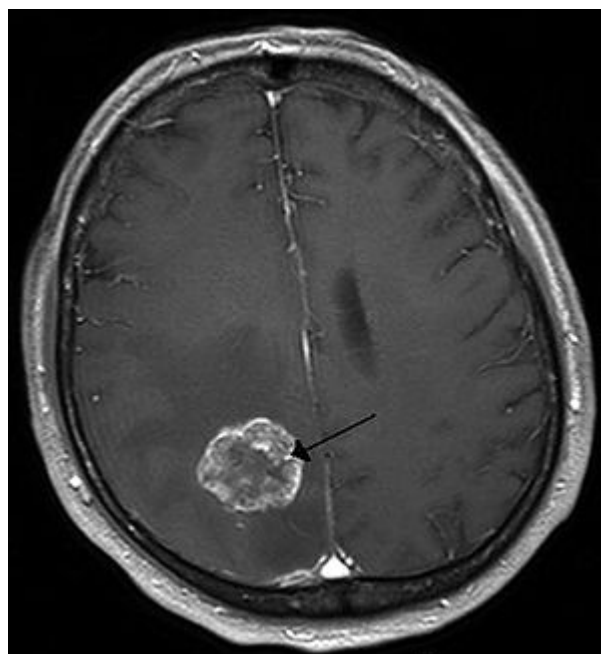


Central lobe tumor



see also [subcentral gyrus](#).

Akeret et al., [reviewed prospectively](#) collected clinical and [imaging data](#) of all patients operated on a [supratentorial intraparenchymal primary brain tumor](#) at the Neuroscience Center [Zurich](#) between January 2009 and December 2016. The effect of tumor [histology](#), anatomical location and [white matter infiltration](#) on seizure [prevalence](#) and [semiology](#) were assessed using uni- and [multivariate](#) analyses.

Of 678 included [patients](#), 311 (45.9%) presented with [epileptic seizures](#). Tumor [location](#) within the [central lobe](#) was associated with higher seizure prevalence (OR 4.67, 95% CI: 1.90-13.3, $p = .002$), especially within the [precentral gyrus](#) or [paracentral lobule](#) (100%). Bilateral extension, location within [subcortical](#) structures and invasion of deeper [white matter](#) sectors were associated with a lower risk (OR 0.45, 95% CI: 0.25-0.78; OR 0.10, 95% CI: 0.04-0.21 and OR 0.39, 95% CI: 0.14-0.96, respectively). Multivariate analysis revealed the [impact](#) of a [location](#) within the central lobe on seizure risk to be highly significant and more relevant than [histopathology](#) (OR: 4.79, 95% CI: 1.82-14.52, $p = .003$). [Seizures](#) due to [tumors](#) within the [central lobe](#) differed from those of other locations by lower risk of secondary generalization ($p < .001$).

Topographical lobar and gyral location, as well as extent of white matter infiltration impact seizure risk and semiology. This finding may have a high therapeutic potential, for example regarding the use of prophylactic [antiepileptic](#) therapy ¹⁾.

[Brain mapping](#) with direct electrical stimulation is usefull when the tumor is located near or has infiltrated the central lobe.

To analyze the surgical findings with direct electrical stimulation of the cortex and white matter under general anesthesia during surgery for brain tumors related to the central lobe.

We studied 42 patients operated on from June 2000 to June 2003. We analyzed surgical findings and details of brain mapping.

The mean value of the intensity of the stimulus was greater among those who presented motor deficit prior to surgery ($p = 0.0425$) and edema on MRI ($p = 0.0468$) or during anesthesia with continuous propofol ($p = 0.001$).

The functional mapping of the central lobe may be influenced by severe motor deficit, edema on MRI and propofol's anesthesia ²⁾.

References

¹⁾

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²⁾

Brainer-Lima PT, Brainer-Lima AM, Brandt CT, Carneiro GS, Azevedo HC. [Intraoperative mapping of motor areas during brain tumor surgery: electrical stimulation patterns]. *Arq Neuropsiquiatr.* 2005 Mar;63(1):55-60. Portuguese. PubMed PMID: 15830066.

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