A Short Note on Intraoperative Neurophysiological Monitoring on Neurological Outcomes

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Abstract

Transcranial engine evoked possibilities, somatosensory evoked possibilities, and free run electromyography were utilized for IONM with caution models. Patient record were audits with preoperative and postoperative neurological result estimations; Frankel Grading, McCormick Score, Karnofsky Performance Status (KPS) Scale, American Spinal Injury Association (ASIA) Grading, and The Japanese Orthopedic Association (JOA) Score at 1, 6, 12, and 24 months after surgery 104 patients were operated on in total. 77.4% activities were utilized IONM. 70.2 and 16.7% of tumors were found in the intradural extramedullary (IDEM) space, respectively. All follow-up time in the IONM group showed a statistically significant improvement (p-value 0.050) between preoperative and postoperative neurological outcomes. Alarm IONM had a sensitivity of 66.7 percent and a specifcity of 88.7 percent, respectively, for predicting early worsening of the neurological outcome following surgery. Surgery for IDEM spinal cord tumors is linked to a favorable neurological outcome (OR 0.187, 95% CI 0.05–0.71); p-value of 0.014 The use of IONM in intradural spinal tumor surgery resulted in a statistically significant improvement in neurological outcomes and a decrease in neurological defcits following the procedure. With fair sensitivity and high specifcity, IONM can identify neurological defcits and poor outcomes following surgery [1]. In particular, using IONM in IDEM results in better neurological outcomes after surgery.

Introduction

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alarm IONM patients, only 1.79 percent had false negative results that indicated an early worsening of the neurological outcome following surgery. Alarm IONM had a sensitivity of 66.7 percent and a speci city of 88.7 percent, respectively, for predicting early worsening of the neurological outcome following surgery. e negative predictive value (NPV) was 98.2 percent, while the positive predictive value (PPV) was 22.2 percent. e term "true positive" refers to the alarm IONM correctly indicating a worsening neurological outcome following surgery. True negative refers to non-alarm IONM, which correctly indicates a favorable neurological outcome following surgery. e alarm IONM incorrectly indicates a particular condition is referred to as a false positive. Non-alarm IONM incorrectly indicates a particular condition as a false negative. When alarm IONM is used, the probability of a worsening neurological outcome postoperatively is referred to as PPV (5.90 times). In non-alarm IONM, the likelihood of a favorable neurological outcome a er surgery is referred to as the NPV (0.38 times) [2].

MEP were developed to better characterize the integrity of the corticospinal tracts. In the 1970s, SSEP were developed as an indirect method of monitoring the ventral corticospinal tracts through dorsal column integrity. However, several studies reported its limitation regarding postoperative neurological de cit in normal SSEP. EMG

is a real-time monitoring of nerve root function, particularly during instrumentation and manipulation during surgery. Due to the e ectiveness of replacing the limitations of individual monitoring, multimodality neurophysiological monitoring has become a standard procedure for a variety of spinal procedures. In addition, it was useful for predicting postoperative neurological de cit and recovery. Spinal deformity surgery has utilized a combination of MEP and SSEP monitoring. In particular, the addition of free running EMG and triggered EMG can improve the e ciency with which nerve root injuries can be detected. Correlations between IONM changes and postoperative neurological outcomes indicate that alarm IONM contributed to postoperative neurological poor outcome or neurological de cit [7-9]. It may assist in detecting early neural injury at a reversible stage, preventing poor postoperative outcomes. On the other hand, intraoperative recovery of the IONM modality can indicate a favorable postoperative outcome. In addition, it aids in improving the assessment of neural function, thereby guiding intraoperative decision-making regarding what should be done at that time for the management of alarm IONM in that position.

In our review we utilized a few estimations (Frankel Grade, JOA Score, ASIA Score, McCormick Score, KPS Scale) to track down the

8. Novakova L, Zetterberg H, Sundström P, Axelsson M, Khademi M, et al. (2017) Monitoring disease activity in multiple sclerosis using serum neurofilament light protein. Neurol 89: 2230-2237.

9. Jakimovski D, Kuhle J, Ramanathan M, Barro C, Tomic D, et al. (2019) Serum neurofilament light chain levels associations with gray matter pathology: a 5-year longitudinal study. Ann Clin Transl Neurol 6: 1757-1770.

10. Siller N, Kuhle J, Muthuraman M, Barro C, Uphaus T, et al. (2019) Serum neurofilament light chain is a biomarker of acute and chronic neuronal damage in early multiple sclerosis. Mult Scler Houndmills Basingstoke Engl 25: 678-686.