



Repeat Resection of Insular Gliomas: The MD Anderson Experience

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Introduction

Despite radical resection and adjuvant therapy, progression and/or malignant transformation of insular gliomas is common. This study reports on repeat resection of insular gliomas for progression and/or malignant transformation at our institution.

Methods

All adult patients undergoing repeat resection of insular gliomas for progression and/or malignant transformation from 1997 to 2013 were included. Clinical and outcome data was collected. Gliomas were classified by location using a modified classification system and one independent scientist performed all volumetric analyses.

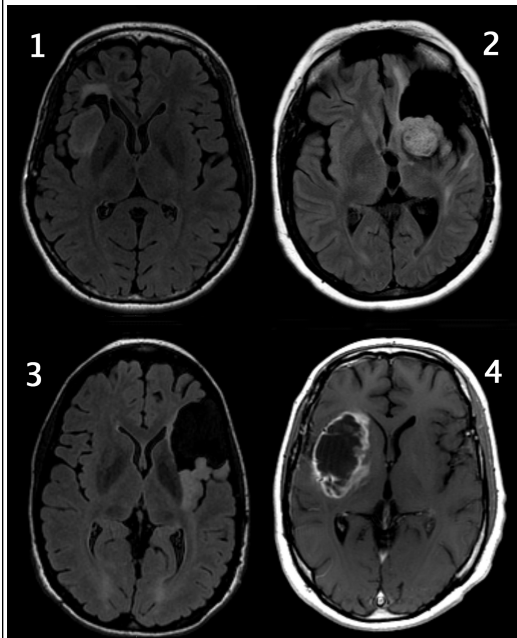
Results

Nineteen patients underwent repeat insular glioma resection for progression and/or malignant transformation. Of the 9 (47%) patients that underwent a transylvian approach, the approach for the previous surgery was transylvian in 4 patients and transcortical in 5 patients. Of the 10 (53%) patients that underwent a transcortical approach, the surgical approach for the previous surgery was transylvian in 5 patients and transcortical in 5 patients. The median extent of resection (EOR) was 70%, with an EOR of $\geq 70\%$ achieved in 58% of cases. EOR was lower for gliomas with a posterior insular component and/or medial extension. Permanent neurologic deficits occurred in two (10.5%) patients, both of which had posterior-medial gliomas. The median overall survival after repeat resection was 5.8 years for grade II gliomas, 3.8 years for grade III gliomas, and 10.2 months for grade IV gliomas. The median progression-free survival after repeat resection was 5.1 years for grade II gliomas, 1.5 years for grade III gliomas, and 0.6 years for grade IV gliomas.

Conclusions

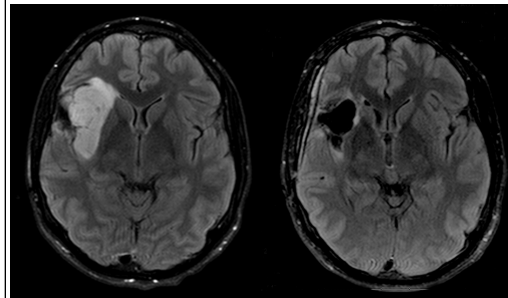
While technically challenging, repeat insular glioma resection after previous resection and adjuvant therapy can be performed with low rates of morbidity and acceptable EOR, in select patients. Classification of tumors by location provides useful information regarding the achievable EOR and possible neurologic deficits.

Effendi-Levine-Lang Classification System



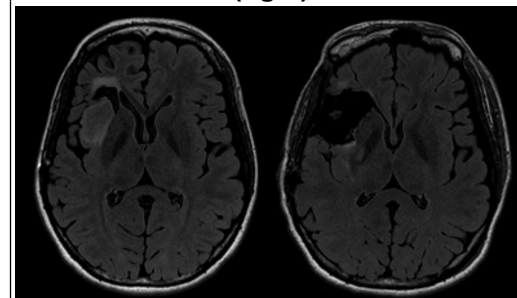
(1) anterior only, lateral only; (2) anterior only, medial extension; (3) posterior component, lateral only; (4) posterior component, medial extension.

T2 Flair MRI, pre-op (left) and post-op (right)



27 yo male with a history of a right-sided grade II mixed oligoastrocytoma s/p subtotal resection via a transylvian approach 5 years prior, followed by PCV for six cycles. Patient with radiographic progression and underwent repeat resection via a transylvian approach, with an EOR $>90\%$ and pathology consistent with anaplastic mixed oligoastrocytoma. Patient did not experience any immediate or permanent neurologic deficits following surgery.

T2 Flair MRI, pre-op (left) and post-op (right)



36 yo female with a history of a right-sided insular grade II astrocytoma s/p subtotal resection via a frontal transcortical approach 7 years prior, followed by temodar for 24 cycles. Progression noted 3 years ago, s/p Temodar and radiation. Despite therapy, patient with continued radiographic progression. Patient underwent repeat resection via a transylvian approach, with an EOR $>90\%$ and pathology consistent with anaplastic astrocytoma. Patient did not experience any immediate or permanent neurologic deficits following surgery.