningitis in a 44 year-old man returning from Côte d'Ivoire

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*Background:* Bilateral facial paralysis is a rare manifestation of Human Immunodeficiency Virus (HIV). Few cases of HIV seroconversion syndrome presenting with aseptic meningitis and facial diplegia have been previously reported. *Methods:* Case Report. *Case Description:* A 44-year-old male with uncontrolled hypertension who presented with 5-day history of migrainous headache, buccolabial dysarthria, meningismus and dysgeusia. Three weeks prior to presentation, he suffered a transient febrile illness preceded by an unprotected sexual encounter while vacationing in Côte d'Ivoire. Examination was significant for hypertensive urgency, bilateral lower motor neuron (LMN) facial paralysis, and meningeal irritation. Investigations revealed acute on chronic renal impairment and left ventricular hypertrophy. Brain MRI (without contrast) revealed microhemorrhages with dystrophic calcifications and microangiopathic changes. CSF analysis revealed 55 WBC (lymphocytic), normal glucose, and 0.67g/L protein. The infectious work-up was positive for HIV, which was confirmed by Western Blot (WB). CD4 count was 176 cells/ $\mu$ L and the viral load was 419,289 copies/ml. Lyme antibodies were also positive by enzyme-linked immunosorbent assay (ELISA), but negative by WB. *Discussion:* Facial diplegia is a rare manifestation of HIV, and can be indicative of a seroconversion syndrome. This case illustrates another layer of complexity; deciphering acute from chronic systemic manifestations of hypertension, and appreciating falsely positive Lyme antibodies by ELISA during acute HIV seroconversion.

## P.031

### Lemierre's syndrome - a rare disease with devastating complications

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*Background:* Lemierre's syndrome is a rare but serious complication of bacterial oropharyngeal infection. It is characterized by

local spread of the primary infection, thrombophlebitis of the internal jugular vein, and septic metastases resulting in significant multi-system complications. *Methods:* A case report. *Results:* A previously healthy 63 year-old female presented to our emergency room with four-day history of sore throat, headache, fever and malaise. Initial examination revealed evidence of left tonsillar swelling and cervical lymphadenopathy. The patient rapidly deteriorated within hours of presentation and developed septic shock that was complicated by an acute kidney injury and disseminated intravascular coagulation (DIC). CT of the head and neck revealed a deep abscess within the left masticular triangle extending to surrounding soft tissue as well as C1-C3 epidural space. An extensive bilateral internal jugular vein thrombosis was noted; extending into the sigmoid and cavernous sinuses bilaterally. A thrombosis of the superior sagittal sinus and parafalcine subdural hematoma were also demonstrated. Blood cultures grew Group C Streptococcus. As the deep abscess was not amenable to surgical drainage, the patient was treated with broad-spectrum IV antibiotics. Anticoagulation was also commenced after management and resolution of the DIC. *Conclusions:* Lemierre's syndrome remains relevant nowadays and awareness of its potential neurological complications is warranted.

## P.032

### Development of a new instrument to discriminate orthostatic from non-orthostatic symptoms

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*Background:* Orthostatic symptoms including dizziness, lightheadedness and syncope can be major causes of disability in patients with dysautonomia. Currently there is no validated tool capable of discriminating orthostatic from non-orthostatic constitutional symptoms. Therefore, we developed the Orthostatic Discriminant and Severity Scale (ODSS) to help make this distinction. Objective: Demonstrate validity and reliability of the ODSS. *Methods:* Convergent and clinical validity were assessed by correlating Orthostatic scores with previously validated tools (Autonomic Symptom Profile (ASP), composite scores of the Orthostatic Hypotension Questionnaire and the total Composite Autonomic Severity Score (tCASS), respectively). Test-retest reliability was calculated using an intra-class correlation coefficient. *Results:* Orthostatic scores from 23 controls and 5 patients were highly correlated with both the Orthostatic Intolerance index of the ASP ( $r=0.724$ ;  $p<0.01$ ) and the composite OHDAS and OHSAS ( $r=0.552$ ;  $p<0.01$  and  $r=0.753$ ;  $p<0.01$ , respectively), indicating good convergent validity. Orthostatic scores were significantly correlated with tCASS ( $r=0.568$ ;  $p<0.01$ ), and the systolic blood pressure change during head-up tilt ( $r=-0.472$ ;  $p=0.013$ ). In addition, patients with Neurogenic Orthostatic Hypotension had significantly higher Orthostatic scores than controls ( $p<0.01$ ) indicating good clinical validity. Test-retest reliability was strong ( $r=0.954$ ;  $p<0.01$ ) with an internal consistency of 0.978. *Conclusions:* Our results, though preliminary, provide empirical evidence that the ODSS is capable of producing a valid and reliable orthostatic score.

## P.033

### Novel presentation of NMDA receptor encephalitis

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*Background:* NMDA receptor encephalitis (NMDARE) is associated with pre-existing psychiatric symptoms and seizure disorders. It is not typically associated with elevated ICP. Diagnostically, EEG findings in NMDARE are characteristic as are the pathological features of ovarian teratomas associated with this disease. We report a patient who tested positive for NMDARE however presented with features not known to be associated with the disease including elevated ICP, atypical EEG findings and grossly atypical features on pathological section. *Results:* A 26 year old woman presented with psychiatric symptoms and status epilepticus. On examination, she was found to have papilledema and elevated ICP on measurement. Her imaging and EEG demonstrated atypical findings, not consistent with NMDARE. CT scan of the abdomen demonstrated an adnexal mass. CSF studies eventually tested positive for NMDARE and following removal of her ovarian teratoma, the pathology demonstrated atypical findings for lesions associated with NMDARE classically. *Conclusions:* NMDARE is a new entity, which has historically shown a typical clinical course. Our case demonstrates a previously undescribed presentation of NMDARE with elevated ICP, atypical EEG findings and unique pathology of the associated ovarian teratoma.

## P.034

### Eye movement assessment and diffusion tensor imaging in patients with post concussion syndrome

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*Background:* Post concussion syndrome (PCS) can affect up to 30% of patients with concussion. Biomarkers of this condition would be beneficial for diagnosis and management. We hypothesized that eye tracking parameters would correlate with microstructural changes of white matter integrity, as measured by diffusion tensor imaging (DTI), in patients with PCS. *Methods:* Sixty patients with PCS and at least 2 concussions participated in our prospective study. Attention and executive function were tested using Visual Attention Scanning Technology (VAST). In a matching task, the normalized number of visits to master image before making the first selection is used as a surrogate of working memory. We related performance on VAST to white matter integrity using Tract-Based Spatial Statistics of diffusion tensor imaging data. *Results:* 60 participants (mean age 34.3 years, SD 13.8) had a mean of 4 concussions. There were negative correlations between fractional anisotropy (FA) of the genu, body, and splenium of the corpus callosum and normalized number of visits to master image before first selection ( $r=-0.432$ ,  $p=0.001$ ;  $r=-0.504$ ,  $p<0.001$ ; and  $r=-0.388$ ,  $p=0.002$ ; respectively). A negative correlation was also seen between right cingulum FA and the global processing index ( $r=-0.349$ ,  $p=0.006$ ). *Conclusions:* Impaired performance