

Introduction

We describe a novel use of laser ablation for lesioning of bilateral anterior internal capsules in the treatment of obsessive-compulsive disorder (OCD). To date, three major modalities have been used for the creation of lesions in patients with OCD – stereotactic radiosurgery (SRS), radiofrequency ablation (RF) and deep brain stimulation (DBS). Disadvantages to SRS and DBS include delayed time to therapeutic response, whereas RF ablations are performed without real time monitoring. Major advantages of MR guided laser ablation include the immediate effect, as well as the ability to monitor lesion size and design the lesion whilst we create it with real time MRI thermography. This allows for more precise and reproducible lesions, which we hypothesize will correlate with improved outcomes.

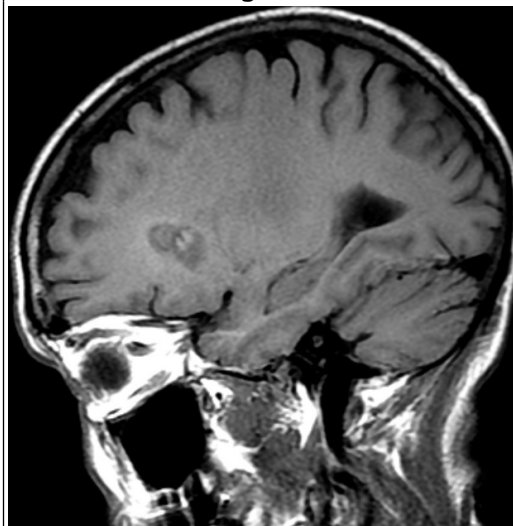
Methods

We present one patient, suffering from refractory obsessive-compulsive disorder, who underwent staged MR-guided ablation of the anterior limb of bilateral internal capsules with laser interstitial thermal therapy (LITT).

Results

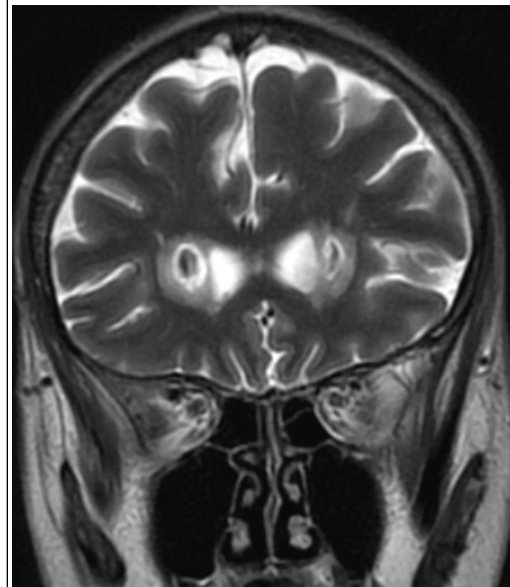
After the first ablation, there were no complications and she had a significant improvement in her OCD symptoms. Her pre-operative Yale Brown Obsessive Compulsive (YBOC) score was 39, which improved to 28 by 36 hours after surgery. Recurrence of her symptoms began around 4 months, worsening by 6 months, including a YBOC score of 40. We therefore repeated the MR ablation, creating larger lesions bilaterally, deeper to the first. After the second ablation, her YBOC scores improved to 20 at one month follow up.

T1 Sagittal MRI



Continuous staged lesions; smaller anterior superior initial lesion and a larger inferior posterior second staged lesion.

T2 Coronal MRI



Smaller anterior initial lesion

T2 Coronal MRI



Larger inferior staged second lesion

Conclusions

To the best of our knowledge, we present the first case of anterior internal capsulotomy with laser ablation for the treatment of OCD. Continued follow up, as well as further studies with larger cohorts, will be needed for validation of efficacy and safety.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the options for treatment of medically refractory obsessive compulsive disorder. 2) Discuss, in small groups, safety, outcomes, and technical nuances of stereotactic radiosurgery, radiofrequency, deep brain stimulation and MR guided laser ablation performed lesioning for treatment of medically refractory OCD.

References

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