Advanced MR Imaging in Pediatric Brain Tumors, Clinical Applications.

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Abstract

Advanced MR imaging techniques, such as spectroscopy, perfusion, diffusion, and functional imaging, have improved the diagnosis of brain tumors in children and also play an important role in defining surgical as well as therapeutic responses in these patients. In addition to the anatomic or structural information gained with conventional MR imaging sequences, advanced MR imaging techniques also provide physiologic information about tumor morphology, metabolism, and hemodynamics. This article reviews the physiology, techniques, and clinical applications of diffusion-weighted and diffusion tensor imaging, MR spectroscopy, perfusion MR imaging, susceptibility-weighted imaging, and functional MR imaging in the setting of neuro-oncology.

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