Epilepsy and EEG

P.008

Could Transient neurological Symptoms with subdural hematoma be explained by Cortical spreading depolarization Activity in Neurons? (CT-SCAN)

M Levesque (Trois-Rivieres) C Deacon (Sherbrooke) C Bocti (Sherbrooke) F Moreau (Sherbrooke) C Vézina (Sherbrooke) C Iorio-Morin (Sherbrooke)*

doi: 10.1017/cjn.2018.110

Background: Transient neurological symptoms in patients with subdural hematoma (SDH) are often attributed to secondary epilepsy despite a negative workup. We believe a significant proportion of these patients could rather suffer from cortical spreading depolarization (CSD). **Methods:** We performed a retrospective case-control study of patients with transient neurological symptoms post-SDH evacuation between 1996 and 2017. The clinical features of patients with negative EEG were compared to those with positive EEG (ictal or interictal abnormalities) and a clinical scoring system was created. **Results:** 59 patients were included, 20 (34%) with a positive EEG. Speech-related symptoms (OR 4.8, p=0.018) and prolonged episodes (OR 23.1, p=0.001) were associated with a negative EEG. Clonic movements (OR 0.014, p<0.0005), impaired awareness (OR 0.013, p<0.0005), positive symptoms (OR 0.05, p<0.0001), complete response to standard antiepileptic drugs (OR 0.06, p=0.007) and mortality (OR 0.021, p=0.003) were associated with a positive EEG. We built a clinical score based on these features, which showed a 90% sensitivity and 100% specificity. **Conclusions:** We believe that the differences observed between both groups were driven by the presence of CSD rather than seizure in the case group. Our proposed scoring system can help predict EEG results and may be useful to identify CSD in future trials.

P.009

Improving triaging of Infantile Spasm EEG referrals in a large Canadian institution

D Djordjevic (Toronto) C Go (Toronto)*

doi: 10.1017/cjn.2018.111

Background: Infantile spasms (IS) is a seizure disorder in young children which can be challenging to recognize. Early diagnosis and treatment of IS is critical for prevention of developmental delay. At the Hospital for Sick Children, rule-out IS accounts a large percentage of outpatient EEG referrals, while few result in a diagnosis. The goal of this study was to characterize the seizure semiology and source of referral, in order to explore ways in which triaging of these referrals may be improved. **Methods:** A retrospective review was done on all 84 rule-out IS EEG referrals within the last year at the Hospital for Sick Children. Source of referral, description of episodes, and result of EEG was extracted and data qualitatively analyzed. **Results:** Neurologists at Hospital for Sick Children accounted for the least number of referrals however contributed the greatest percentage of IS diagnoses. Non-neurologists contributed the most referrals, however 75% of these EEGs were normal. Common semiologies as described by referring physicians are discussed. **Conclusions:** Improved triaging of EEG referrals may be achieved through screening of referrals by paediatric neurologists, clarification of event semiology, and better IS education. This represents a critical opportunity for improvement of resource allocation as well as patient care and outcomes within all major referral centres.

P.011

Not just for babies: positive rolandic sharp waves in adult post-hypoxic myoclonus

GA McLeod (Winnipeg) MC Ng (Winnipeg)*

doi: 10.1017/cjn.2018.113

Background: Post-hypoxic myoclonus is broadly divided into myoclonic status epilepticus (MSE) and Lance-Adams syndrome (LAS), where diagnosis depends on clinical and electroencephalographic (EEG) findings. Positive rolandic sharp waves (PRS) are a classic EEG finding in pre-term infants with white matter necrosis, but they are not known to be epileptogenic and have never been described in adults. **Methods:** We report a unique case of PRS correlated with myoclonic seizures in a post-hypoxic adult patient. **Results:** Shortly after cardiac arrest, a 21-year-old woman developed multifocal post-hypoxic myoclonus. Early development of myoclonus suggested MSE, but her EEG findings were atypical for MSE; initially, the only notable feature on EEG were subtle PRS. LAS did not fit the clinical picture or EEG findings. As myoclonus persisted over the following weeks, PRS evolved on EEG into positive rolandic predominant generalized polyspike-wave complexes that became definitively time-locked to each myoclonic jerk. PRS were diagnosed as epileptogenic and frequent myoclonic jerks were diagnosed as continuous myoclonic seizure. Myoclonus resolved to medication and mental status returned to baseline. **Conclusions:** We report for the first time that PRS can appear in adult patients and be epileptogenic, and produce a non-classical variant of post-hypoxic myoclonus that carries good prognosis.

P.012

Post-operative hippocampal volume changes on magnetic resonance volumetry in patients with mesial temporal lobe epilepsy

K Iida (Hiroshima) J Katayama (Hiroshima) K Kagawa (Hiroshima) M Katagiri (Cleveland) G Seyama (Hiroshima) A Hashizume (Hiroshima) K Kurisu (Hiroshima) H Otsubo (Toronto)*

doi: 10.1017/cjn.2018.114

Background: We evaluate long-term post-operative hippocampal volume (HV) on non-epileptic hippocampus using MR volumetry as well as the neuropsychological outcome in patients with surgery for unilateral mesial temporal lobe epilepsy (MTLE) and achieved seizure-freedom. **Methods:** We studied 1.5-Tesla MRI before and after epilepsy surgery in 24 patients with MTLE. Serial MRI studies were scheduled at 4 post-operative consecutive periods; 6m-1y; 1-2y; 2-3y; 3-5y. We compared neuropsychological outcomes for memory and estimated IQ at the same periods with serial MRI up to 3 years. **Results:** The pre-operative non-epileptic HV was significantly smaller than HV in age-matched controls (n=14) (p<0.05). The HV became progressively atrophic after the surgery (p<0.05), correlating with the age at surgery (p<0.05) and pre-operative larger non-epileptic HV (p<0.05), but not with seizure duration. In 14 patients with