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From the Archives of the AFIP

Pilocytic Astrocytoma: Radiologic-Pathologic Correlation[1]

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Pilocytic astrocytoma is the most common pediatric central nervous system glial neoplasm and the most common pediatric cerebellar tumor. This tumor has a noteworthy benign biologic behavior that translates into an extremely high survival rate—94% at 10 years—that is by far the best of any glial tumor. Most patients present in the first 2 decades, and clinical symptoms and signs are usually of several months duration and directly related to the specific location of the tumor. The cerebellum, optic nerve and chiasm, and hypothalamic region are the most common locations, but the tumor can also be found in the cerebral hemisphere, ventricles, and spinal cord. Surgical resection is the treatment of choice for all tumors, except for those involving the optic pathway and hypothalamic region, which may be treated with radiation therapy and chemotherapy. Cross-sectional imaging often demonstrates a classic appearance: a cystic mass with an enhancing mural nodule. Less common appearances are quite nonspecific. Surrounding vasogenic edema is rarely present, and this feature provides a valuable clue to the correct diagnosis. Accurate interpretation of imaging studies plays an essential role in directing treatment of these tumors, particularly when they arise in the optic pathway of patients with neurofibromatosis type 1. Disseminated disease and recurrence are extremely rare.

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Radiographics November/December 2004