INTRODUCTION

Laser ablation techniques

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LASER interstitial thermotherapy (LITT), sometimes referred to as stereotactic laser ablation or SLA, is a minimally invasive approach that uses thermal energy delivered by a laser to ablate tissue. While this approach is not new, recent advances in technology and near real-time thermography have generated renewed interest in this technology for the treatment of diseases of the brain and spine. This issue of *Neurosurgical Focus* reviews recent technical advances as well as new applications for this technology for spinal (Tatsui et al.) and intracranial disease. Several authors report technical adjuncts for improving the precision and speed of LITT using customized 3D printed frames (Brandmeir et al. and Dadey et al.) as well as robot-assisted guidance for LITT (Chan et al.). Other groups have focused on assessing the safety of LITT procedures performed in a conventional operating room compared to the intraoperative MRI suite (Rennert et al.), and utilizing diffusion tensor imaging of the corticospinal tract to predict postoperative motor deficits (Sharma et al.).

Clinically oriented series include reports of LITT for rare lesions such as hypothalamic hamartomas, subependymal giant cell astrocytomas, and hypothalamic and intraventricular lesions often associated with epilepsy

(Burrows et al., Dadey et al., and Buckley et al.). A multi-center review of LITT for brain metastases that recur after stereotactic radiosurgery (Ali et al.) and a comparison of LITT for newly diagnosed and recurrent glioblastomas (GBMs) are also presented (Thomas et al.). Finally, two groups describe the outcomes after efforts to minimize complications associated with post-LITT cerebral edema of large GBMs by combining LITT with minimally invasive craniotomies (Pisipati et al. and Wright et al.).

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Disclosures

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