Post-treatment imaging changes in primary brain tumors.
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Abstract
Discerning between primary brain tumor progression and treatment-related effect is a significant issue and a major challenge in neuro-oncology. The difficulty in differentiating tumor progression from treatment-related effects has important implications for treatment decisions and prognosis, as well as for clinical trial design and results. Conventional MRI is widely used to assess disease status, but cannot reliably distinguish between tumor progression and treatment-related effects. Several advanced imaging techniques are promising, but have yet to be prospectively validated for this use. This review explores two treatment-related effects, pseudoprogression and radiation necrosis, as well as the concept of pseudoresponse, and highlights several advanced imaging modalities and the evidence supporting their use in differentiating tumor progression from treatment-related effect.

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