Surgical Treatment of Mesiotemporal Lobe Epilepsy: Which Approach is Favorable?

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BACKGROUND
Mesiotemporal lobe epilepsy is one of the most frequent causes for pharmacoresistant epilepsy. Different surgical approaches to the mesiotemporal area are used.

OBJECTIVE
To analyze epileptological and neuropsychological results as well as complications of different surgical strategies.

METHODS
This retrospective study is based on a consecutive series of 458 patients all harboring pharmacoresistant mesiotemporal lobe epilepsy. Following procedures were performed: standard anterior temporal lobectomy, anterior temporal or key-hole resection, extended lesionectomy, and transsylvian and subtemporal selective amygdalohippocampectomy. Postoperative outcome was evaluated according to different surgical procedures.

RESULTS
Overall, 1 yr after surgery 315 of 432 patients (72.9%) were classified Engel I; in particular, 72.8% were seizure-free after anterior temporal lobectomy, 76.9% after key-hole resection, 84.4% after extended lesionectomy, 70.3% after transylvian selective amygdalohippocampectomy, and 59.1% after subtemporal selective amygdalohippocampectomy. No significant differences in seizure outcome were found between different resective procedures, neither in short-term nor long-term follow-up. There was no perioperative mortality. Permanent morbidity was encountered in 4.4%. There were no significant differences in complications between different resection types. In the majority of patients, selective attention improved following surgery. Patients after left-sided operations performed significantly worse regarding verbal memory as compared to right-sided procedures. However, surgical approach had no significant effect on memory outcome.

CONCLUSION
Different surgical approaches for mesiotemporal epilepsy analyzed resulted in similar epileptological, neuropsychological results, and complication rates. Therefore, the approach for the individual patient does not only depend on the specific localization of the epileptogenic area, but also on the experience of the surgeon.

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