

## Laser Interstitial Thermal Ablation as a primary treatment for deep inaccessible gliomas Ashish Harish Shah MD; Joshua Dee Burks; Luca Debs BS; Michael Ivan; Ricardo Jorge Komotar MD, FACS

#### Introduction

Treatment strategies for deep intracranial gliomas remain limited to stereotactic biopsy in many cases due to the morbidity of aggressive surgical resection. Since no cytoreductive therapy is offered, outcomes have been demonstrably poor compared to patients who are able to undergo primary surgical resection. In an effort to reduce morbidity and still offer cytoreductive treatment, we offer the possibility of laser interstitial thermal therapy (LITT) for the primary treatment of intracranial deep gliomas that would be otherwise unamenable for surgical resection.

### Methods

We conducted an exploratory volumetric analysis on patients (n=7) who have undergone contemporaneous biopsy and laser ablation for the treatment of deep gliomas with a median tumor volume of 28 cc (range 1.2- 155 cc).

#### Results

In our cohort, median extent of ablation (EOA) was 98% on postoperative MRI; mean PFS was 10.2 months, and all patients remained alive at mean follow-up time of 14.4 months without any complications.

## Learning Objectives

By the conclusion of this session, participants should be able to identify a useful and safe primary treatment modality for deep surgically inaccessible intracranial gliomas.



Axial T1 contrasted MRI demonstrating a heterogeneously enhancing lesion within the splenium of the corpus callosum

(A). Intraoperative MRI
 demonstrating laser catheter
 within the lesion with iatrogenic
 air artifact from intraoperative
 biopsy (B). Intraoperative real-

time thermometry (C). Postoperative MRI demonstrating near-total ablation of lesion (D).

#### Conclusions

Although our patient series is small, we suggest that LITT (laser) for these patients can be a safe alternative cytoreductive therapy for deep surgically inaccessible gliomas. Given the known benefit of near gross total resection for high-grade gliomas, we believe LITT may improve survival for these patients and complement adjuvant treatments if patients are appropriately selected.



preoperative lesion volume (cm3) and extent of ablation.

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