

## Outcome after temporal lobectomy for hippocampal sclerosis: Chulalongkorn Comprehensive Epilepsy Program experiences

Teeradej SRIKIJVILAIKUL, Krishanapundha BUNYARATTAVEJ, \*Tayard DEESUDCHIT, \*\*Supatporn TEPMONGKOL, \*\*Sukalaya LERDLUM, \*\*\*Chaichon LOCHARERNKUL

*Division of Neurosurgery, \*Department of Pediatrics, \*\*Department of Radiology, \*\*\*Division of Neurology, King Chulalongkorn Memorial Hospital, Bangkok, Thailand.*

**Objective:** Temporal lobectomy is the most commonly surgical procedure for the treatment of drug-resistant epilepsy. The outcome has gradually improved in the past decade with seizure free outcome of 60-90% in temporal lobe epilepsy.<sup>1</sup> In Thailand, epilepsy surgery has recently recognized as an effective treatment for drug-resistant epilepsy but there are few epilepsy surgery centers in Thailand performing epilepsy surgery. The purpose is to report our experience and outcome after temporal lobectomy for hippocampal sclerosis in a Thai tertiary epilepsy center.

**Methods:** We retrospectively studied drug-resistant mesial temporal lobe epilepsy patients who underwent surgery with pathological verified HS between 1997-2003. All patients underwent 24-hr video EEG monitoring, and magnetic resonance imaging (MRI). MRI protocol included T1-weighted, T2-weighted, and fluid attenuated inversion recovery (FLAIR) studies. Single photon emission tomography (SPECT) and intracarotid amytal test (WADA) were performed in selected cases. All patients who underwent surgery had concordant data including semiology, ictal and interictal-EEG and/or SPECT. MRI showed unilateral hippocampal sclerosis with increased signal on FLAIR in all patients. Standard temporal lobectomy was performed in all cases. The procedure was performed under general anesthesia. The surgery involved resection of anterior temporal lobe and amygdalohippocampectomy. Outcomes were classified according to Engel's classification<sup>2</sup>: Class I, patients who were completely seizure free, had auras only, or had convulsions with drug withdrawal only; Class II, rare disabling seizures or nocturnal seizures only; Class III, worthwhile improvement; Class IV, no improvement.

**Results:** We identified 42 patients who underwent temporal lobectomy for mesial temporal lobe epilepsy with pathological verified hippocampal sclerosis. There were 21 males and 21 females. The age of seizure onset was 9 months-30 years (mean 11.9 years) and duration of epilepsy was 5-31 years (mean 19 years). Twenty-seven patients (64.3%) had history of febrile seizures. The age at surgery was 22-52 years (mean 31.5 years). WADA test was performed in 39 patients (92.9%) and SPECT was performed in 33 patients (78.6%). All patients who underwent surgery had concordant data. Surgery was performed on the right side in 21 patients and left side in 21 patients. The last available follow-up ranged from 8 months to 3.5 years (mean 1.6 years). Thirty-five patients had at least one-year follow-up. Of these, 34 patients (81.0%) had favorable outcome (Engel I, 31 patients and Engel II, 3 patients). One patient had worthwhile improvement (Engel III). Additional 7 patients were seizure free (Engel I) up to 8 months after surgery. Two seizure-free patients can stop medications after surgery. Altogether 38 patients (90.5%) were seizure-free. Postoperatively, 9 patients (21.4%) had asymptomatic superior quadrantanopia, 2 patients (4.8%) had meningial and bone flap infection, and one patient (2.4%) had transient nominal dysphasia.

**Conclusions:** Temporal lobectomy in drug-resistant patients with mesial temporal lobe epilepsy at our institution achieved good outcome with >90% of patients seizure-free, with low morbidity and mortality. Highly selected patients may account for the good surgical result. Public awareness of the successful surgery for epilepsy is important.

### References

1. Arruda F, Cendes F, Andermann F, *et al.* Mesial atrophy and outcome after amygdalohippocampectomy or temporal lobe removal. *Ann Neurol* 1996; 40: 446-50.
2. Engel J Jr, Van Ness PC, Rasmussen TB, *et al.* Outcome with respect to epileptic seizures. In: Engel J Jr, ed: Surgical treatment of the epilepsies. 2<sup>nd</sup> ed. New York: Raven Press, 1993: 609-21.