Supratentorial oligodendroglioma

Surgical resection is the first step in the treatment of adult supratentorial oligodendrogliomas (OLG). However, the role of resection on prognosis, the most appropriate time for surgery along the natural history of those tumors, and the best operative strategy remain debated. Survival curves after resection vary greatly among reported series, in particular as a result of a persisting confusion in identification and classification of cerebral OLG. Surgical or stereotactic biopsy is the first surgical procedure which enables confirmation of the diagnosis suggested on imaging, assessment of extension of tumor cell infiltration beyond abnormalities limit described an imaging, and currently available molecular biology studies. Biopsies may be the only surgical procedure in patients having a deep-seated tumor with minimal mass effect, or prior to a surgical resection or a “wait and watch” strategy. Surgical resection is indicated for the other patients. However, it has not been demonstrated that time for resection has an influence on survival, excepted in patients with rapidly growing tumors, with mass effect causing increased intracranial pressure. A wait and watch strategy is therefore warranted in patients with a tumor aspect suggestive of a grade A OLG; surgical resection may be indicated later. There is a current trend for maximal safe resection, preserving functional cerebral areas, since truly complete resection of the tumor including infiltration is exceptional. However, from the contradictory results reported to date, one cannot ascertain whether large or complete resection based on imaging is associated with significantly longer survival. Neuronavigation guidance, intraoperative imaging, and cortical stimulation techniques are helpful neurosurgical techniques enabling maximal safe resection with preservation of functional areas [1].

Case reports

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Achiha et al. describe a genetic analysis of a low-grade glioma that developed in an enchondromatosis case. A 32-year-old man with a long history of enchondromatosis developed a left frontal tumor. The histopathological findings of his surgical specimen revealed characteristics of a low-grade glioma with an IDH1 c.395G>A (R132H) mutation and 1p/19q codeletion, which led to a definitive diagnosis of oligodendroglioma. A common point mutation in IDH1 (R132H) was detected in the patient's enchondroma and glioma-matched pair specimens. To the best of our knowledge, this is the first case of molecularly confirmed oligodendroglioma associated with enchondromatosis. Furthermore, identification of a common IDH1 mutation in enchondroma and oligodendroglioma-matched pair specimens supports the hypothesis that IDH1/2 mosaicism initiates tumorigenesis [2].

1)
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2)
Achiha T, Arita H, Kagawa N, Murase T, Ikeda JI, Morii E, Kanemura Y, Fujimoto Y, Kishima H. Enchondromatosis-associated oligodendroglioma: case report and literature review. Brain Tumor Pathol. 2017 Dec 9. doi: 10.1007/s10014-017-0303-y. [Epub ahead of print] PubMed PMID: 29224049.