Laser Interstitial Thermal Therapy (LITT): seizure outcomes for intractable mesial temporal epilepsy

Scheherazade Le MD, Allen Ho MD, Kai J. Miller MD PhD, Robert S. Fisher MD PhD, Jaimie Henderson MD, Gerald Grant MD FACS, Kimford Meador MD, Casey H. Halpern MD

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Rationale & Methods

• LITT is a novel, minimally invasive alternative to conventional open surgery.

• Intractable mesial temporal epilepsy

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• Outcomes:
  – seizures (Engel classification, frequency)
  – complications
Results

• 22 patients
  → 1 lost to follow-up
• Ages 19 – 70
  – 10 patients (45%) > age 50
• MRI: MTS+ in 16/22 (73%)
• Laser targets
  – 8 right anterior hippocampus
  – 14 left anterior hippocampus
A total of 11/21 (52%) patients → Engel Class I

- 21/21 (100%) >50% reduction baseline sz frequency
- 15/21 (71%) >90% reduction baseline sz frequency
Immediate post-op sz: 1/22 (missed AED)
Perioperative sz (<14 d after): 5/21 (24%)
Results: Non-seizure Complications

• 4/22 (18%)

  – Targeting error → catheter repositioned twice
    • transient partial CN III palsy, aseptic meningitis, status migrainosus

  – Other minor complications:
    • homonymous hemianopsia → superior quadrantanopia
    • self-limited ileus
    • HA in a patient with co-morbid migraines
Conclusions

• Engel Class I or II = 85%
• All patients had > 50% reduction in baseline sz frequency; majority (71%) > 90% reduction.

• Complications of LITT were uncommon and largely transient.
  – Perioperative sz in 24%

• LITT is a safe, minimally invasive, well-tolerated procedure.