Long-term seizure control outcomes after resection of gangliogliomas.

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Abstract

BACKGROUND: Gangliogliomas are rare glioneuronal tumors that typically cause refractory seizures during the first 3 decades of life.

OBJECTIVE: To determine the prognosticators of seizure outcome after surgery for ganglioglioma.

METHODS: We reviewed the cases of 66 patients who underwent resection of gangliogliomas at the University of California, San Francisco. Demographic, seizure history, and operative data were examined for statistical association with postoperative seizure outcomes.

RESULTS: Of the 66 patients who underwent surgical resection of ganglioglioma, 49 patients (74%) presented with a history of seizures. Of those 49 patients, 50% presented with intractable epilepsy. Temporal lobe gangliogliomas were present in 76% of the patients who presented with a history of seizures. Electrocorticography was performed on 35% of the patients, and of those patients, 82% underwent extended lesionectomy to remove abnormally epileptogenic extralesional tissue. The median follow-up duration was 6.9 years, during which tumor progression occurred in 38% of patients who underwent subtotal resection and in 8% of patients who underwent gross total resection (P = .02). Overall, 85% of patients were seizure free (International League Against Epilepsy class I or II) 5 years after surgery. Subtotal resection was associated with poor seizure outcomes 1 year after resection (odds ratio = 14.6; 95% confidence interval = 2.4-87.7): rates of seizure freedom were 54% after subtotal resection, 96% after gross total resection, and 93% after gross total resection with intraoperative electrocorticography-guided extended lesionectomy.

CONCLUSION: We report excellent long-term seizure control outcomes after surgery for gangliogliomas. Intraoperative electrocorticography may be a useful adjunct for guiding extended resection in certain pharmacoresistant epilepsy patients with gangliogliomas. Subtotal resection is associated with higher rates of tumor progression and nonoptimal seizure outcomes.

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