Adult pilocytic astrocytoma: An institutional series and systematic literature review for extent of resection and recurrence.

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INTRODUCTION: Pilocytic astrocytoma is a classically-benign tumor that most often affects pediatric patients. Rarely, it occurs during adulthood. We present a case series and systematic literature review of adult pilocytic astrocytoma (APA) to examine the clinical presentation, extent of resection, and recurrence rate associated with this tumor in this population.

MATERIALS AND METHODS: Our institutional records were retrospectively reviewed for cases of pilocytic astrocytoma in adults. A PubMed search identified English-language studies of pathology-proven APA. A meta-analysis was performed to determine the relationship between extent of tumor resection and recurrence.

RESULTS: Forty-six patients with APA were diagnosed at our institution [mean age 33.6 ± 13.3; 24 (52%) female]. Twenty-four patients (52%) underwent gross total resection, 11 (24%) subtotal resection, 4 (9%) near total resection, 4 (9%) observation following biopsy, and 3 (6%) radiotherapy alone. Tumors recurred or progressed in 6 (13%) patients, of whom four were treated by STR and two were treated by radiotherapy alone. Thirty-nine (95%) patients were still alive at last follow-up. A systematic literature review identified 415 APA patients in 38 studies. Including our case series, seven studies reported extent of resection, follow-up, and recurrence. Of 254 patients with a weighted mean follow-up of 77.7 ± 49.6 (31-250) months, 129 (51%) were treated with GTR and 125 (49%) underwent STR. Tumor recurred in 79 (31%) patients, 22 (27%) after GTR and 57 (73%) after STR (p < 0.001).

CONCLUSION: Pilocytic astrocytoma rarely presents during adulthood. Overall, prognosis is favorable and survival rates are high. APA recurrence is more likely following STR, and the goal of surgery should always be GTR when feasible.

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