

activity was still recorded from the margins, further resection was performed. In terms of functional cortical areas some resections were not completed even if the existence of residual spiking. 11 patients have Class II or III seizure freedom and the remaining all patients have Class I seizure freedom.

Discussion: 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 the groups, the seizure recurrence mainly occurred in grade-II or higher-grade glial tumor patients. Especially in the mesial temporal sclerosis, cavernoma and cortical dysplasia group we had very high seizure free rates. Our results show that sequential ECoG recordings guided surgical resections has an additional beneficial effect on good seizure outcomes.

p0599

THE SPATIAL RELATION BETWEEN EARLY AND DELAYED RESPONSES EVOKED BY SINGLE PULSE ELECTRICAL STIMULATION IN PRE-SURGICAL EVALUATION OF EPILEPSY PATIENTS

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Purpose: Single pulse electrical stimulation (SPES) assists delineating epileptogenic tissue during long-term intracranial monitoring for pre-surgical evaluation. The SPES protocol consists of systematic stimulation of neighboring electrode pairs and analysis of responses in all other electrodes. SPES evokes early (ER) and delayed (DR) responses. DRs occur in epileptogenic tissue, but are stochastic: 10 stimuli are needed to reliably establish a response. ERs occur in healthy and diseased tissue and require only a single stimulus. We studied the spatial relation between ERs and DRs. If it is possible to predict DRs from ERs, this might improve the efficiency of SPES.

Method: Data of one patient with TLE recorded in 84 grid electrodes were used. We counted per electrode the number of stimulus pairs that evoked ERs (eER) and per stimulus pair the number of ERs that were evoked (sER). Similarly, for DRs, eDR and sDR were determined. Also, per electrode we counted the number of stimulus pairs that evoked both ERs and DRs, eERDR and vice versa for sERDR. We selected electrodes with eER or sER > median as eER50 or sER50. We tested whether values for eDR and sDR were significantly more in the eER50 and sER50 groups. Finally we tested whether the ratios eERDR/eDR and sERDR/sDR differed significantly from 0.5.

Results: eER values ranged from 0 to 41, median=8; sER:3-27, median=17; eDR:0-28, median=17 and sDR:0-26, median=9. eDR and sDR values were higher in eER50 ($p < 0.001$) and sER50 ($p = 0.1$) electrodes. The ratios of eERDR/eDR and sERDR/sDR ranged from 0 to 1, median=0.24 and 0–0.64, median=0.25 respectively, with the average significantly lower than 0.5 ($p < 0.001$).

Conclusion: The correlation between eER50 electrodes and high values of eDR indicates that ERs and DRs seem to occur within the same network. The low ratio eERDR/eDR suggests that ERs and DRs are not directly related. We will analyze more patients to confirm these findings.

p0600

LONG-TERM OUTCOME AFTER HEMISPHERECTOMY IN CHILDHOOD

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Purpose: To assess cognitive, behavioural and psychosocial outcome as well as health-related quality of life (HrQoL) at least 5 years after hemispherectomy in childhood.

Method: We performed a countrywide cohort study of 31 patients who underwent hemispherectomy between 1994 and 2009, in whom we had a semi-structured interview with parents, assessed cognitive outcome (using intelligence or developmental scales), screened for behavioural and psychosocial problems [parents rated the Strength and Difficulties Questionnaire (SDQ)], and addressed HrQoL [Euroqol-5D, a questionnaire that inventories overall and specific HrQoL (mobility, self-care, usual activities, pain/discomfort and anxiety/depression)].

Results: Exploration of the data compelled the formation of three groups: a) 9 children [median age 9.7 years (0.25 at epilepsy onset, 1.4 at hemispherectomy)] who could not be assessed with age-appropriate instruments, b) 14 school-age children [all younger than 18 years (median age 0.3 at epilepsy onset and 2.6 at hemispherectomy); median IQ 62], and c) 8 young adults [18 years or older (median age at epilepsy onset 1.2 and at hemispherectomy 9.9); median IQ 63]. All children in group a) were severely mentally retarded and almost totally dependent on others in activities of daily living. This group had the highest proportions of preoperative contralateral MRI-abnormalities, postoperative seizure recurrence and behavioural and psychosocial problems, compared to both other groups. Most parents rated overall HrQoL positively. In group a), overall HrQoL was better in seizure-free participants than in those with seizure recurrence. As for specific HrQoL, parents perceived most problems with respect to self-care, daily activities and mobility. Most important perceived changes after the hemispherectomy were according to parents' seizure freedom and/or restart of development.

Conclusion: Functional long-term outcome of childhood hemispherectomy is best described in terms of a broad spectrum, varying from almost total dependence to more or less unproblematic cognitive, behavioural and psychosocial functioning.

p0602

COULD HISTOPATHOLOGICAL FINDINGS IN SURGICALLY TREATED MESIAL TEMPORAL LOBE EPILEPSY INFLUENCE THE SEIZURE OUTCOME?

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Purpose: Surgery represents the treatment of choice for mesio-temporal lobe (MTLE) drug resistant epilepsy. Patients undergo extensive pre-surgical evaluation for surgical planning and outcome prevision. Evidence of mesial temporal sclerosis (MTS) is considered a prognostic indicator of good surgical outcome. Several studies identified other pre-surgical favorable prognostic factors that will be discussed. Despite of electroclinical, neuroradiological and neuropsychological concordance and positive prognostic factors, post-surgical seizures recurrences may occur. We suggest that recent neuropathological classification according to Blumke et Al of MTS (type 1 and type 2) and granule cell pathology (GCP, 3 different patterns) could represent another predict-