

Wounded glioma syndrome

Partial resection of a glioblastoma carries a significant risk of postoperative hemorrhage and/or edema (wounded glioma syndrome) with the risk of herniation. Furthermore, the benefit of subtotal resection is dubious. Retrospective evidence suggested survival benefits in gross total resection but not with incomplete resection ¹⁾.

Therefore, surgical excision should only be considered when the goal of gross total removal is feasible.

As a result of the above, the following are usually not candidates for surgical debulking:

1. extensive dominant lobe GBM
2. lesions with significant bilateral involvement (e.g. large butterfly gliomas)
3. elderly patients
4. Karnofsky score < 70 (in general, with infiltrating tumors, the neurologic condition on steroids is as good as it is going to get, and surgery rarely improves this)
5. multicentric gliomas

Case reports

A rare case report of distant wounded glioma syndrome after stereotactic biopsy of glioblastoma, when small distant bleeding was proven in the tumor nodule distant from the original site of biopsy ²⁾.

Koebbe et al., describe two cases of distant wounded glioma syndrome complicating surgical resection of multifocal glioblastoma multiforme. This clinical entity was previously described as a local phenomenon resulting in postoperative hemorrhaging within the cavity of partially resected tumors. These cases are unique, in that the postoperative hemorrhaging occurred within distant tumor nodules after gross total resection of the primary lesion.

Two middle-aged men without known risk factors for postoperative hemorrhaging presented with multifocal glioblastoma multiforme. Each underwent surgical resection of the deficit-producing lesion and developed hemorrhage at distant tumor sites that were not directly manipulated during the surgical procedures. The distant hemorrhage caused new neurological deficits, with severe morbidity.

We postulate that distant wounded glioma syndrome is a distinct clinical entity that causes remote postoperative hemorrhaging and that tumor-induced coagulopathy triggered by surgery seems to create a hypocoagulable state that is most concentrated within brain tissue. Because of their rich vascularity, these distant tumor nodules are more susceptible to hemorrhage, resulting from coagulation changes after tumor resection, than are other sites. They also exhibit increased blood flow after resection of a large mass, because of autoregulatory dysfunction induced by peritumoral edema, increasing the likelihood of hemorrhage at these sites ³⁾.

References

¹⁾

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Koebbe CJ, Sherman JD, Warnick RE. Distant wounded glioma syndrome: report of two cases. *Neurosurgery*. 2001 Apr;48(4):940-3; discussion 943-4. PubMed PMID: 11322457.

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