



Encephalocele and Surgical Resection in Temporal Lobe Epilepsy

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Introduction

Temporal lobe epilepsy (TLE) localized to encephalocele is a phenomenon infrequently described in literature and largely discovered intraoperatively. We provide a six patient, single-center series with TLE localized to a middle cranial fossa encephalocele. This abstract delineates individual patient characteristics and rationale for surgical approach.

Methods

Patients with temporal lobe epilepsy and concurrent temporal encephalocele were identified via patient database and retrospectively reviewed. Demographics, seizure semiology, electroencephalography, neuropsychiatric findings, and imaging were compiled from the comprehensive epilepsy evaluation performed at our institution.

Results

Six patients were identified with seizures localized to encephalocele discovered on preoperative MRI. Three had EEG lateralization to left, two to right, and one bitemporal. Five of six patients underwent craniotomy for epilepsy. One patient had vagal nerve stimulator. Two patients had standard right anterior temporal lobectomy with amygdalohippocampectomy. Three patients had left hippocampal and amygdala sparing temporal lobectomy with limited neocortical resection and repair of the cranial base defect. All patients undergoing craniotomy achieved Engel I seizure freedom at time of last follow up.

Patient Demographics and Outcomes

Age	Sex	Location	Lateralization	Surgery Performed	Result	Time to follow-up
41	F	R inf temp gyrus	R	R ATL	Engel I	7 mo
32	M	L temp pole	L	L ATL neocortical	Engel I	28 mo
15	M	R temp pole	R	R ATL	Engel I	30 mo
40	M	L inf temp / fusiform gyri	L	L ATL neocortical	Engel I	12 mo
66	F	L inf temp / mastoid roof	Bitemporal	VNS	Engel III	127 mo
33	F	L temp pole	L	L temp pole resx	Engel I	18 mo

Conclusions

Engel I seizure freedom may be achieved through simple resection of encephalocele and surrounding gliotic tissue. Those at high risk of developing neurocognitive deficits of verbal learning and memory from standard temporal lobectomy as determined by neuropsychiatric testing, Wada testing, and/or functional MRI should be considered for this surgical approach.

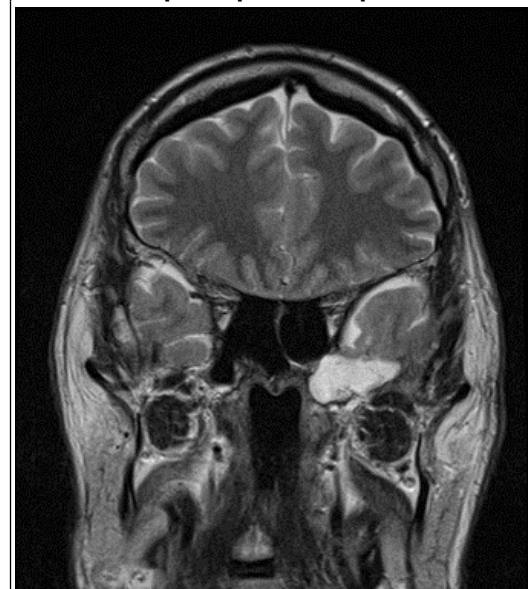
Additionally, TLE owing to middle fossa encephalocele may be a more frequent finding than previously reported. High resolution CT or thin-cut sequences on MRI in temporal lobe epilepsy may be useful in preoperative discovery and may alter surgical decision making.

Learning Objectives

By the conclusion of this session, participants should be able to:

1. Understand the importance of perioperative evaluation for surgical management of temporal lobe epilepsy.
2. Discuss the potential difference in neuropsychiatric outcome in patients with simple encephalocele resection versus temporal lobectomy with amygdalohippocampectomy.
3. Identify patients with complex partial seizure who are potential surgical candidates.

Left temporal pole encephalocele



T2 Coronal MRI