Occipital lobe glioma

- Anatomical distribution and prognostic heterogeneity in glioma: unique clinical features of occipital glioblastoma
- Ipsilateral tumor-side-down approach to mesial parietal and occipital gliomas: patient series
- Occurrence Rates of Delirium in Brain Tumor Patients: A Systematic Review and Meta-Analysis
- m6A-lncRNA landscape highlights reduced levels of m6A modification in glioblastoma as compared to low-grade glioma
- From classic models to new pathways: unraveling the anatomy and function of the inferior fronto-occipital fasciculus in language processing
- Low-grade epilepsy-associated tumors in pediatric patients: A focused review of the tumor differential and current treatment options
- Quantitative evaluation of neuroradiological and morphometric alteration of inferior Fronto-Occipital Fascicle across different brain tumor histotype: an Italian multicentric study
- CP ANGLE MEDULLOBLASTOMA WITH SUPRATENTORIAL DROP METS

Diffuse low-grade glioma (WHO grade II glioma) involving the occipital lobe is a rare entity. Its surgical resection remains controversial as it implies inducing a permanent visual deficit.

Occipital high-grade glioma

Surgery

Occipital lobe glioma surgery

Case series

Six right-handed patients revealed by seizures (normal examination except a quadrantanopsia in one case) and located within the occipital lobe (4 left and 2 right tumors) were submitted to surgery. Before making this decision, the benefit-to-risk ratio of the resection was extensively discussed with the patient and his/her family, especially concerning the price to pay to remove the tumor, that is, to voluntarily generate a permanent hemianopsia. All the procedures were performed under awake condition using intraoperative electrostimulation, in order to pursue the resection until sensory-motor and/or language structures were encountered.

An extensive occipital lobectomy was achieved in the six patients, with identification and preservation of sensory-motor pathways in the two cases with a right tumor and detection of language pathways in the four cases with a left tumor. The mean extent of resection was 93% (range: 91-100%). All patients experienced an expected postoperative deficit of the visual field (homonymous hemianopsia). Nonetheless, the six patients resumed a normal social and professional life (KPS at 90 in the 6 cases) with a mean follow-up of 58 months (range: 3-147 months)–with adjuvant treatment in three cases (in addition to a reoperation in two of them).

The findings suggest that, despite a definitive hemianopsia, an extensive surgical resection can be considered in the rare cases of occipital GIIG involving the primary visual structures, with patients able to maintain a normal life–except regarding the medico-legal problem of driving [1].

Case report

A 26-year-old male presented with an occipital lobe tumor located intrinsically underneath the right calcarine fissure. 3-DAC imaging showed that the right optic radiation was located along the superior and lateral surfaces of the lesion. Mapping of the VEFs demonstrated that the primary visual cortex was located superior and lateral to the lesion. The lesion was totally resected via an infero-medial cortical incision using a frameless stereotactic system. Histopathology indicated a pilocytic astrocytoma. No visual deficit was found before or after surgery.

Combined 3-DAC imaging and MEG can provide essential information about the optic radiation and primary visual cortex for planning the surgical treatment of occipital lobe tumors [2].

1)
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2)
Inoue T, Fujimura M, Kumabe T, Nakasato N, Higano S, Tominaga T. Combined three-dimensional anisotropy contrast imaging and magnetoencephalography guidance to preserve visual function in a patient with an occipital lobe tumor. Minim Invasive Neurosurg. 2004 Aug;47(4):249-52. PubMed PMID: 15346325.