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Neurol Med Chir (Tokyo). 2010;50(9):720-6.

Surgical treatment for glioma: extent of resection applying functional neurosurgery.



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Abstract

Current treatments for gliomas, including surgery, chemotherapy, and radiation therapy, frequently result in unsuccessful outcomes. Studies on glioma resection were reviewed to assess better treatment outcomes applying the newest neurosurgical multimodalities. We reviewed reports of surgical removal of gliomas utilizing functional brain mapping, monitoring, and other functional neurosurgery techniques such as neuronavigation and awake surgery. Attempts to maximize the extent of glioma resection improved survival. A close proximity of the resection to the eloquent areas increased the risk of perioperative neurological deficits. However, those deficits often improved during the postoperative rehabilitation and recovery period when the essential or the compensative eloquent areas remained intact. Pre- and intraoperative application of the latest brain function analysis methods promoted safe elimination of gliomas. These methods are expected to help explore the long-term prognosis of glioma treatment and the mechanism for recovery from functional disabilities.

PMID: 20885106 [PubMed - in process] [Free Article](#)

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