Clinical commentary

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Temporal encephalocele: a novel indication for magnetic resonance-guided laser interstitial thermal therapy for medically intractable epilepsy

Manish Ranjan [1], Angus W. Wilfong [2], Varina Borewinkle [2], Randa Jarrar [2], P. David Adelson [1]

[1] Division of Pediatric Neurosurgery
[2] Division of Pediatric Neurology, BARROW Neurological Institute at Phoenix Children's Hospital, Phoenix, AZ, USA

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Epileptic Disorders

A clinical scenario and conventional approaches

- Intractable temporal lobe epilepsy
- Imaging: temporal encephalocele
  - Temporal encephalocele (TE) is an abnormal herniation of brain parenchyma through osseus-dural defects of the middle temporal fossa/skull base floor.
  - TE can present with phamacoresistant epilepsy, specifically anteroinferior TE.
- Conventional treatment options:
  - Standard temporal lobectomy and amygdalohippocampectomy
  - Temporal lobectomy sparing the amygdala and hippocampus
  - Limited resection/lesionectomy/disconnection

Imaging: temporal Encephalocele (TE)


Fig: 1A

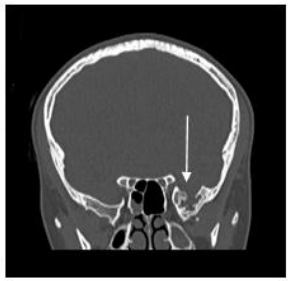


Fig: 1B

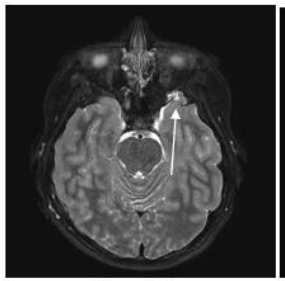
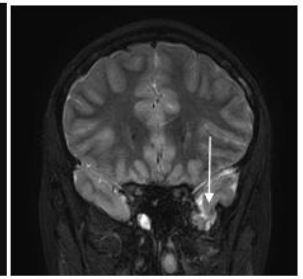


Fig: 1C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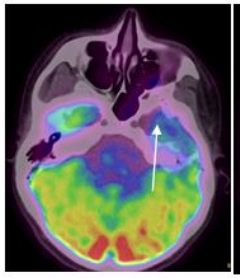
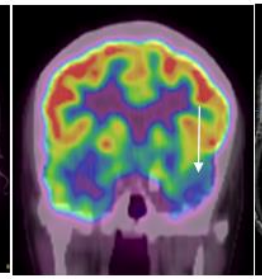


Fig: 1E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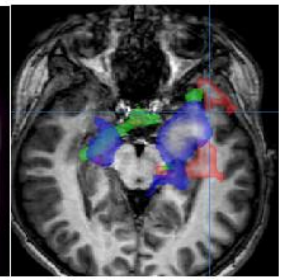
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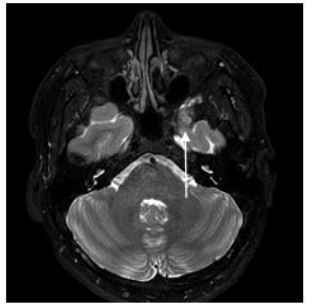
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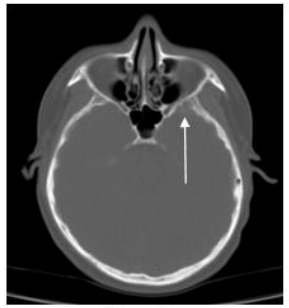
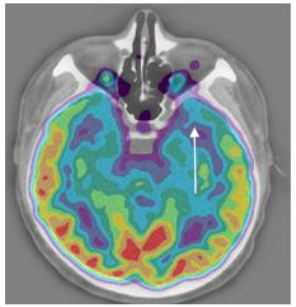


Fig: 1I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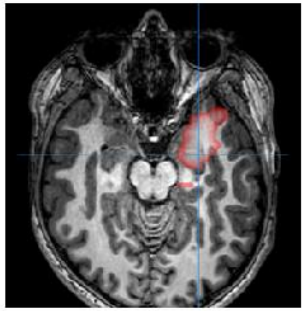


Fig: 1K

Epileptic Disorders

MRgLITT: A novel and minimally invasive approach

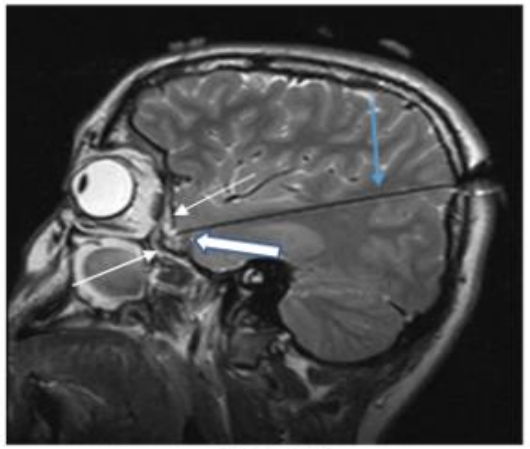


Fig: 2A

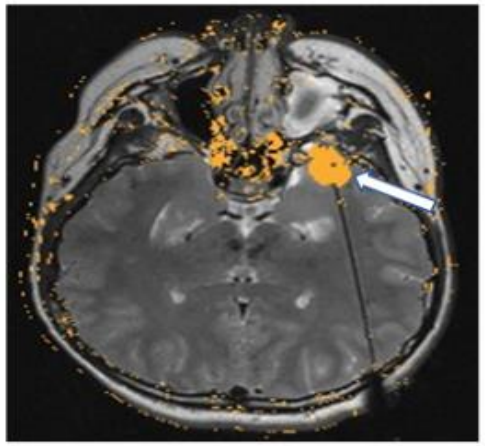
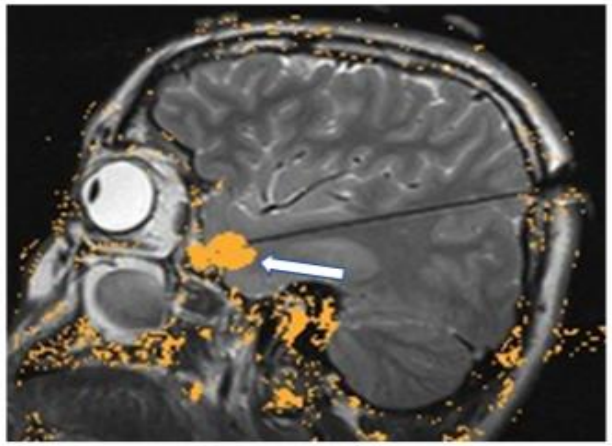


Fig: 2B



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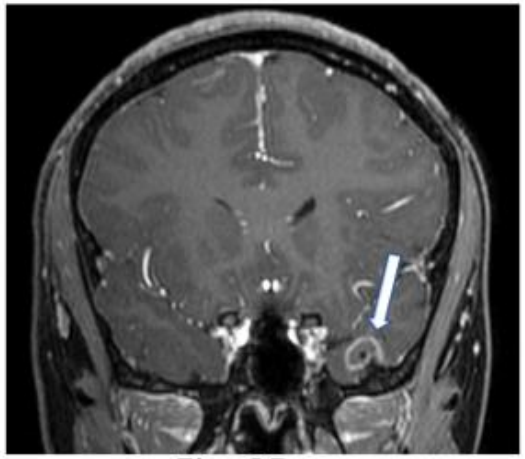

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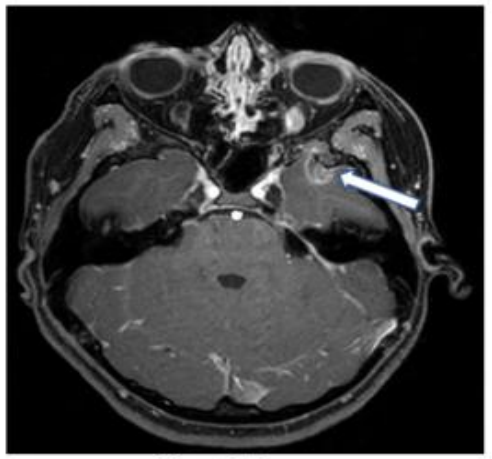

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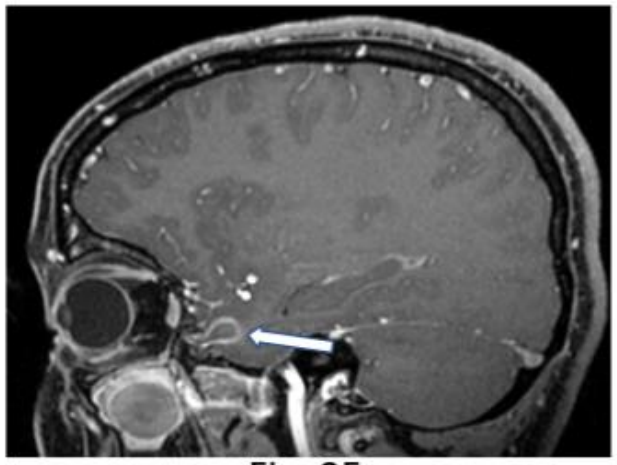

Fig: 2F

Epileptic Disorders

MRgLITT for temporal encephalocele (TE)

- Background
  - Seizure outcome is excellent and/or the same, whether limited to local resection/disconnection or lobectomy for TE.
  - Disconnection can be achieved without open surgery through Magnetic Resonance-guided Laser Interstitial Thermal Therapy (MRgLITT).
  - When treating with surgery, one should consider the more limited approach with the least amount of morbidity without compromising surgical outcome.
- Experience
  - Two pediatric patients with intractable temporal lobe epilepsy treated with MRgLITT were seizure-free at the last follow-up visit (up to 18 months).
  - The present study demonstrates the technique and feasibility of MRgLITT for TE.
- Conclusion
  - Local disconnection and limited cortical ablation can be achieved safely and effectively with a novel and minimally invasive approach based on MRgLITT.
  - MRgLITT should be considered as a primary surgical option for patients with intractable epilepsy secondary to TE.

Epileptic Disorders