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Prognosis and treatment of spinal cord astrocytoma.

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PURPOSE: To identify the prognostic factors for spinal cord astrocytoma and determine the effects of surgery and radiotherapy on outcome. **METHODS AND MATERIALS:** This retrospective study reviewed the cases of consecutive patients with spinal cord astrocytoma treated at Mayo Clinic Rochester between 1962 and 2005. **RESULTS:** A total of 136 consecutive patients were identified. Of these 136 patients, 69 had pilocytic and 67 had infiltrative astrocytoma. The median follow-up for living patients was 8.2 years (range, 0.08-37.6), and the median survival for deceased patients was 1.15 years (range, 0.01-39.9). The extent of surgery included incisional biopsy only (59%), subtotal resection (25%), and gross total resection (16%). Patients with pilocytic tumors survived significantly longer than those with infiltrative astrocytomas (median overall survival, 39.9 vs. 1.85 years; $p < 0.001$). Patients who underwent resection had a worse, although nonsignificant, median survival than those who underwent biopsy only (pilocytic, 18.1 vs. 39.9 years, $p = 0.07$; infiltrative, 19 vs. 30 months, $p = 0.14$). Postoperative radiotherapy, delivered in 75% of cases, gave no significant survival benefit for those with pilocytic tumors (39.9 vs. 18.1 years, $p = 0.33$) but did for those with infiltrative astrocytomas (24 vs. 3 months; Wilcoxon $p = 0.006$). On multivariate analysis, pilocytic histologic type, diagnosis after 1984, longer symptom duration, younger age, minimal surgical extent, and postoperative radiotherapy predicted better outcome. **CONCLUSION:** The results of our study have shown that histologic type is the most important prognostic variable affecting the outcome of spinal cord astrocytomas. Surgical resection was associated with shorter survival and thus remains an unproven treatment. Postoperative radiotherapy significantly improved survival for patients with infiltrative astrocytomas but not for those with pilocytic tumors.

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