

Long-term Prognosis in Epilepsy Patients after Surgical Therapy



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The benefit and low morbidity of epilepsy surgery are well established for patients with medically refractory epilepsy. Epilepsy surgery is an accepted treatment option in patients with medically refractory focal epilepsy. Despite various advances in recording and localization noninvasive and invasive techniques, the seizure outcome following surgical resection remains suboptimal in a significant number of patients. Seizure-freedom rates have been reported to be 44% to 80% after temporal lobe epilepsy surgery and 15% to 65% after surgery for extratemporal lobe epilepsy. Seizure outcomes after surgery depend on various factors including location of seizure focus, pathologic substrates, and the extent of the pathology. The most important predictors for temporal lobectomy are hippocampal atrophy, and absence of preoperative generalized tonic clonic seizures. Also some of these apparent discrepancies may be explained by varying follow-up durations among the distinct study cohorts. A detailed analysis of the longitudinal seizure outcomes reveals that, regardless of the type of surgery, half of all patients with recurrent postoperative seizures experience their initial seizure recurrence within the 2-6 months immediately following surgery, whereas the remaining half of the failures occur during the next 10-15 years. Late seizure recurrence occurs in 15-20% of patients who had the initial seizure remission at 5-10 years after surgery. It is more common in hippocampal sclerosis and cortical dysplasia. Running down phenomenon occurs in 5-20% of temporal lobe epilepsy surgery patients. These long-term outcome data suggests two major temporal patterns of seizure recurrence (early vs. late) that implicate the following two different mechanisms for seizure recurrence: (1) a failure to either define/resect the epileptogenic zone, and (2) the nonstatic nature of epilepsy as a disease through the persistence of proepileptic cortical pathology. Patients on monotherapy who are seizure-free for one or preferably two years can be offered the opportunity to withdraw medication. Seizure recurrence after antiepileptic drug discontinuation occurs in about 35% of patients. After 3 years of antiepileptic drug discontinuation, its rate seems to be stationary.

Key Words: Epilepsy; Epilepsy surgery; Long-term prognosis; Seizure remission; AED discontinuation

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