

Infratentorial oligodendroglioma

Oligodendrogliomas are primarily supratentorial tumors. However, infrequently, they can also arise from infratentorial structures. There are only limited numbers of radiological articles on the specific imaging findings of this entity.

Purpose: To investigate the imaging findings of infratentorial oligodendrogliomas.

Material and methods: We retrospectively reviewed the magnetic resonance imaging (MRI) findings and clinical records of six patients with pathologically proven infratentorial oligodendrogliomas between December 1994 and April 2008. Tumor location, circumscription, signal intensity (SI), enhancement pattern, the presence of restricted diffusion, and the change of the relative cerebral blood volume (rCBV) on MRI were evaluated.

Results: In total, six patients (three male, three female; mean age 65 years, range 51-75 years) were included. The pathology revealed anaplastic oligodendrogliomas in all six patients. The location was cerebellum in four patients, medulla in one patient, and fourth ventricle and tegmentum in one patient. Three of them were of the infiltrative type, and the other three of the mass-forming type. The solid component of the tumors showed high SI (n=6) on FLAIR and T2-weighted images, and low (n=5) or iso (n=1) SI on T1-weighted images. All infiltrative lesions showed multifocal patchy enhancement, and mass-forming lesions showed heterogeneous enhancement (n=2) and diffuse homogeneous enhancement (n=1). Three patients had restricted diffusion, and one had leptomeningeal seeding. There was markedly increased rCBV on perfusion-weighted image (PWI) in one patient. Calcification or hemorrhage was not found. Tumor progression after operation, radiation therapy, gamma-knife surgery, or chemotherapy developed in five patients.

Conclusion: Although infratentorial oligodendrogliomas did not show characteristic imaging findings, there was a tendency toward multifocal heterogeneous enhancement and absent or mild mass effect of infiltrative lesions. Infratentorial oligodendrogliomas may be more malignant than supratentorial oligodendrogliomas ¹⁾

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