

# Stereotactic EEG guided laser ablation for neocortical epilepsy

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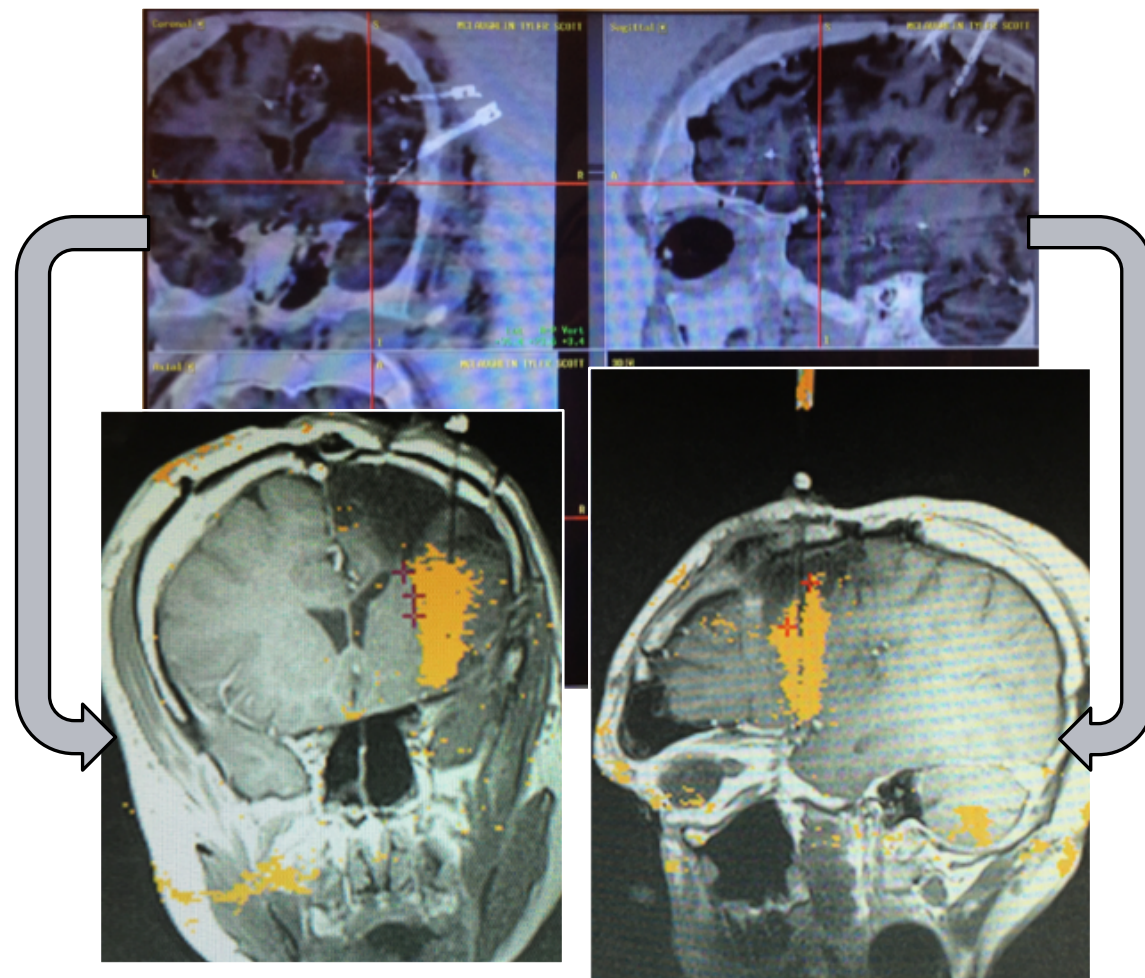
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# Rationale

- Medial temporal lobe epilepsy outcomes (with and without sEEG) are generally very good.
- Outcomes for stereotactic laser ablation (LITT) for medial temporal lobe epilepsy are also good.
- Outcomes sEEG guided stereotactic laser ablation (sEEG-SLA) of neocortical structures are less defined.

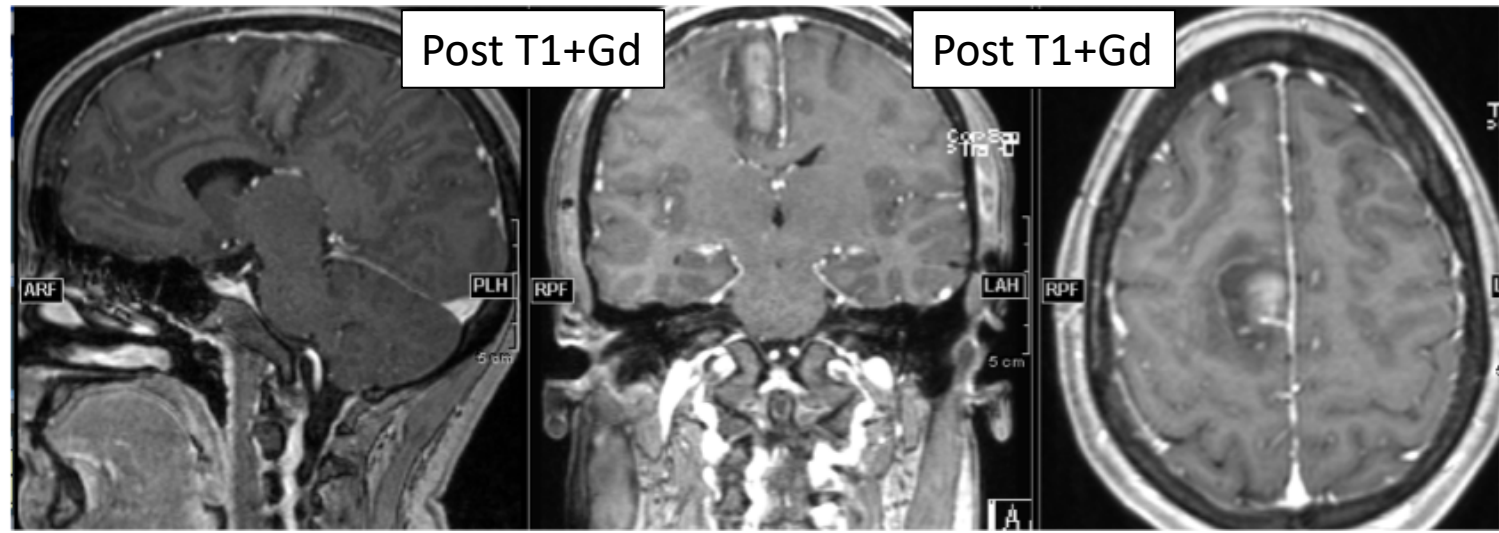
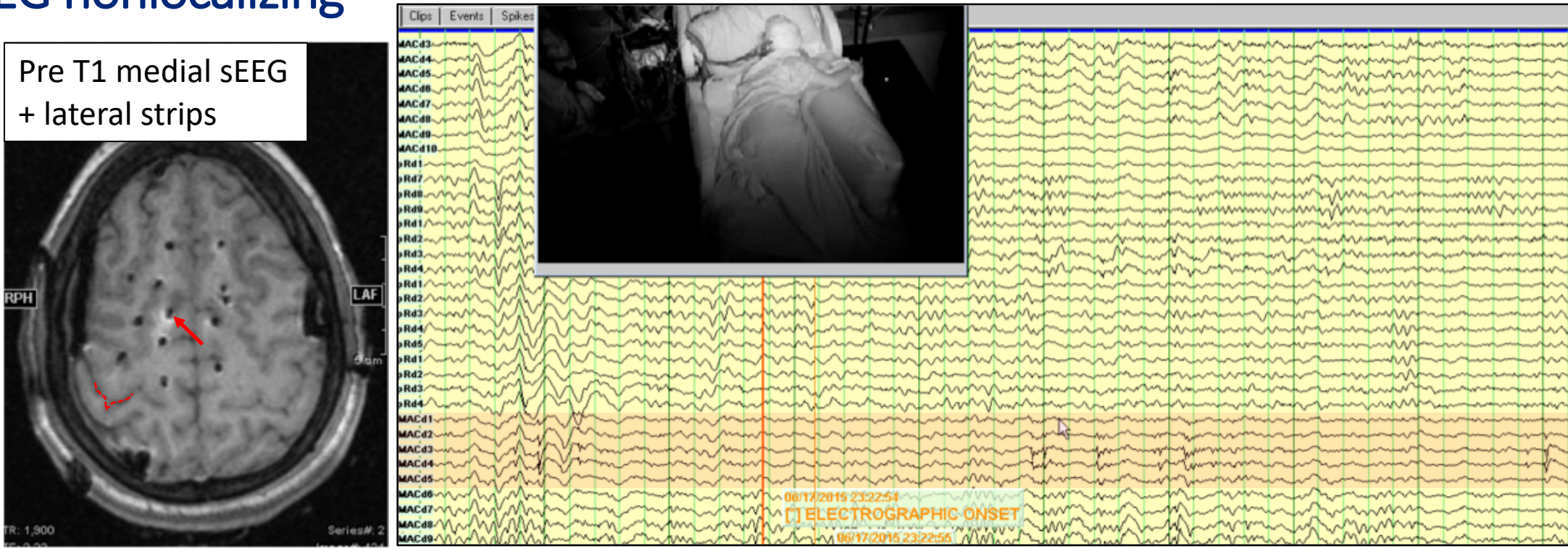
## Methods

- Retrospective review 2011-16
- Inclusion:
  - all patients undergoing SLA of targets identified by sEEG (except medial temporal lobe)
- Exclusion: medial temporal lobe epilepsy by sEEG
- Preop: MRI, PET, neuropsych, video-EEG
- MRI-guided stereotactic laser ablation
  - cannula placed via new twist-drill craniostomy or preexisting sEEG bolt
- Clinical evaluations at 3, 6, 12+ m



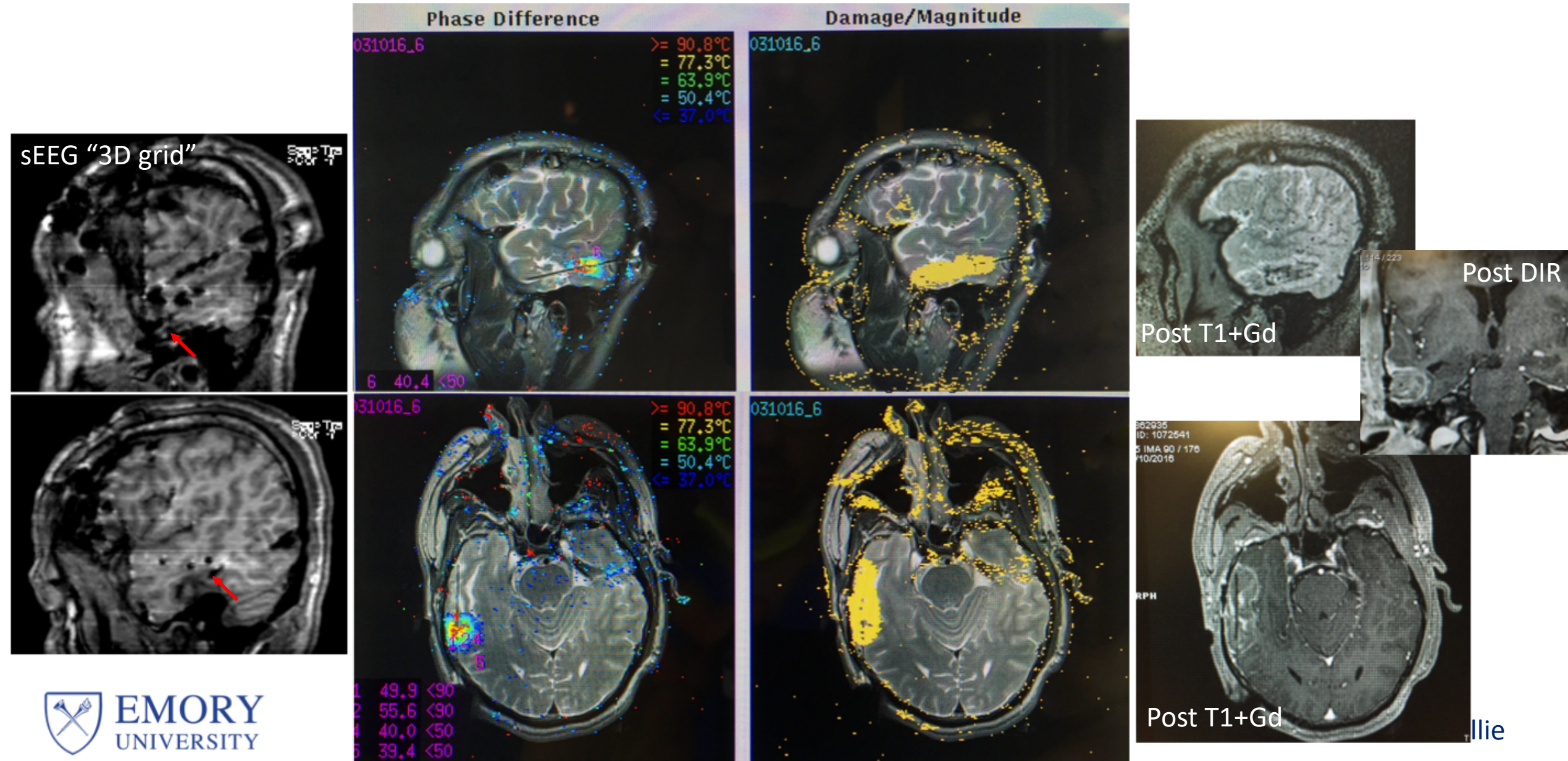
# Nocturnal hypermotor onset with rapid generalization, MRI and PET negative, scalp EEG nonlocalizing

Pre T1 medial sEEG  
+ lateral strips





# Focal dyscognitive seizures with prior low grade glioma resection, lateral onset with medial spread



# Results

- **12/13 patients** with outcome >1 y
  - 7 male
  - 8 had prior epilepsy or tumor surgery*
  - 1 patient with tuberous sclerosis and multifocal epilepsy and considered palliative\**
- Depths (median 15, range 3-28), +/- strips (median 2, range 0-11)
- No complications or permanent deficits (1 transient SMA syndrome)
- Discharged post-ablation: median postop day 1
- Median follow up: 500 days

## Localizations:

9 frontal  
2 cingulate  
2 insula  
1 inferior temporal  
1 lateral temporal  
1 occipital

## Apparent pathology:

3 tuberous sclerosis\*  
2 prior tumor resection  
2 trauma  
2 cortical dysplasia  
3 unidentified

## Epilepsy outcomes:

**7/12 (58%) Engel 1**  
**1/12 (8%) Engel 2**  
**3/12 (25%) Engel 3\***  
**1/12 (8%) Engel 4**

} **67%**