

## BACKGROUND:

- Open corpus callosotomy (CC) is effective but invasive: 21% complication rate (3.8% permanent) (Nei et al. 2006).
- Laser interstitial thermal therapy (LITT) can be used for CC by disrupting the crossing fibers but is less invasive than open CC.
- LITT for CC reported in 1 pediatric patient with 50% seizure reduction (Dolces et al. 2014) and 3 adults with 50-100% seizure reduction (Ho et al. 2016, Tao et al. 2018).
- **We present first seizure-free outcome in a pediatric patient at 5 mo**

## CASE REPORT:

11 yo F w/ pharmaco-resistant Lennox Gastaut Syndrome secondary to HSV encephalitis

**Seizure Semiology:** daily atonic seizures (drop attacks, head drops) and tonic seizures

**Med:** Valproic Acid (23 mg/kg/day), Perampanel (0.2 mg/kg/day), Levocarnitine 330 BID

EEG

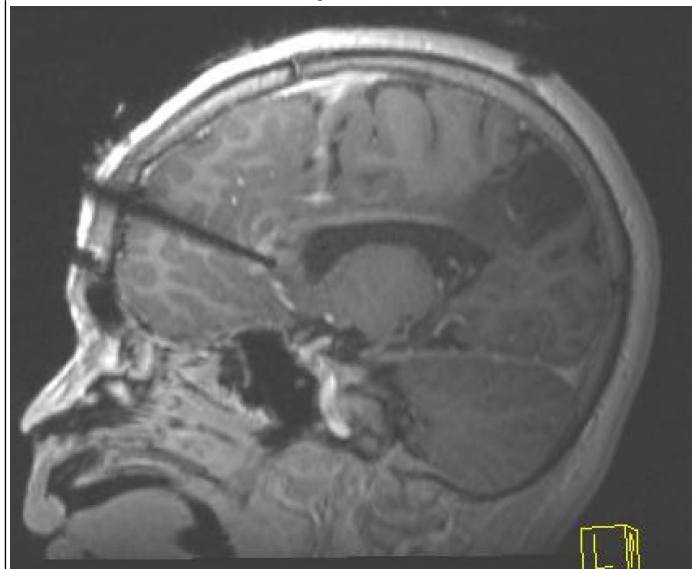
## SURGICAL PROCEDURE:

- Using three separate trajectories, the rostrum, genu, and body of the corpus callosum were targeted and then ablated.
- Example trajectory is shown in the MRI image below.

## POSTOPERATIVE COURSE:

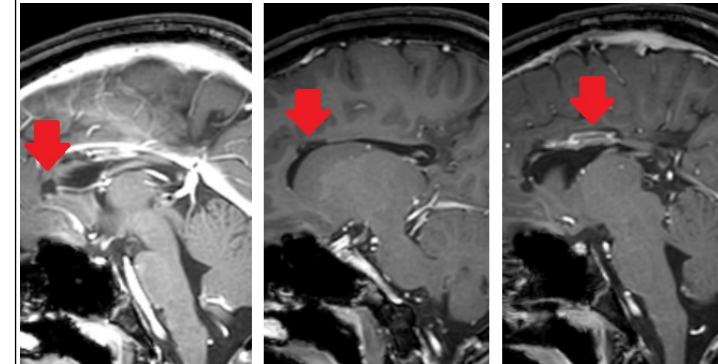
- One week of abulia and mild right hemiparesis
- One month of weight loss and decreased appetite
- No reports of clinical seizures at 5 months
- Her seizure meds weaned to monotherapy with valproic acid 26 mg/kg/day.

Intraoperative MRI



This image shows artifact in the genu of the corpus callosum where the laser is situated.

Postoperative MRI



The 4 month postoperative MRI shows hypodensity in the corpus callosum at sites of thermal ablation.

## DISCUSSION:

- No clinical seizures at short-term follow-up (5 mo)
- Alternatives to LITT: Radiosurgery (latent benefits) and endoscopic (more invasive than LITT) (Pencil et al. 1999; Chandra et al. 2015).
- Postoperative mutism after open CC often thought to be from frontal lobe retraction or ACA spasm but neither mechanism injury explains abulia here (Sussman 1983).

## CONCLUSIONS: LITT is feasible and a potentially useful, minimally-invasive option for CC

### References:

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Ho A... Halpern, C (2016). Epilepsy & behavior cs rpts, 5, 23.  
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