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Post-ictal changes presenting as late pseudoprogression on MRI and PET in a patient with diffuse glioma: Case report and brief literature review

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Abstract

Following completion of adjuvant radiation and chemotherapy imaging surveillance forms a major role in the management of diffuse gliomas. The primary role of imaging is to detect recurrences earlier than clinical symptomatology. Magnetic resonance imaging (MRI) is considered the gold standard in follow-up protocols owing to better soft tissue delineation and multiparametric nature. True recurrence can often mimic treatment-related changes, it is of paramount importance to differentiate between the two entities as the clinical course is divergent. Addition of functional sequences like perfusion, spectroscopy and metabolic imaging can provide further details into the microenvironment. In equivocal cases, a follow-up short interval imaging might be obtained to settle the diagnostic dilemma. Here, we present a patient with diagnosis of recurrent oligodendroglioma treated with adjuvant chemoradiation, presenting with seizures five years post-completion of chemotherapy for recurrence. On MRI, subtle new onset gyral thickening of the left frontal region with mild increase in perfusion and patchy areas of raised choline. FET-PET (fluoro-ethyltyrosine) showed an increased tumour-to-white matter (T/Wm) ratio favouring tumour recurrence. Based on discussion in a multi-disciplinary joint clinic, short interval follow-up MRI was undertaken at two months showing decrease in gyral thickening and resolution of enhancing areas in left frontal lobe. Repeat imaging one year later demonstrated stable disease status without further new imaging findings. Given the changes resolving completely without any anti-tumoral intervention, we conclude this to be peri-ictal pseudoprogression, being the second such case described in India.

Keywords: MRI; glioma; post-ictal.