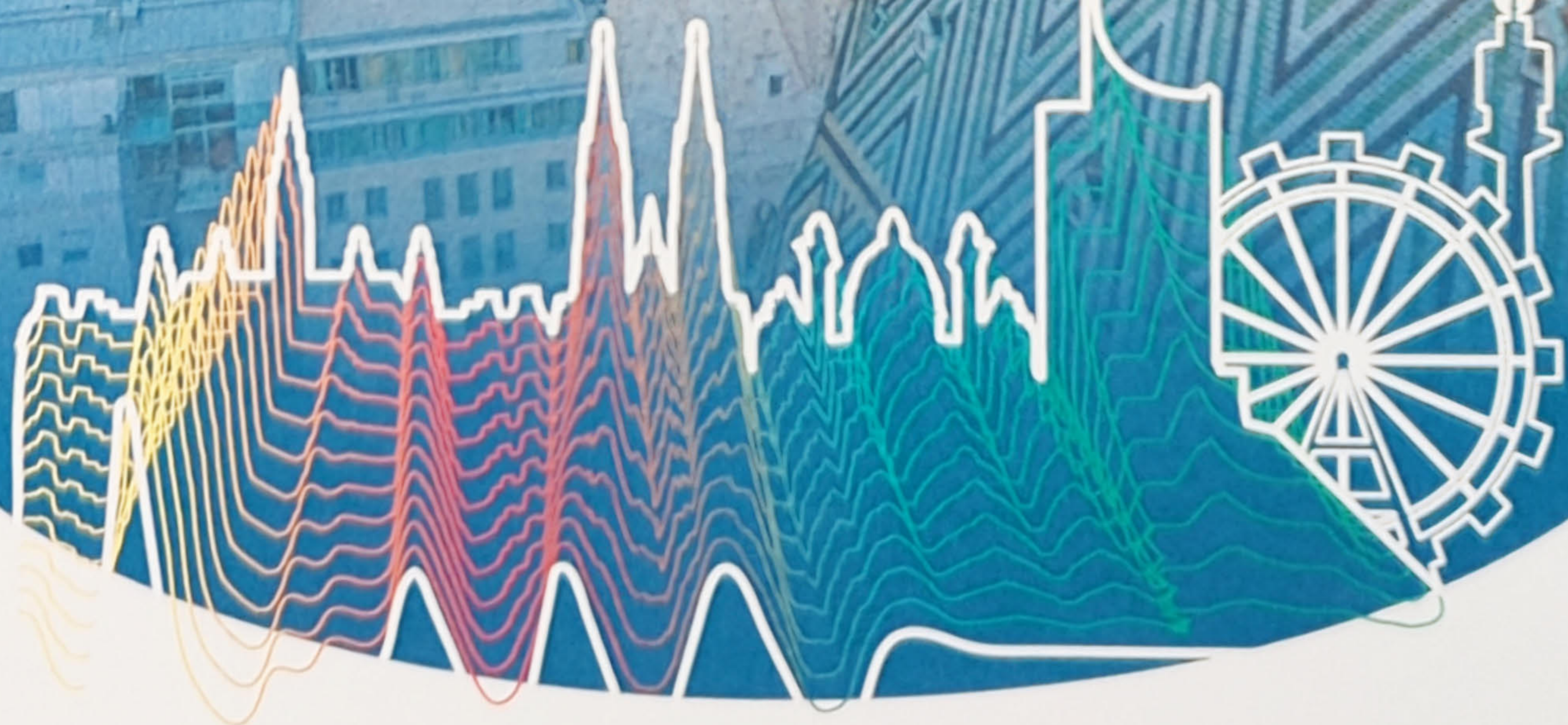


7TH CONGRESS OF THE
INTERNATIONAL SOCIETY
OF INTRAOPERATIVE
NEUROPHYSIOLOGY AND
EDUCATIONAL COURSE

ISIN
2019
VIENNA

ABSTRACT BOOK
ISIN 2019 Vienna-Austria
October 28 – November 2, 2019



Congress president:
Dr. Klaus Novak

Congress Office:
Vienna Medical Academy
1090 Vienna, Austria, Alser Straße 4
T: +43 1 405 1383 39 • F: +43 1 405 1383 9 39
Oscar Pacheco Martinez • isin2019@medacad.org • www.medacad.org



isin2019vienna.org

Spearman Correlation and ROC Analysis

	Spearman correlation coefficient	Area under the curve	Sensitivity	Specificity
D1				
bfPDAMP_DNS	0.55 **	0.86	86%	83%
bfMT_inc	0.654 ***	0.90	86%	87%
bfAMP_red	0.18	0.66	71%	70%
D7				
bfPDAMP_DNS	0.52 **	0.80	83%	75%
bfMT_inc	0.644 ***	0.79	83%	71%
bfAMP_red	0.22	0.59	50%	71%
3M				
bfPDAMP_DNS	0.28	0.73	100%	86%
bfMT_inc	0.22	0.91	100%	86%
bfAMP_red	0.12	0.61	50%	100%

S09.1

Utility of ultrasound imaging in the placement of intraorbital needle electrodes for external ocular motor nerves monitoring

M. Milev, T. Spiriev, L. Laleva, S. Stoyanov, V. Nakov;

Department of Neurosurgery, Acibadem City Clinic Tokuda Hospital, Sofia, Bulgaria.

Background: The intraoperative electrophysiological identification and localization of oculomotor, trochlear and abducent nerves could provide additional safety for avoidance of post-operative gaze disturbances in skull base surgery. The placement of electrodes inside or near the extraocular muscles could be challenging due to the delicate intraorbital anatomy. In this study we examined the value of ultrasound imaging as aid in the placement of extraocular muscle needle electrodes.

Materials and methods: Electromyographic recordings were acquired with bipolar hook needle electrodes. Electrodes were positioned sequentially by four of the authors in different operative cases. The location and trajectory of the electrode in the intraorbital tissues were visualized by B-mode ultrasound.

Results: Intraoperative monitoring of the external ocular motor nerves was employed in 13 neurosurgical interventions. In 3 cases the placement of electrodes was performed with refer-

ence to anatomic landmarks and in 10 - under ultrasound guidance. For all members of the team a single procedure was sufficient to familiarize with and adopt the technique. Optimal sonographic windows for visualization of the muscles and surrounding tissues were defined. There were no cases of malpositioning of electrodes when the electrophysiological findings were cross-referenced with direct intraprocedural identification of the nerves. A single serious complication (arterial bleeding from temporo-orbital anastomosing artery) occurred in one case with needle placement without ultrasound guidance.

Conclusions: Ultrasound-guided positioning of needle electrodes could be an efficient supportive technique in cases with external ocular motor nerves monitoring and is easily implemented in neurosurgical practice with reduction of associated electrode placement morbidity.

S09.2

New method to record intraoperative motor evoked potentials of the corticobulbar tract in extraocular muscles

A. Climent Perin, I. Ayet Roger, S. Candela Canto, P. Puerta Roldan, A. Guillen Quesada, J. Rumia Arboix, E. Ferrer Rodriguez;

Sant Joan de Deu Barcelona, children's Hospital, Barcelona, Spain.

Background: The intraoperative neuromonitoring (IONM) of oculomotor function is not frequently used due to the technical difficulties of appropriately placing electrodes in the extraocular muscles (EOM). Nevertheless, the cranial nerves and their nuclei risk severe injury in many surgical procedures and should be monitored when necessary. We present a new method for recording corticobulbar motor evoked potentials (Co-MEP) in the extraocular muscles (EOM): medial rectus muscle (MRM) (innervated by oculomotor nerve (CN III) and lateral rectus muscle (LRM) innervated by the abducens nerve (CN VI)

Materials and methods: We studied 13 eyes in eight patients that underwent different neurosurgery procedures with multimodal IONM under general anesthesia (TIVA). Transcranial electrical stimulation (TES) over C3/Cz for the right side and C4/Cz for the left side with a short train of 3 to 5 stimuli to elicit Co-MEP was used. Two braided hook wire electrodes were placed in the EOM in sterile conditions by an ophthalmologist.

Results: Co-MEP in the EOM were elicited in all patients. Threshold to elicit the MRM Co-MEP ranged from 90mA to 140mA. For the LRM it was between 70mA and 165mA. Latency in MRM ranged from 13.4ms to 15.9ms and 13.4ms to 15.1ms in the LRM. Amplitudes in the MRM ranged between 23uV and 40.9uV; and in LRM they ranged between 18.9uV and 38.6uV.

Conclusions: This method is able to record reliable and accurate neurophysiological markers to continuously monitor under general anesthesia the functional integrity of corticobulbar pathways, oculomotor and abducens nucleus as well as its cranial nerves.