ABSTRACT

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Early stage glioblastoma: retrospective multicentric analysis of clinical and radiological features.

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OBJECTIVES: The aim of this study was to report our experience with early stage glioblastoma (e-GB) and to investigate the possible clinical and imaging features that may be helpful to the radiologist to correctly diagnose this entity.

METHODS: We performed a retrospective research of patients diagnosed with glioblastoma at two hospitals during a 10-year period. We reviewed all pre-operative MR and included only patients with early stage GB lesions, characterized by hyperintense on T2-weighted signal, with or without contrast-enhancement at post-contrast T1-weighted images, without "classic" imaging appearance of GB (necrosis, haemorrhage, oedema). All preoperative MR were evaluated by an experienced neuroradiologist and information on patients' demographics, clinical presentation, follow-up, and histopathology results study were collected. When available, preoperative CT examination was also evaluated.

RESULTS: We found 14 e-GBs in 13 patients (9 males, 4 females, median age 63 years) among 660 patients diagnosed with GB between 2010 and 2020. In 10 lesions, serial imaging revealed the transformation of e-GB in classic glioblastoma in a median time of 3 months. Clinical presentation included stroke-like symptoms, vertigo, seizures and confusion. Preoperative plain CT was performed in 8/13 cases and in 7 e-GBs presented as a hyperdense lesion. Ten out of 14 lesions transformed in classic GB before surgical intervention or biopsy. All lesions revealed typical immunohistochemical pattern of primary glioblastoma.

CONCLUSIONS: E-GB is a rare entity that can often lead to misdiagnosis. However, the radiologist should be aware of its imaging appearance to suggest the diagnosis and to request close imaging follow-up, hopefully improving the prognosis of this very aggressive disease.

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