and the specificity and sensitivity of different criteria remain undetermined. Our goal was to establish the most reliable criteria to interpret facial MEP changes in the light of clinical outcome.

Materials and methods: In the past four years 100 consecutive patients were monitored with facial MEP (transcranial electrical stimulation at C3/Cz and C4/Cz, train of 4 stimuli, 0.5 ms duration, intensity up to 150 mA) during surgery for vestibular schwannomas. Differences in facial MEP amplitude at the end of the surgery, as compared to the opening baselines, where analyzed. Three different cut-offs were selected: 30%, 50% and 80% amplitude drop. The clinical outcome was assessed using the change in the House-Brackmann (HB) grade at discharge from hospital, 6 months and 1 year after surgery, in comparison to the pre-operative grade. It was considered a good outcome a HB worsening of no more than one grade.

Results: Data were available for the analyses in 89 patients at discharge from hospital, 74 patients at 6 months, and 64 patients at the one year follow-up. The 30% amplitude drop criteria yielded a 51% sensitivity and 82% specificity at discharge from hospital, 58% and 73%at 6 months and 63% and 71% at 1 year. The 50% amplitude drop criteria yielded a sensitivity of 39% and specificity of 94% at discharge, 58% and 87% at 6 months, and 63% and 83% at 1 year. Finally, the 80% amplitude drop criteria yielded 21% sensitivity and 96% specificity at discharge, 29% and 94% at 6 months, and 36% and 90% at 1 year.

Discussion and conclusion: While a 80% drop criteria appears too little sensitive, we observed no changes in sensitivity using a 50% and 30% drop criteria at the long-term follow-up. Vice versa, specificity was significantly higher in the long term using a 50% drop than a 30% drop criteria. Therefore, we suggest to consider a 50% drop in facial MEP amplitude as the best criteria to interpret intraoperative changes.

P499
Value of neurophysiological intraoperative monitoring (IOM) of carotid endarterectomy. Our series

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Question: The carotid endarterectomy (CEA) is an effective surgical technique but during this act could appear several neurological deficits in order to cross clamping or the insertion of an arterio-arterial shunt (AAS). The IOM has improved the cerebral functions control in these patients.

Methods: We present our series of patients undergoing CEA under general anesthesia, from February 2012 to October 2013, with monitoring of somatosensory evoked potentials after stimulation of bilateral median and tibial nerves (SSEPs) and motor evoked potentials elicited by transcranial electrical stimulation (tcMEPs). Criteria used for decision to insert and AAS were the reproducible decrement (>50%) of SSEPs amplitudes and/or the loss of tcMEPs.It is also evaluated the stump pressure (previous technique used to indicate the inserting of an AAS), using as criteria to insert the AAS a value <50 mmHg.We evaluate in our series if setting of AAS is necessary comparing IOM with stump pressure.

Results: We reviewed 45 patients. In 10 of them (22.2%) the stump pressure was<50 mmHg but in 7 of these patients (70%) there were no significative changes in IOM techniques and no shunt was placed. The remaining 3 patients (30%)had significative changes in SSEPs, so it was necessary to insert AAS.In the other 35 patients (77.78%) the stump pressure was>50 mmHg and just in 1 case (1.28%)there were significative changes in SSEPs, inserting AAS.None of the patients showed postoperative neurological deficits.

Conclusion: In our series we show utility of IOM in CEA to indicate properly the insertion of AAS, being better method than older techniques as stump pressure, avoiding new neurological deficits.

P500
Efficacy of intra-operative electrocorticography in terms of seizure outcomes in focal epilepsy

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Purpose: Intra-operative electrocorticography (ECoG) is a useful tool to guide surgical resection of both the lesion and epileptogenic zone (EZ). The success of surgey in respect of seizure control depends on accurate localisation and complete removal of the EZ. Although the outcome of epilepsy surgery becomes clear only after serial follow up, it has generally been accepted that incomplete removal of EZ as a main cause for early relapses, which ocurs in first 6 to 12 monhts after the operation. In this study, we evaluated the efficacy of ECoG on post-operative seizure outcomes in patients with focal epilepsy.

Methods and results: Fifthy-five focal epilepsy patients with various etiologies (mesial temporal sclerosis, cortical dysplasia, tumors, tuberculomas, cavernomas, non-specific changes) who had been surgically treated, were assessed. The recordings of ECoG were performed before and after the resections and repeated if needed. In terms of functional (eloquent) cortical areas some resections were not completed even if the existance of residual spiking. The relationship between the guided resection and seizure outcome was analysed. Additionally, the residual spikes after resection were assessed.

In this observational study, we found the main determinant of seizure freedom is underlying etiology. Although the numbers are small in respect to meaningful comparison between thegroups, the seizure recurrence mainly occured in grade-II or higher grade glial tumor patients. Especially in the cavernomas and cortical dysplasia group we had very high seizure free rates.

Conclusions: Sequencial ECoG recordings guied surgical resections has an additional beneficial effect on good seizure outcomes.

P501
Value of stimulus-triggered EMG of track vs screw for the detection of lumbar radiculopathy in scoliosis surgery

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Question: One of the complications in scoliosis surgery are radiculopathies due to pedicular screw malposition. Our aim is to analyze our cases of lumbar radiculopathies after scoliosis surgery, in which screw malposition was not detected by the usual neurophysiologic techniques.

Methods: We have studied 294 surgeries (6765 screws, 30% lumbar). Intraoperative monitoring (IOM) was performed with muscular MEPs after rTES, SEP and t-EMG of the screws. 8 patients presented lumbar radiculopathy after surgery, despite t-EMG values were normal, and screw malposition was confirmed by CT-scans. In the surgery to withdraw these screws, t-EMG was determined after stimulation of the depth and the middle part of the track.

Results: All of the malpositioned screws showed normal t-EMG thresholds after stimulating the screw. When stimulating the depth of the track, values were also normal, but stimulation in the middle of the track showed very low thresholds in most of the cases. All of the patients improved with the screws withdrawal.

Conclusion: Malpositioned lumbar screws are infrequent, but very symptomatic. t-EMG of the track improves the detection of these cases

P502
Motor evoked potential monitoring in very young patients

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Question: Motor evoked potential monitoring is a standard technique applied in spinal surgery of adult patients. The application of motor evoked potentials in patients under the age of one year is rarely reported and the feasibility of the method is a matter of debate. We have assessed the feasibility of monitoring muscle motor evoked potentials in infants undergoing spinal surgery.

Method: Intraoperative neurophysiological monitoring was applied in eleven infants using somatosensory and motor evoked potentials. Muscle motor evoked potentials were elicited using transcranial electrical stimulation applied via needle electrode placed in the scalp. Short trains of five to nine stimuli using an interstimulus interval of 4 milliseconds were used to generate limb muscle responses. Those responses were recorded without averaging from needle electrodes placed in the limb muscles.

Results: Muscle motor evoked potential could be elicited in all patients.