

## DO IMMEDIATE POSTOPERATIVE SEIZURES PREDICT SURGICAL FAILURE AFTER FRONTAL LOBE EPILEPSY SURGERY?

### Acute Postoperative Seizures after Frontal Lobe Cortical Resection for Intractable Partial Epilepsy

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**PURPOSE:** To evaluate the incidence and prognostic importance of acute postoperative seizures (APOSs) occurring in the first week after a focal corticectomy in patients with partial epilepsy of frontal lobe origin.

**METHODS:** We retrospectively evaluated 65 patients who underwent a frontal lobe cortical resection for intractable partial epilepsy between April 1987 and December 2000. All patients were followed up for a minimum of 1 year after surgery.

**RESULTS:** APOSs occurred in 17 (26%) patients. None of the following factors was shown to be significantly associated with the occurrence of APOSs: gender, duration of epilepsy, etiology for seizure disorder, use of subdural or depth electrodes, surgical pathology, or postoperative risk factor for seizures. Patients with APOSs were older at seizure onset and at the time of surgery ( $P = 0.003$  and  $P = 0.05$ , respectively). At last follow-up, patients who had APOSs had a seizure-free outcome similar to that of individuals without APOSs (47.1% vs. 50.0%;  $P = 0.77$ ). Patients with APOSs appeared less likely to have a favorable outcome [i.e., fewer than three seizures per year and >95% decrease in seizure activity (58.8% vs. 70.8%;  $P = 0.35$ )]. This result may not have reached statistical significance because of the sample size. No evidence suggested that precipitating factors or the timing of APOSs was an important prognostic factor.

**CONCLUSIONS:** The presence of APOSs after frontal lobe surgery for intractable epilepsy does not preclude a significant reduction in seizure tendency. These findings may be useful in counseling patients who undergo surgical treatment for frontal lobe epilepsy.

### COMMENTARY

Acute postoperative seizures (APOSs) occurring immediately after epilepsy surgery usually are of grave concern to patients and their families, suggesting to them that surgery has failed. However, it has long been recognized, and now well established, that these seizures do not preclude a seizure-free outcome after temporal lobectomy. This is particularly true when APOSs are semiologically different from the patient's habitual seizures. These "neighborhood seizures" are often hemifacial motor or secondarily generalized, unlike the habitual complex partial "psychomotor" seizures. For example, Malla et al. (1), who found APOSs in 20% of patients after temporal lobectomy, reported an excellent outcome in 75% of patients with focal motor or generalized tonic-clonic APOSs (different from the habitual complex partial seizures) but in only 14.3% of patients with APOSs similar to preoperative seizures. Much less was known about APOSs after extratemporal epilepsy surgery before the current study by Tigaran and colleagues.

This retrospective study addresses the significance of APOSs in 65 patients with frontal lobe epilepsy operated on in a single institution. The incidence of APOSs in this group was only slightly higher than occurs after temporal resection. The authors found that patients with APOSs were more likely to be older at seizure onset and also older at time of surgery than were patients without APOSs. The reason for this is not evident. A seizure-free outcome was not less likely in the presence of APOSs. However, when the authors examined the chance of a favorable outcome (including seizure freedom and rare seizures), APOSs were associated with a nonsignificant reduction in the chance of a favorable outcome. The difference could potentially have been significant with a greater number of subjects, but fewer patients undergo frontal resections for epilepsy, hence a large series is difficult to accumulate in a single center. The authors found it difficult to assess the similarity between APOSs and habitual seizures. APOSs are often not observed by staff members able to classify them correctly. It was clear that APOSs were characteristic of preoperative seizures in three patients. However, the seizure outcome in these three patients was not specifically reported. This issue is worth pursuing in future studies.



This study provides a valuable contribution to the epilepsy surgery literature that will help in the counseling of patients having frontal resections for intractable epilepsy.

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## References

1. Malla BR, O'Brien TJ, Cascino GD, So EL, Radhakrishnan K, Silbert P, Marsh WR. Acute postoperative seizures following anterior temporal lobectomy for intractable partial epilepsy. *J Neurosurg* 1998;89:177-182.