

Stereotactic EEG guided laser ablation for neocortical epilepsy

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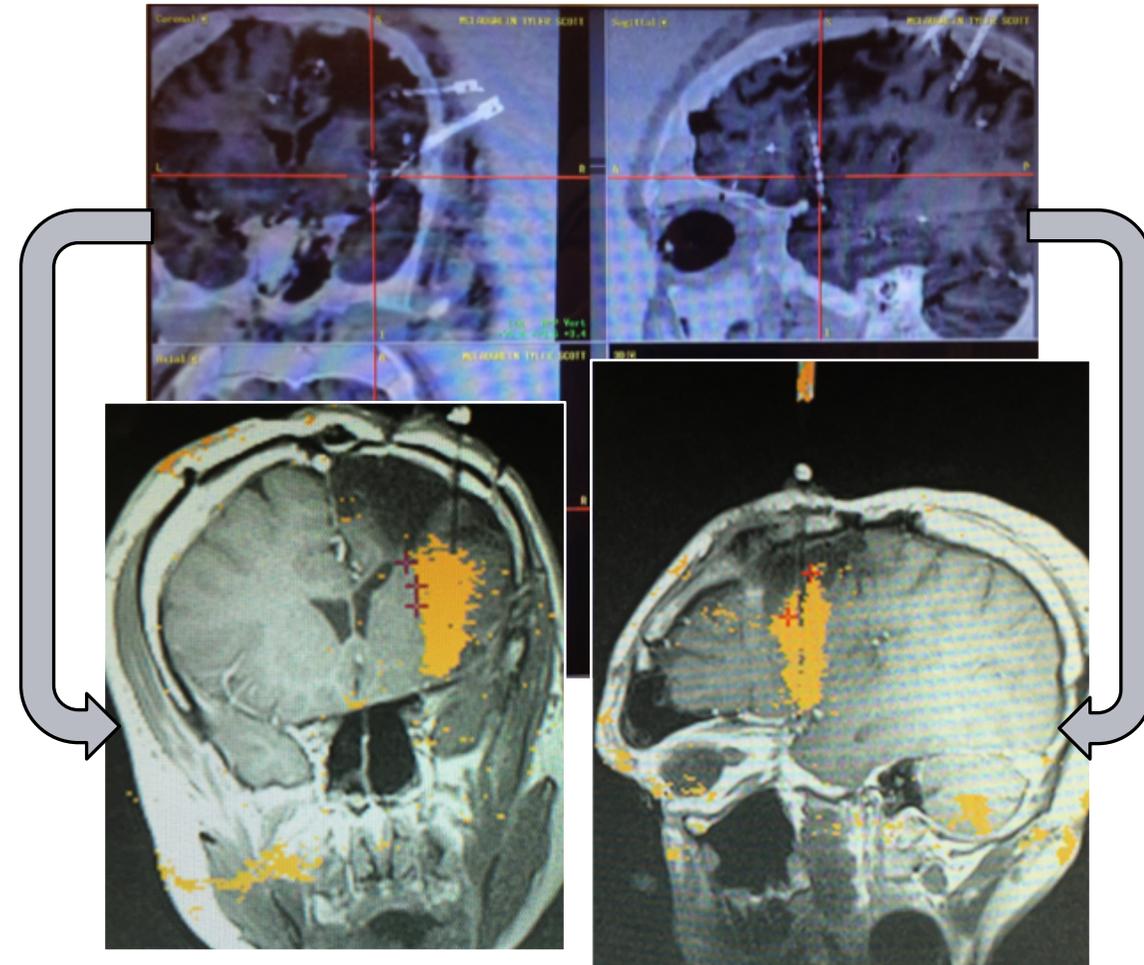
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Rationale

- 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.**

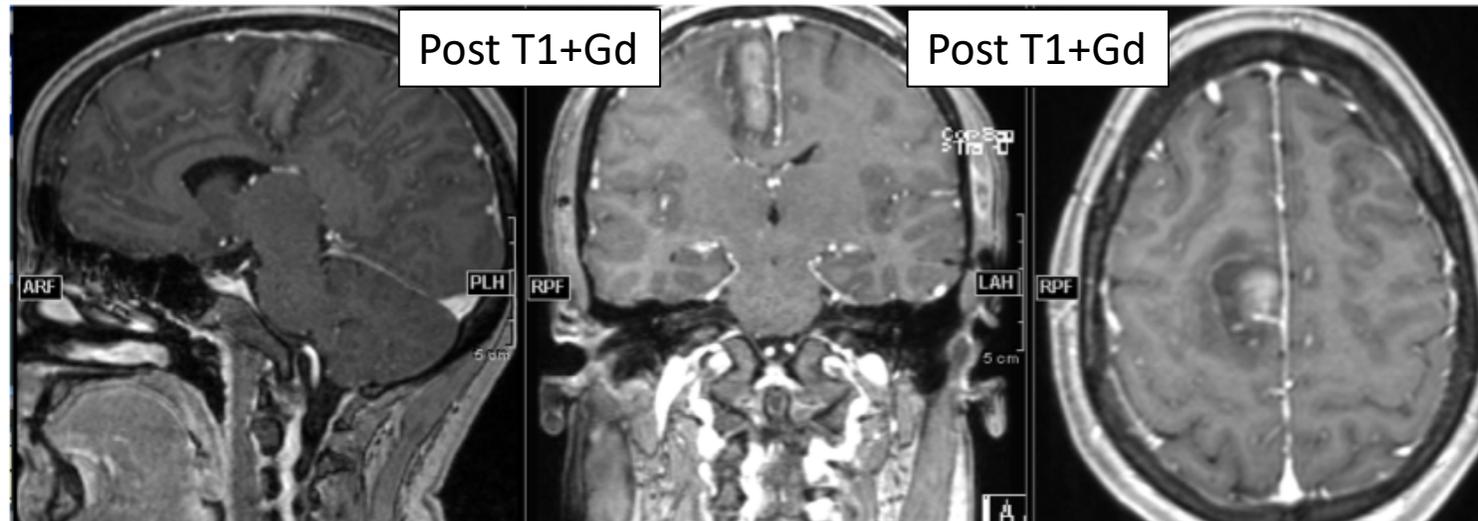
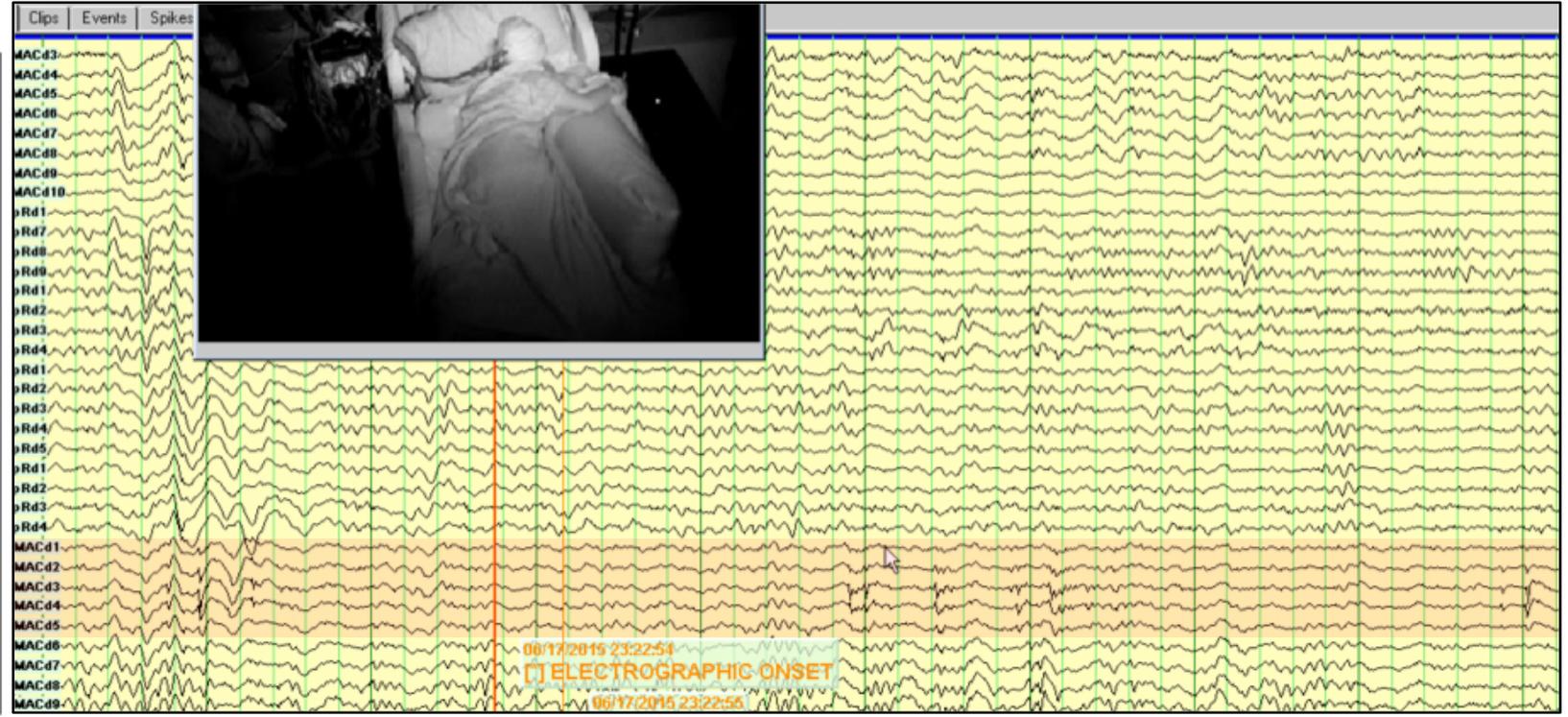
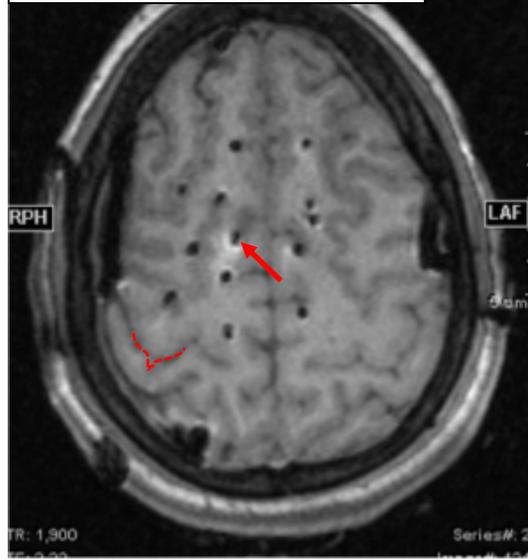
Methods

- 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

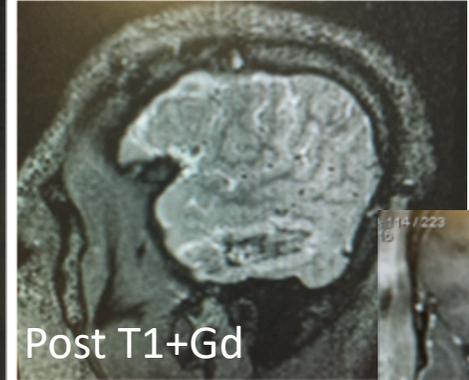
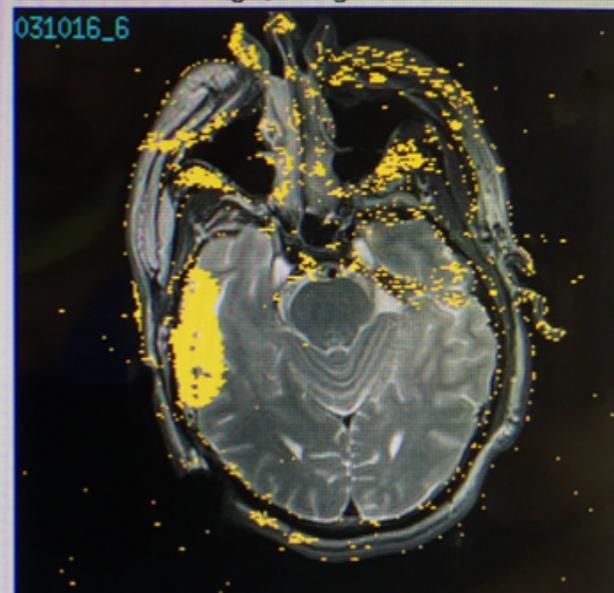
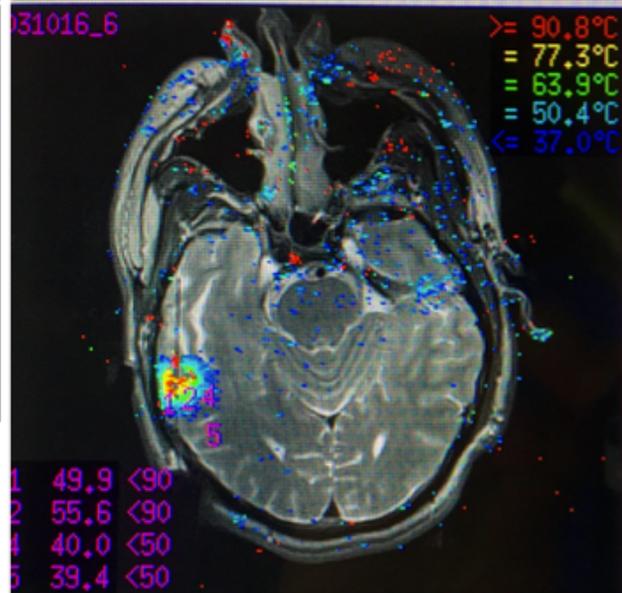
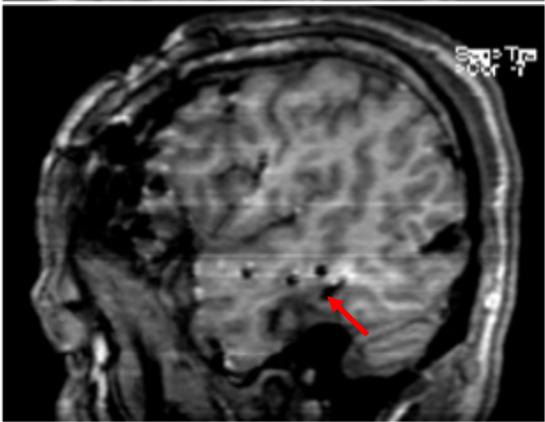
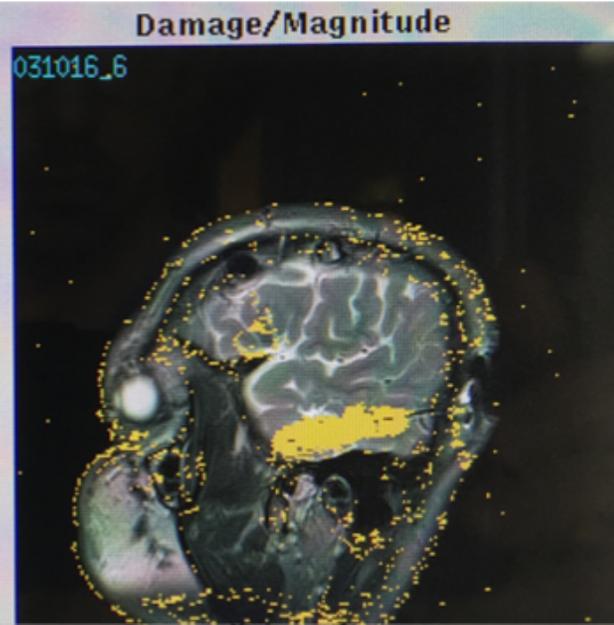
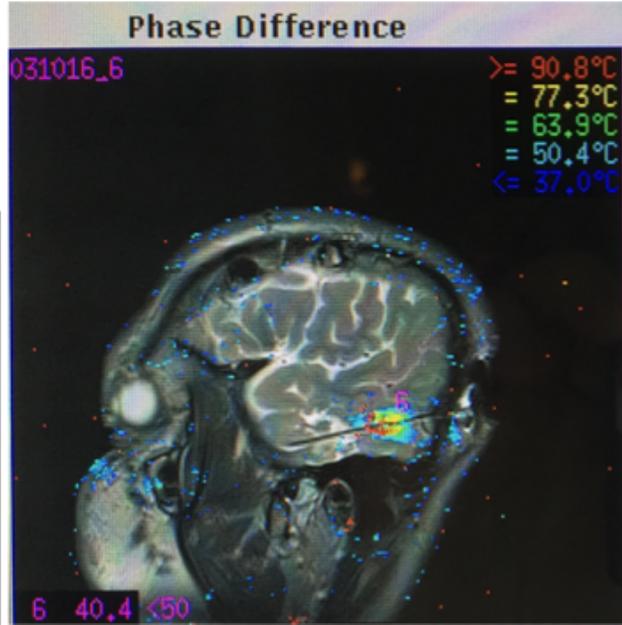
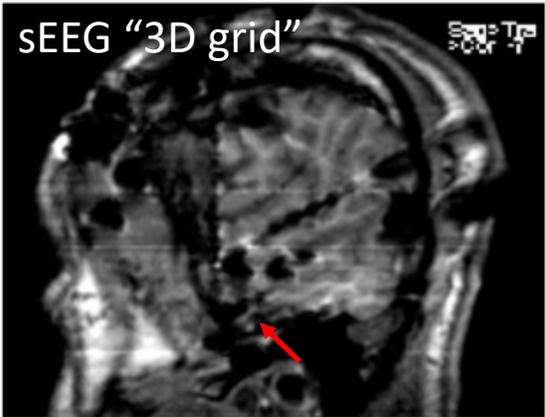


Nocturnal hypermotor onset with rapid generalization, MRI and PET negative, scalp EEG nonlocalizing

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%**