

The Neurodiagnostic Journal

Volume 54, Number 4 • December 2014

Reinventing ABRET

Lisa Lovely, R. EEG/EP T., CNIM, CLTM, MS; Erik Padilla, R. EEG/EP T., CNIM, CLTM, BS; Janice Walbert, CAE, R. EEG/EP T., FASET, FACNS, BA

Early Detection of Pedicle Screw-Related Spinal Cord Injury by Continuous Intraoperative Neurophysiological Monitoring (IONM)

Faisal R. Jahangiri, M.D., CNIM, D.ABNM, FASNMM; Muhammad Sheryar, MBBS; Yaser Al Behairy, M.D., FRCSC

Long-Term Outcome Prediction after Traumatic Brain Injury using Early Somatosensory and Acoustic Evoked Potentials: Analysis of the Predictive Value of the Different Single Components of the Potentials

M.H. Morgalla, M.D., Ph.D.; M. Tatagiba, M.D., Ph.D.

ASET 55th Annual Conference Proceedings

Waveform Window #28: EEG Correlates of Clinical Conditions

Tony Chambers, R. EEG T., RPSGT, RST



Official Journal of ASET – The Neurodiagnostic Society

The Utility of Transcranial Motor Evoked Potentials (MEPs) for Intraoperative Monitoring of Femoral Nerve Function in Retroperitoneal Transpsoas Access to the Spine

Jon Block DC, CNIM¹; Justin Silverstein, MS, CNIM² (¹ION Intraoperative Neurophysiology, Walnut Creek, California; ²Spine Medical Services, PLLC, Commack, New York)

The authors propose a theory and method for the utilization of Transcranial Electrical Motor Evoked Potentials (MEPs) for intraoperative monitoring of femoral nerve function to protect against iatrogenic injury during retroperitoneal transpsoas surgical access to the lumbar spine. This method may be particularly useful at the L4-5 disc level where the fully formed trunk of the femoral nerve is likely to be encountered and may be compromised by tissue dilation and retraction during access to the mid-disc space. Detecting and alerting the surgeon to a degradation of the evoked potential responses may provide an early warning of impending femoral nerve damage, which may be averted by prompt countermeasures. The authors postulate that the adoption of MEPs as part of a comprehensive multimodal neurophysiological monitoring paradigm along with saphenous nerve SSEPs may significantly reduce the incidence of femoral nerve injury in lateral lumbar interbody fusions (LLIFs). The advantages and limitations of motor evoked potentials must be well understood in order to interpret any intraoperative changes. Research is currently ongoing and more study of the utility of multimodal intraoperative neuromonitoring for transpsoas access to the spine is needed.