

عنوان مقاله:

Initial Experience with Brain Mapping under Awake Craniotomy for Resection of Insular Gliomas of the Dominant Hemisphere

محل انتشار:

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خلاصه مقاله:

Background & Importance: Insular lobe is located at the depth of sylvian fissure and is hidden by frontal, temporal and parietallobes in close vicinity of internal capsule and basal ganglia and adjacent to the speech centers in the dominant hemisphere. Thus, radical resection of insular gliomas can be even more difficult. Brain mapping techniques can be used to maximize the extent of tumor removal and minimize postoperative morbidities. **Case Presentation:** Patients with newly diagnosed gliomas of dominant insula were enrolled. The exclusion criteria were severe cognitive and/or psychological disturbances, those with difficulty in communication, older than 65 years, severely obese patients, those with difficult airways for intubation and severe cardiovascular or respiratory diseases. All patients were evaluated by contrast-enhanced brain MRI, functional brain MRI and diffusion tensor tractography of language and motor systems preoperatively. All were operated under awake craniotomy with the same anesthesiology protocol. Intraoperative monitoring included continuous motor evoked potential, electromyography, electrocorticography, direct electrical stimulation of cortex and subcortical tracts. They were followed with serial neurological examination and imaging. **Conclusion:** Seven patients were enrolled including 3 men and 4 women with mean age of 44.4 years. 5 patients suffered from low grade and 2 from high grade glioma. The most common clinical presentation was seizure followed by speech disturbance, hemiparesis and memory loss. Extent of tumor resection ranged from 73 to 100%. No mortality or major postoperative neurological deficit was encountered. Seizure control improved in 3/4 of patients with medical refractory epilepsy. One patient suffered from permanent deterioration of speech after surgery. Brain mapping under awake craniotomy may be considered a safe method to maximize the extent of tumor resection, while preserving neurological function in patients with gliomas of the dominant insular lobe.

کلمات کلیدی:

Insular Glioma; Awake Craniotomy; Brain Mapping; Cortical Stimulation

