

used trends were spectrographic, seizure detection, and artifact detection. Montage use, QEEG duration, and timebase settings were highly variable. *Conclusions:* QEEG is in surprisingly frequent use across Canada. There is no consensus on optimal QEEG use, which mirrors uncertainty in the literature. The relative ubiquity of QEEG in Canada offers promise for collaborative multicentre research into unlocking the full potential of QEEG in enhancing patient care.

P.077

EEG attenuations in adults: clinical correlates

G Hunter (Saskatoon) R Verity (Saskatoon)*

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Background: Intermittent EEG attenuations have relatively clear significance in pediatric populations, but a consistent clinical correlation has not been identified in adults. While generally seen in metabolic encephalopathies, the specific clinical correlates and prognostic value have not been determined. *Methods:* We prospectively collected 22 consecutive EEGs noted to have intermittent generalized attenuations. Baseline and discharge modified Rankin Scale (mRS), diagnosis at discharge, EEG altering medications, ICU admissions, relevant imaging, mental status, the location the patient was discharged to, and pertinent lab values were assessed. *Results:* Mean patient age was 73.7 (SD = 11.0) at admission. Twelve of the twenty-two patients (55%) died during their course in hospital. Four patients (18.2%) did not have a change in mRS score from baseline to discharge, while most had an increase in their mRS scores reflecting increased disability. Twelve patients (55%) were admitted to the ICU or CCU during their time in hospital. The most common etiologies were metabolic encephalopathies, and often associated with triphasic waves. *Conclusions:* Intermittent generalized EEG attenuations in adults are associated with severe metabolic encephalopathies and poor outcome including high association with mortality. The physiologic mechanism of generalized attenuations is poorly understood. Patients with this pattern should be suspected of having a severe metabolic encephalopathy and treated accordingly.

EMG

P.078

Diaphragm ultrasound in amyotrophic lateral sclerosis: a case report demonstrating a critical role for this technique

MA Ross (Scottsdale)* BE Smith (Scottsdale) I Muzyka (Scottsdale) J Dalrymple (Scottsdale)

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Background: Diaphragm pacing (DP) is an experimental ALS treatment, available through a compassionate use program. Eligibility requires forced vital capacity (FVC) between 45-50% predicted and phrenic nerve conduction study (NCS) evidence showing the diaphragm can be electrically stimulated. Diaphragm ultrasound (DU) also evaluates diaphragm function by demonstrating thickening with inspiration. *Methods:* A 63 year old man with advanced ALS requested DP as his respiratory functions worsened. He was wheelchair bound and had severe dysarthria and dysphagia. He had

exertional dyspnea and used CPAP at night for obstructive apnea. *Results:* FVC was 47% predicted. Initial phrenic NCS showed a normal response on the right but no response on the left, making him ineligible for DP. Diaphragm function was further assessed with DU. This showed normal thickening with inspiration bilaterally. The DU result prompted repeating the right phrenic NCS which then showed a normal response. He successfully completed surgical implantation of diaphragm leads for DP. At surgery both diaphragms showed good responses to electrical stimulation. *Conclusions:* Phrenic NCS can be technically challenging and yield a false positive (absent) result. In this patient, DU indicated good diaphragm function, which prompted repeating phrenic NCS. The normal phrenic NCS allowed the patient to pursue DP.

NEUROIMAGING

P.079

Brain Magnetic Resonance Imaging metallic susceptibility artifacts post cardiac surgery in children

A Alanezi (London)* C Campbell (London) A Andrade (London)

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Background: Metallic susceptibility artifact (MSA) on brain MRI has been described rarely in adult population as an incidental finding in patients undergone cardiac surgery, catheterization or prosthetic heart valve, but has not been described before in the pediatric population. Here we present two pediatric cases with MSA on brain MRI post-cardiac surgery.

Case Series

Patient1: 13-month-old girl with Transposition of great arteries, aortic coarctation and multiple VSDs, who twice had open heart surgery requiring cardiac bypass. She presented with bilateral lower extremity paralysis secondary to spinal cord embolic infarction, Brain MRI showed an incidental finding of hundreds of diffuse foci of brain MSA.

Patient2: 5-year-old boy with Trisomy21, Atrial-ventricular septal defect repaired at age one year. His brain MRI showed incidental finding of multiple, widespread foci of MSA during investigation for gait disturbance.

Discussion: Here we present two pediatric patients post-cardiac surgery, found to have multiple scattered MSA in cerebral and cerebellar hemispheres and brain stem. Presumably, these are secondary to metallic microthrombi during cardiac surgery, however, neither had prosthetic material. Metallic microthrombi may be related to cardio-pulmonary bypass. Pediatric cardiac surgery patients should be studied, to understand the significance of these lesions and further distinguish the cause and association of these findings.