



PSYCHIATRY PROBLEMS AFTER EPILEPSY SURGERY

Mood Disturbance Before and After Seizure Surgery: A Comparison of Temporal and Extratemporal Resections

Wrench J, Wilson SJ, Bladin PF

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PURPOSE: Mood disturbance is a common comorbid condition of temporal lobe epilepsy before and after seizure surgery. Few studies have examined mood disturbance in patients undergoing resections outside the temporal lobe (extratemporal resections). This study aimed to compare the early, postoperative evolution of mood disturbance in temporal and extratemporal lobe epilepsy patients to examine the effect of site of surgical resection on mood outcome.

METHODS: The study used a longitudinal design and was qualitative in nature. Sixty seizure surgery patients (43 temporal resections, 17 extratemporal resections) were assessed before surgery and at discharge, 1 month, and 3 months after surgery, by using the *Austin CEP Interview*. Psychosocial adjustment, psychiatric difficulties, including depression and anxiety, and seizure frequency were assessed.

RESULTS: Before surgery, both temporal and extratemporal patients had significant psychiatric histories with sim-

ilarly high rates of depression (33 and 53%, respectively) and anxiety (23 and 18%, respectively). After surgery, significantly more temporal patients were seizure free at each of the reviews compared with extratemporal patients. Temporal patients also reported significantly higher levels of depression (26%), anxiety (42%), and psychosocial adjustment difficulties (64%) at the 1-month review than did extratemporal patients. Mood disturbance was significantly associated with adjustment difficulties in both groups but was not related to seizure outcome at any review period.

CONCLUSIONS: A general increase in mood disturbance was evident after surgery, particularly in temporal resection patients at the 1-month review. Site of surgery and psychosocial adjustment showed significant associations with postoperative mood disturbance, supporting the role of both neurobiologic and psychosocial factors in mood outcome.

COMMENTARY

Patients with chronic intractable epilepsy have a higher incidence of psychiatric disorders than do the general population or epilepsy patients with good seizure control (1). Epilepsy surgery has been associated with improved psychosocial adjustment (2). However, psychiatric complications have been reported to occur postoperatively (3–5). The incidence and factors contributing to the appearance of postoperative psychiatric problems as well as the relative risk of such complications for different sites of resection remain uncertain. Wrench et al. performed a longitudinal-design study, extending from the preoperative period to 3 months after surgery, with patients undergoing temporal ($n = 43$) or extratemporal (12 frontal, three occipital, and two cingulate) epilepsy surgery. Preoperatively, 57% of the patients had a history of psychiatric problems, with no difference between the two surgery groups. After surgery, dif-

ferential effects were seen across the surgery groups. Whereas the extratemporal group had a reduction in psychopathology during the first 3 postoperative months, the temporal lobectomy group had comparatively higher rates of psychopathology, including depression, anxiety, and psychosocial adjustment difficulties after surgery, especially at 1 month after surgery. By 3 postoperative months, the rates of psychopathology and mood disorders returned to preoperative levels for the temporal lobectomy patients.

The observations in the present study are consistent with prior studies (3–5) that have demonstrated an increase in psychiatric symptoms in the early postoperative period. These problems decreased, with time, to levels below those before surgery for most patients, although some patients required psychotropic medications. Psychiatric problems are not usually a contraindication to surgery, but require consideration.

The major new finding of the study of Wrench et al. is the difference between the temporal and extratemporal groups. Generally, patients who fail to become seizure free after epilepsy surgery are more likely to have postoperative psychiatric complications. However, the extratemporal group in the present study experienced fewer postoperative psychiatric problems than the temporal group, despite poorer seizure outcome. One might postulate that patients who became seizure free were more likely to experience psychiatric problems as a result of forced normalization—a controversial concept that maintains that reduced seizures and improved EEG can be associated with psychiatric deterioration. However, no association with seizure outcome was found across the entire sample in the present study. Thus it appears that the group differences may be due to neurobiologic factors that are specific to the temporal lobe. The authors postulate that the “removal, deafferentation, or disruption of limbic system structures” mediate this effect.

Left/right brain differences in modulation of mood have been reported, but no differences in pre- or postoperative mood disturbances were found between patients undergoing left-sided versus right-sided resections. However, the small sample sizes, lack of data on cerebral language dominance, and cerebral reorganization from early brain insults could have obscured left/right brain differences.

The study by Wrench et al. highlights the importance of attending to psychiatric issues in patients undergoing epilepsy surgery. It provides new information but leaves many questions unanswered. The authors point out that their study was “qualitative” and that “future quantitative research” is needed to confirm the psychiatric differences between temporal and

extratemporal resections, especially given the relatively small sample size of the extratemporal group. Prospective studies with larger samples and longer postoperative follow-up durations are needed to address a variety of issues related to postoperative psychiatric problems, which appear to be multifactorial. It is unclear whether psychotropic agents, including certain antiepileptic drugs, might ameliorate postoperative complications if begun before surgery. Further, the role and effectiveness of preoperative and postoperative psychological counseling has not been determined. Finally, research that delineates the specific underlying mechanisms of the observed psychiatric symptoms could have wide-ranging implications.

by *Kimford Meador, M.D.*

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