ABSTRACT

Focused ultrasound (FUS) lesioning of the brain has been of interest since its inception in the 1950s, but it has never been accepted because of the limitations with sonicating through the intact human cranium. Recent advances in transducer technology have now enabled for precise transcranial focusing deep within the brain. High intensity focused ultrasound combined with MRI allows for a theoretically powerful technology where noninvasive lesioning can be performed deep within the brain with continuous clinical and radiographic monitoring. The application of this technology for the treatment of neurologic disorders will be presented including the results of a phase 1 clinical trial of FUS thalamotomy for the treatment of essential tremor.