**Optical Coherence Tomography Provides Tissue Visualization During LITT**

**Need Statement**
Epilepsy surgeons need a detailed tissue diagnosis around the ablation zone before and after surgery to increase ablation accuracy and efficacy of post surgery epilepsy management.

**Need Criteria**

<table>
<thead>
<tr>
<th>Need Criteria</th>
<th>OCT</th>
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<tbody>
<tr>
<td>1. Minimally Invasive</td>
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<td>2. Integratable with LITT</td>
<td>✔</td>
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<td>3. Developed in Real Time</td>
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<td>4. Cost effective</td>
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**Background**
Laser Interstitial Thermal Therapy is the minimally invasive surgical standard for treating mesial temporal lobe epilepsy. The procedure is safer than its alternative surgeries, but has a decreased success rate. Without tissue visualization, a pathological diagnosis is never made. It is uncertain if all the damaging tissue has been ablated, the root cause is never determined, and the course of a patient’s treatment is therefore unclear if seizures return.

**Testing & Results**
- Location of LITT catheter allows for minimally invasive access to hippocampus
- Coronal attenuation map of human hippocampus created by imaging along the catheter track
- Histology confirms location of OCT probe during imaging and validates characteristics identified in attenuation map

**Data**
- >2 million People in the US suffer from mTLE
- 40% Have drug resistant epilepsy and require surgery
- 50% Have seizures 10 years post LITT surgery

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