

Survival Benefit Of Lobectomy For Primary Glioblastomas In Non-Eloquent Region: Gross-Total Resection Versus Supratotal Resection

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Objective:

The only prognostic factor of glioblastoma that can be determined by the surgeon is the extent of resection. However, glioblastomas are known to infiltrate to a wider extent and are eventually recurred by remaining microscopic tumors. In surgical oncology field, the classic concept of radical resection was wide resection including normal surrounding tissue. Nevertheless, it is not yet known whether further removal of tumor-surrounding tissue may be helpful for survival in pGBM patients. This single center retrospective study aims to assess survival benefit of lobectomy compared to gross-total resection without lobectomy for primary glioblastomas (pGBM) in non-eloquent region.

Methods:

Among the patients who had undergone surgical resection and were diagnosed as glioblastoma by histopathologic examination, we selected patients who had complete resection with the lesion localized on the non-dominant frontal or temporal lobe. Patients were divided into two groups: those who underwent gross-total resection of the tumor without additional tissue resection (GTR group) and those who underwent gross-total resection of the tumor with additional lobectomy (SupTR group). Progression-free survival (PFS), overall survival (OS) and postoperative Karnofsky performance scale (KPS) score were compared between groups.

Results:

Thirteen of 28 patients underwent complete resection only, and 15 patients underwent complete resection with additional frontal or temporal lobectomy. The median PFS time after surgery was 13.1 months (95% CI 6.4-19.8) in GTR group and 38.3 months (95% CI 11.9-64.7) in SupTR group ($p=0.098$), respectively. The median OS time after surgery was 14.4 months (95% CI 12.1-16.7) in GTR group and 35.0 months (95% CI 17.4-52.6) in SupTR group ($p=0.018$), respectively. The mean postoperative KPS score was 73.4 in GTR group and 71.33 in SupTR group ($p=0.586$), respectively.

Conclusions:

In the non-dominant frontal or temporal glioblastomas which were completely resectable, additional lobectomy improved overall survival, without deteriorating performance of the patients.