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From the archives of the AFIP: medulloblastoma: a comprehensive review with radiologic-pathologic correlation.

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Abstract

Medulloblastoma is the most common pediatric central nervous system malignancy and the most common primary tumor of the posterior fossa in children. This highly malignant neoplasm occurs more frequently in males and usually before 10 years of age. Clinical symptoms and signs are generally brief, typically less than 3 months in duration, and reflect the strong predilection of this tumor to arise within the cerebellum, most often in the vermis. Although much less common, the disease may also occur in adults, usually in the 3rd and 4th decades of life. Surgical resection, radiation therapy, and chemotherapy have substantially lowered the mortality associated with this tumor, with 5-year survival rates now commonly well above 50%. Still, both dissemination at the time of diagnosis and recurrence remain obstacles in achieving a cure. The tumor has characteristic hyperattenuation on unenhanced computed tomographic scans that reflects the high nuclear-cytoplasmic ratio seen at histologic analysis. The tumor typically appears heterogeneous on images, findings that are related to cyst formation, hemorrhage, and calcification and that are even more pronounced with magnetic resonance (MR) imaging. Evidence of leptomeningeal metastatic spread is present in 33% of all cases at the time of diagnosis and is well evaluated with contrast-enhanced MR imaging of the brain and the spine. Although controversial, postoperative surveillance with MR imaging is performed at most institutions in the hope of facilitating a better outcome. With continued research, treatment of these common neoplasms should improve, perhaps even achieving a cure in the future.

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