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1: [Neurosurgery](#). 2009 Sep;65(3):463-9; discussion 469-70.



**Association of surgically acquired motor and language deficits on overall survival after resection of glioblastoma multiforme.**

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**OBJECTIVE:** Balancing the benefits of extensive tumor resection with the consequence of potential postoperative deficits remains a challenge in malignant astrocytoma surgery. Although studies have suggested that increasing extent of resection may benefit survival, the effect of new postoperative deficits on survival remains unclear. We set out to determine whether new-onset postoperative motor or speech deficits were associated with survival in our institutional experience with glioblastoma multiforme (GBM). **METHODS:** We retrospectively reviewed records of all patients (age range, 18-70 years; Karnofsky Performance Scale score, 80-100) who had undergone GBM resection between 1996 and 2006 at a single institution. Survival was compared between patients who had experienced surgically acquired motor or language deficits versus those who did not experience these deficits. **RESULTS:** Three hundred six consecutive patients (age, 54 +/- 11 years; median Karnofsky Performance Scale score, 80) underwent primary GBM resection. Nineteen patients (6%) developed surgically acquired motor deficits and 15 (5%) developed surgically acquired language deficits. Median survival was decreased in patients who acquired language deficits (9.6 months;  $P < 0.05$ ) or motor deficits (9.0 months;  $P < 0.05$ ) versus patients without surgically acquired deficits (12.8 months). Two-year survival was 8% and 0% for patients with surgically acquired motor or language deficits, respectively, versus 23% for patients without new-onset deficits. **CONCLUSION:** In our experience, the development of new perioperative motor or language deficits was associated with decreased overall survival despite similar extent of resection and adjuvant therapy. Although it is well known that surgically induced neurological deficits affect quality of life, our results suggest that these surgical morbidities may also affect survival. Care should be taken to avoid surgically induced deficits in the management of GBM.

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