Angular gyrus high grade glioma

D'Andrea et al., reported the experience regarding high grade gliomas affecting the dominant angular gyrus (AG), supramarginal gyrus (SMG), intraparietal sulcus (IPS), and their respective subcortical areas using intraoperative magnetic resonance imaging and diffusion tensor imaging (DTI). Retrospectively, they reviewed a consecutive series of 27 patients operated in a BrainSuite for high-grade intraparenchymal tumors of the left posterior temporoparietal junction. They included tumors involving the dominant AG, SMG, and/or IPS and the subcortical course of arcuate fasciculus (AF) and all the patients who underwent preoperative fMRI and DTI to localize the AF and the eloquent cortical areas. Just after craniotomy, new volumetric MRI and DTI verified and corrected possible brain shift. After the gross total resection was carried out, and before approaching the residual mass close to the white matter tract, an intraoperative MRI was again performed.

They operated on 27 patients, 15 males and 12 females, whose diagnosis was always high-grade glioma. During the preoperative neurologic examination, 6 patients were asymptomatic; 3 presented a Gerstmann syndrome; 16 showed dysphasic disturbances, 6 of which were associated with visual field deficits; and 2 showed weakness of the right limb.

The results suggest that this approach is completely safe and effective as an alternative to awake surgery [1)].

1)
D'Andrea G, Familiari P, Di Lauro A, Angelini A, Sessa G. Safe Resection of Gliomas of the Dominant Angular Gyrus Availing of Preoperative FMRI and Intraoperative DTI: Preliminary Series and Surgical Technique. World Neurosurg. 2016 Mar;87:627-39. doi: 10.1016/j.wneu.2015.10.076. Epub 2015 Nov 5. PubMed PMID: 26548825.