

Transabdominal Motor Action Potentials (Tamap) for Lateral Approach Neuromonitoring in Spine Surgery: Novel Case Series of 51 Patients in Proof-of-Concept Demonstration

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Abstract

Background: Risk of nerve injury is well-documented in lateral approach spine surgery. Advanced intraoperative neuromonitoring techniques may improve false positive and false negative rates of traditional methods to decrease complications. **Objective:** Determine the safety, sensitivity, and methodological validity of transabdominal motor action potentials (TaMAP) recordings in lateral access spine surgery. **Methods:** Institutional Review Board approval was obtained for the prospective collection of patient data. Cathode and anode leads were placed on the posterior and anterior surfaces of back and abdomen, and motor responses were recorded by subdermal needle electrodes in 6 target muscles. Voltage and stimulation amplitude were measured at preoperative baseline, postoperative, and new baseline time points, and compared for muscle groups relevant to symptoms and operative approach.

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