CHV atrophy at delayed scan relative to baseline (mean atrophy 26.8%). In the longitudinal group there is significant and progressive atrophy from baseline to POD4-8 (72.6+/-6.5%), POD60-360 (69.7+/-12.3%) and >360 (58.5+/-10.6%). No significant atrophy in either the control group HV or contralateral CV over time. No significant difference in mean HV at the most delayed exam for surgery type (p=0.13) or side (p=0.24). *Conclusions:* We find a statistically significant CHV atrophy following surgery which is progressive over time. Our longitudinal within-subject design describes the time course and extent more fully than previous work. Caudate analysis indicates that early CHV atrophy is not due to global atrophy following brain surgery but rather may be due to deafferentation and deefferentation. Finally, we find no significant difference in atrophy when analyzed by surgical approach or surgical side.

P.020

Marijuana use in intractable epilepsy

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Background: In Canada, marijuana is legal for those with seizures. We determined the prevalence of marijuana use in intractable epilepsy patients and assessed the perceived effects. *Methods:* Information about marijuana use was collected over 12 months from consecutive adult patients admitted to an 8 bed Epilepsy Monitoring Unit using a 27 item self-administered questionnaire. Patients unable to understand and give consent for participation were excluded. *Results:* 215 of 310 patients median age 36 (interquartile range 27-49) years, 57% female had proven epilepsy. Median duration of seizures was 12 years (interquartile range 5-24) occurring daily or weekly in 47%. 37% of patients used marijuana over the previous year, 85% by smoking and 56% on a daily basis. Mean dose was 1 gm/day. Another 19% had used it previously. Use of cigarettes was 27%, alcohol, 40% and street drugs 2%. Seizure improvement was perceived by 91%, decreased stress by 99%, improved sleep by 98% and reduction in antiepileptic drug side effects by 88%. Minor adverse effects of marijuana occurred in 13% including seizures worse in 3%. *Conclusions:* Patients investigated for intractable epilepsy use marijuana more than the general population and perceive improved seizure control, lower stress, better sleep and reduced side effects from antiseizure drugs.

P.021

Contactin-associated protein 2 (Caspr2) antibodies associated with refractory temporal seizures, rapid cognitive decline, and emotional lability

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Background: Caspr2 is a transmembrane protein facilitating intercellular communication. It is found primarily in the central nervous system, specifically cerebellum and hippocampus. Anti-Caspr2 antibodies, more commonly seen in men (M/F: 4), also bind voltage-gated potassium channels. The antibodies are associated with limbic encephalitis, seizures, Morvan's syndrome, peripheral nerve hyperexcitability, and cerebellar ataxia. Malignancy exists in 20% of cases. *Methods:* Case report and review of literature. *Results:* A 71-year-old man presented with subacute onset refractory seizures failing several anti-convulsants, emotional lability, and rapid decline in memory and executive function. EEG showed an electrographic seizure over the left hemisphere. MRI brain demonstrated mild diffuse cerebral atrophy, chronic ischemic changes, and mild diffusion restriction in the medial frontal lobes. Cerebrospinal fluid was normal. Serum Antithyroid peroxidase and antithyroglobulin antibodies were negative. TSH was slightly elevated and eltroxin didn't help. Anti-Caspr2 antibodies were highly positive. EMG ruled out neuromyotonia. Body CT and PET scans indicated no malignancy. Treatment with IVIG stopped the seizures and cognition dramatically improved. *Conclusions:* Recognizing anti-Caspr2 antibody-associated encephalitis in elderly males with new onset refractory epilepsy and rapid cognitive decline is important for timely initiation of immunomodulation to avoid permanent deficits. Rapid executive dysfunction was unique in this case.

P.022

fMRI for language: how can it replace the Wada test?

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Background: The goal of our project is to assess the feasibility of replacing the invasive Wada test considered as the gold standard with non-invasive fMRI test for assessment of language dominance preoperatively. *Methods:* fMRI test with three language paradigm tasks (verb generation, sentence completion and naming) were conducted on our cohort of patients. fMRI laterality indices (LI) were then defined as a ratio (L-R)/(L+R) between the number of activated voxels in the left and right ROIs for Anterior Language Area (ALA) and Posterior Language Area (PLA). fMRI results were divided into the right (LI < -0.2), left (LI > 0.2) or bilateral (-0.2 < LI <0.2) hemispheric language dominance and compared to the results of the Wada test. *Results:* 28 patients were studied. The concordance rate between Wada and fMRI tests for the ALA and PLA was 68.2% and 52.2% for sentence completion; 56% and 52% for verb generation and 25% and 35% for naming paradigm, respectively. *Conclusions:* Sentence completion and verb generation fMRI paradigms showed higher concordance with Wada test than naming paradigm. The higher discordance between the Wada test and fMRI was related to bilateral results suggestive of less stringent thresholds used for either test.

P.023

Infraslow Status Epilepticus: A new form of subclinical status epilepticus recorded in a child with Sturge Weber Syndrome

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Background: Analysis of infraslow EEG activity (ISA) has shown potential in the evaluation of patients with epilepsy and in differentiating between focal and generalized epilepsies. The purpose of this report is to present a girl with Sturge-Weber Syndrome (SWS) who was identified to have infraslow status epilepticus (ISSE), which successfully resolved after Midazolam administration *Methods:* The continuous EEG recording of a 5-yr-old girl with known Structural

Epilepsy due to Sturge-Weber is presented. The patient presented to the ED with acute confusion, eye deviation and right hemiparesis similar to two previous admissions. ltm-eeg showed diffuse slowing. DWI obtained within 72-hr showed no ischemic changes, analysis of the EEG nfraslow (ISA) activity was undertaken using LFF 0.01 AND HFF of 0.1 Hz respectively. *Results:* Continuous subclinical unilateral rhythmic ictal ISA was identified. This was only evident in the left hemisphere which correlated with the structural changes due to SWS. A trial of continuous IV midazolam resulted in immediate resolution of the contralateral hemiparesis and encephalopathy. *Conclusion:* Continuous prolonged rhythmic ictal Infraslow activity (ISA) can cause super-refractory subclinical focal status epilepticus. This has not previously reported, and we propose this should be called Infraslow status epilepticus (ISSE). ISA analysis should be performed in all patients with unexplained subclinical status epilepticus.

Neurology (General Neurology)

P.024

Cauda equina syndrome secondary to leptomeningeal carcinomatosis of gastroesophageal junction cancer

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Background: Leptomeningeal Carcinomatosis (LMC) is defined as a diffuse or multifocal malignant infiltration of the Pia matter and arachnoid membrane. It is clinically diagnosed in 5-10% of all cancer patients. The most commonly reported cancers associated with LMC are breast, lung and hematological malignancies. Patients with LMC commonly present with multifocal neurological symptoms. Symptoms are related to increase intracranial pressure, hemispheric dysfunction, cranial neuropathies and spinal roots dysfunction. We report a case of LMC secondary to Gastroesophageal junction cancer present initially with Cauda equine syndrome. *Methods:* A 51 year old male patient with adenocarcinoma of Gastroesophageal junction who underwent surgical resection, chemotherapy and radiation therapy. Nine month after diagnosis he presented with left leg pain, mild weakness and saddle area numbness. Initial radiological examination were unremarkable. Subsequently he had worsening of his leg weakness, fecal incontinence and urine retention. Two days later he developed rapidly progressive cranial neuropathies including facial diplegia, sensorineural hearing loss, dysarthria and dysphagia. *Results:* MRI with and without contrast showed diffuse enhancement of leptomeninges surrounding the brain, spinal cord and Cauda equine extending to the nerve roots. Cerebrospinal fluid cytology was positive for malignant cells. *Conclusion:* In cancer patient with Cauda equina syndrome and absence of structural lesion on imaging, LMC should be considered.

P.025

Intravascular large B-Cell lymphoma (IVLBCL) presenting as lumbosacral polyradiculopathy

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Background: IVLBCL is potentially treatable but difficult to diagnose. *Methods:* A case of progressive leg weakness and sphincter dysfunction diagnosed only at autopsy. *Results:* A 72 year old female presented with three weeks of increasing leg weakness and three days of urine and stool incontinence. Electrophysiological testing showed reduced tibial and peroneal CMAPs, preserved sural SNAPs, and bilateral gastrocnemius fibrillations, consistent with a pre-ganglionic lesion. Lumbosacral MRI with gadolinium showed no abnormalities. CSF was examined three times (protein 1.18-1.25, glucose 2.6-3.1, normal cell count and cytology). Whole-body FDG PET scanning showed hypermetabolic foci at the tongue base and in the mediastinum, but biopsy of both revealed no abnormality. Leg weakness progressed over three months and spread to the arms despite a course of IVIg. Four months later she died of cardiorespiratory arrest. Autopsy revealed the presence of large atypical B-cells within the lumen of small and medium sized vessels in numerous organs. There was evidence of anterior spinal artery obstruction with lymphocytes and anterior horn infarction in the lumbar cord. *Conclusions:* Although the literature reports that IVLBCL responds well to chemotherapy, this patient illustrates the difficulty of ante-mortem diagnosis. Nerve root biopsy may be warranted in such patients.

P.026

A prospective 1-year study of postural tachycardia and the relationship to non-postural versus orthostatic symptoms

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Background: Postural tachycardia syndrome (POTS) is defined as heart rate (HR) increments ≥30 bpm on head-up tilt (HUT) associate with orthostatic symptoms (lightheadedness, dizziness, palpitations, etc.). A large proportion of asymptomatic young adults naturally express excessive HR increments on HUT, which has raised questions regarding whether revision to the diagnostic criteria for POTS in younger patient populations is needed. In addition, poor adaptation to environmental stressors may contribute to the disability experienced by POTS patients. *Objectives:* 1) determine whether asymptomatic patients were predisposed to developing constitutional symptoms that could result in the full syndrome of POTS, and 2) determine whether these symptoms correlated to postural HR or orthostatic symptoms. *Methods:* HR response to HUT and orthostatic and constitutional symptoms in 30 asymptomatic POTS patients were evaluated after 1 year. *Results:* HR increment at follow-up demonstrated no correlation with general fatigue ($r = 0.006$), body vigilance ($r = 0.195$), physical ($r = -0.087$) and mental ($r = -0.137$) health, or orthostatic scores ($r = 0.04$). Orthostatic scores significantly correlated with general fatigue ($r = 0.374$) and body vigilance ($r = 0.392$) ($p<0.05$). *Conclusion:* These data support that the majority of young individuals express benign orthostatic tachycardia and further argue for re-evaluation of the HR criteria for diagnosing POTS in younger populations.