Clinical commentary

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Refractory epilepsy secondary to anti-GAD encephalitis treated with DBS post SEEG evaluation: a novel case report based on stimulation findings

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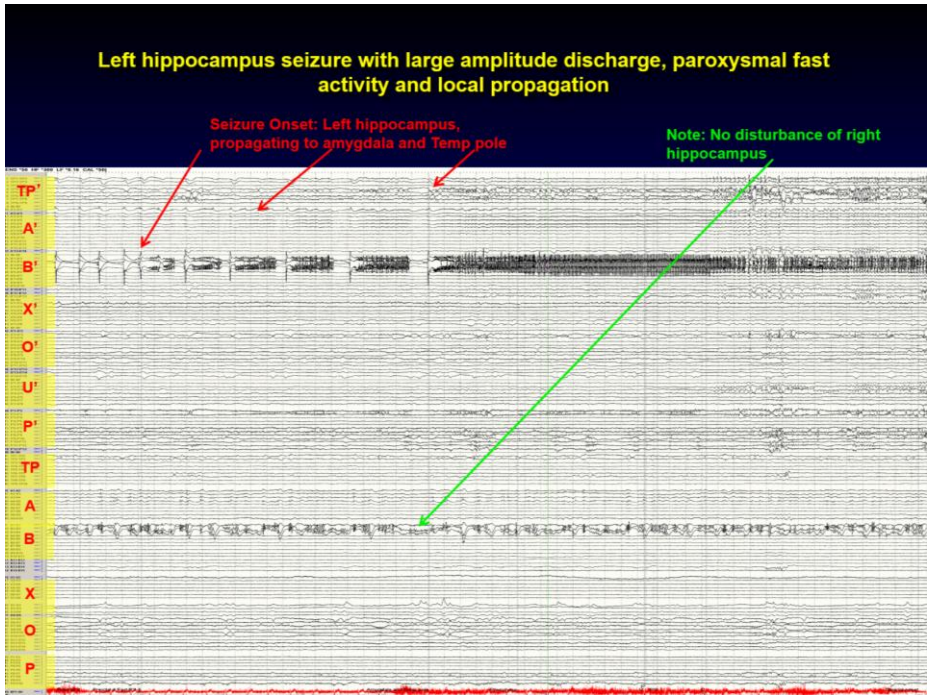
- Anti-glutamic acid decarboxylase (GAD) antibody-associated limbic encephalitis is an increasingly recognised entity characterised by temporal lobe seizures, amnesia, and encephalopathy.
- Anti-GAD encephalitis often responds poorly to both antiepileptic medications and immunotherapy, especially if treatment is delayed.
- Titres of anti-GAD antibodies frequently remain elevated after treatment, and thus are not always a reliable biomarker of disease activity.
- Furthermore, active inflammation may not be the primary factor driving the refractory nature of the epilepsy.
- An emerging option for the treatment of refractory focal epilepsy that is not amenable to surgical resection is the use of deep brain stimulation.
- Neurostimulating electrodes are targeted to the anterior nucleus of the thalamus, to desynchronise cortical activity and modulate intrinsic inhibitory networks.

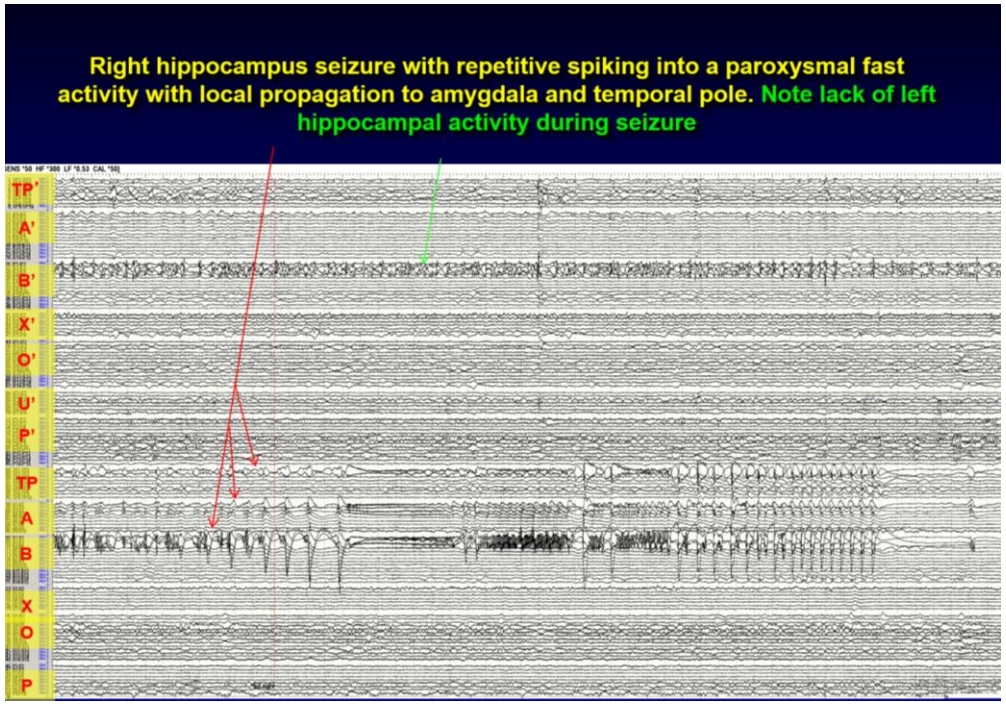
We report a patient with medically refractory anti-GAD encephalitis who was treated with deep brain stimulation (DBS) after seizure termination was achieved using cortical stimulation during stereo-electroencephalography (SEEG) evaluation.

The patient underwent bilateral SEEG implantation and cortical stimulation. Upon stimulation, mimicking intrinsic seizures (at 1Hz), it was possible to induce seizures with typical semiology, on multiple attempts. Stimulation during these seizures with high frequency (50Hz) resulted in complete termination of the seizure.

DBS was inserted after the SEEG evaluation, targeting the bilateral anterior nucleus of the thalamus.

There was a sustained reduction in seizure frequency and severity 12 months post insertion.





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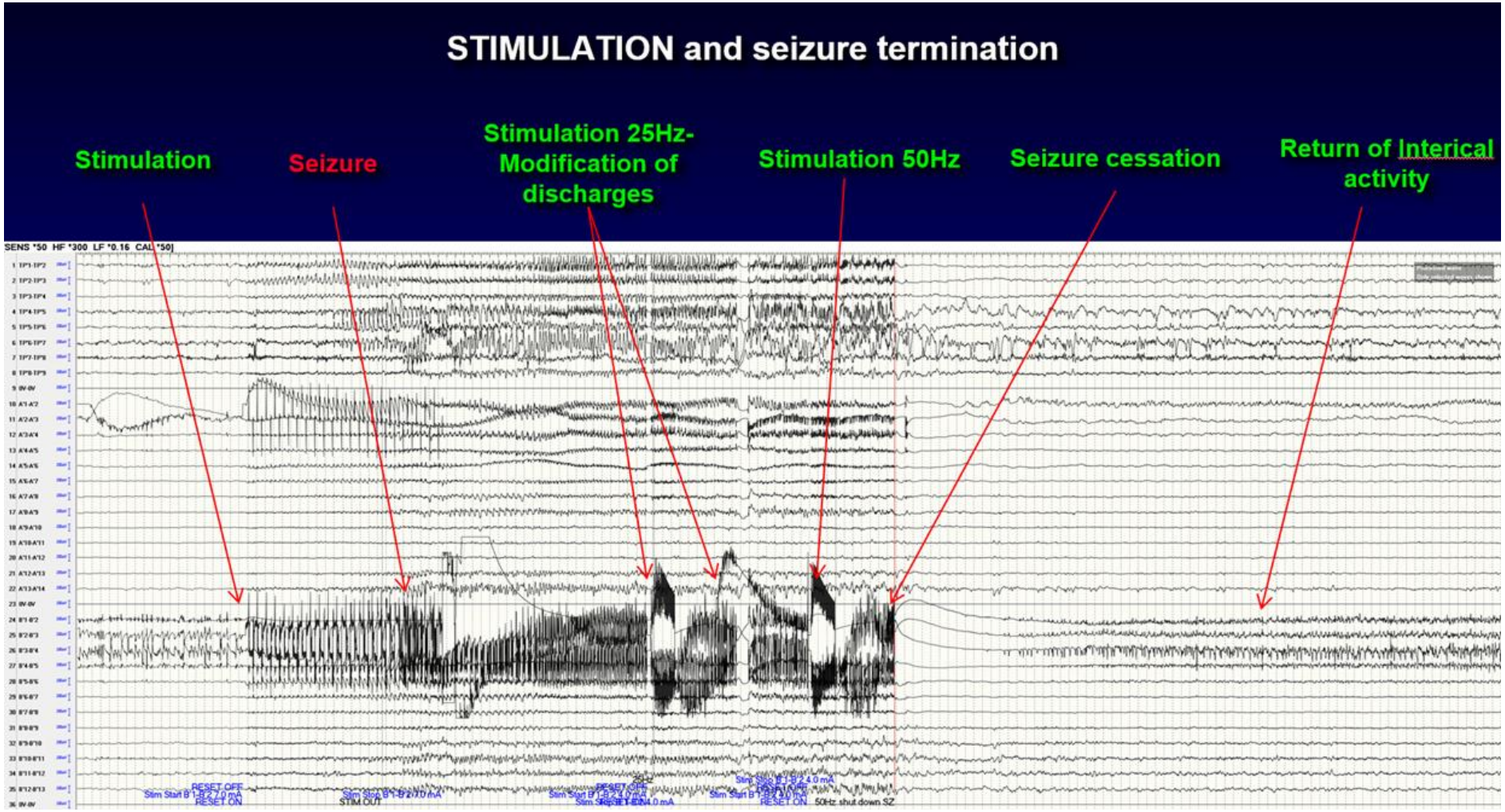

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