

# Temporal Gliomas Surgery: A Review on Some Important Surgical and Relevant Treatment Notes



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## Abstract

Temporal gliomas are among the tumors which are located in the temporal region. This is a review on some of the important surgical and relevant notes to approach the patients with such lesions. Paying enough attention to details is of importance to get the best surgical and treatment results with lowest possible complications.

**Keywords:** Gliomas; Temporal; Surgery; Important Notes; Review

## Body

Temporal gliomas are among the tumors which are located in the temporal region. Performing surgery is indicated for temporal lobe gliomas, recurrent tumors and insular and temporal stem tumors which have extended to the temporal lobe. Before doing surgery, imaging studies should be done with computed tomography, magnetic resonance imaging, magnetic resonance spectroscopy and functional magnetic resonance imaging. Also, administration of the anticonvulsants should be done. Language dominance hemisphere's determination may be indicated by performing the Wada test either. Administration of the phenytoin should be done if the patient is not under anticonvulsants therapy before the surgery. Phenytoin may be administered with a route of fifteen milligram per kilogram of the patient's body weight. Ten milligrams of dexamethasone may also be administered [1].

A twenty percent solution of mannitol may be administered with a route of one gram per kilogram of the patient's body weight either. To avoid possible swelling of the brain, volatile inhalant anesthetics should be used with minimum doses. The arterial partial pressure of carbon dioxide with hyperventilation should be in the range of twenty-seven to thirty two millimeters of mercury. The ultrasound, language mapping, intraoperative magnetic resonance imaging, motor mapping, cavitron ultrasonic aspirator and magnetic resonance imaging navigation equipment's, may be prepared before surgery.

After putting the patient in the appropriate position for surgery meaning reverse trendelenburg position and holding the head with mayfield holder and using hose and pneumatic compression stockings, a temporal craniotomy would be done [2]. Resection of the gliomas of the dominant temporal lobe may be done with employing language mapping. For the tumors with extension to the temporal stem, motor mapping at the subcortical levels would be indicated. Cavitron ultrasonic aspirator would be used to circumnavigate the tumor. Removing most of such tumors can be done in one piece. In case there would be any uncertainty about the lesion's nature, frozen section may be done during surgery. After separating and cauterizing the tumor's blood vessels, the tumor would be removed followed by surgical lining and closing of the craniotomy. Intraoperative magnetic resonance imaging, magnetic resonance imaging navigation and ultrasound may be used to evaluate the likelihood of remaining of some parts of the tumor after the tumor's removal [3].

After completion of the surgery the magnetic resonance imaging should be done in the first twenty-four hours. Anticonvulsants administration can be ceased at seven days in case the patient does not have any past history for seizures. Pain and nausea should be prevented with prophylactic administration of appropriate medications. Also, the blood pressure of the patient should be maintained in the normal range. In case the patient

has any unexpected problem after surgery, a computerized tomography should be done without delay. In patients without having any neurological problems after surgery, administration of steroids can be ceased quickly. In case the patient needs radiotherapy after surgery, steroids should be tapered to two milligrams of dexamethasone taken twice a day [4].

Slower tapering is advisable in patients with chemotherapy wafers, brachytherapy or convection-enhanced drug delivery implants. In case the mesial temporal resections would be done, there are risks for the occurrence of causing injury to some anatomical structures like the oculomotor and trochlear nerves, the anterior choroidal artery, the internal carotid artery and the posterior cerebral artery [5]. Paying enough attention to details in necessary to get the best surgical and treatment results with lowest possible complications.

## Conclusion

It is important for the surgeons to have enough knowledge about the surgical technique and relevant issues in the treatment

of the temporal gliomas to approach the affected patients with more precision.

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