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Surgical Management and Advances in the Treatment of Glioma

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Abstract

The care of patients with both high-grade glioma and low-grade glioma necessitates an interdisciplinary collaboration between neurosurgeons, neuro-oncologists, neurologists and other practitioners. In this review, we aim to detail the considerations, approaches and advances in the neurosurgical care of gliomas. We describe the impact of extent-of-resection in high-grade and low-grade glioma, with particular focus on primary and recurrent glioblastoma. We address advances in surgical methods and adjunct technologies such as intraoperative imaging and fluorescence guided surgery that maximize extent-of-resection while minimizing the potential for iatrogenic neurological deficits. Finally, we review surgically-mediated therapies other than resection and discuss the role of neurosurgery in emerging paradigm-shifts in inter-disciplinary glioma management such as serial tissue sampling and "window of opportunity trials".

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