



# Research Week 2020

## Epilepsy surgical outcomes

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### Keywords

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### Abstract

Medically refractory epilepsy is defined as failure to control recurrent seizures with two or more anti-seizure medication trials. Among patients with refractory focal epilepsy localized to the mesial temporal lobe, amygdalohippocampectomy is a well-established treatment that can result in seizure freedom in up to 75% of appropriately selected patients. Laser Interstitial Thermal Therapy (LITT) is a newer, minimally invasive alternative to resection, although the safety and efficacy of LITT is less well defined. This study aimed to compare outcomes among patients who underwent LITT vs. resections.

A retrospective chart review was done for patients who underwent LITT or resection of the hippocampus at OHSU from 2015-2019, and included 46 resections and 10 laser ablations. Data obtained included pre-surgical evaluation details, adverse effects, and seizure outcomes. Seizure frequencies were examined pre-operatively as well as 3 and 6 months post-operatively.

At 3 months post-surgery, 66.7% of resection patients and 75% of LITT patients were free of disabling seizures (Engel Class I). At 6 months, 65.9% of resection patients and 85.7% of LITT patients were Engel Class I. 26% of resection patients experienced adverse events. 2 out of 46 resection patients had a complication necessitating surgical intervention and one additional patient underwent redo epilepsy surgery to obtain a better outcome. 30% of LITT patients experienced an adverse event with one complication requiring surgical intervention.

LITT began being offered at our institution in 2018 and limited postoperative data may affect rates of seizure freedom. Selection bias may be present as patients were not randomized to either procedure. Our data supports the finding that laser ablation is non-inferior to resection for treatment of medically refractory mesial temporal lobe epilepsy at six months post-surgery. More research is warranted to draw conclusions about the safety and efficacy of LITT compared to open resection.