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Gliomatosis cerebri: clinicopathologic study of 33 cases and comparison of mass forming and diffuse types.

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OBJECTIVE: Gliomatosis cerebri (GC) is defined as a diffuse neoplastic glial cell infiltration of the brain with the preservation of anatomical architecture and the sparing of neurons and can be classified into Type 1 (diffuse) and Type 2 (mass forming) GCs macroscopically. There is little information on subtypes of GC. The aim of this study was to evaluate the clinicopathologic findings of GCs and to compare the clinicopathologic findings between Type 1 and Type 2 GCs. **MATERIAL:** A total of 33 cases of GC were obtained from pathology file of Samsung Medical Center. The diagnosis was based on magnetic resonance imaging findings and histological confirmation for all patients. Fifteen cases were classified into Type 1 and 18 were Type 2 based on the MR images. **METHODS:** Clinical information included patients' age, sex, tumor extent, treatment modality and survival. Pathologic features included the amount of rod cells and cytologic anaplasia such as multinucleated tumor giant cells, endothelial cell proliferation, or mitosis. Immunohistochemical study was performed for GFAP, O1, Gal-C, Ki-67, and p53. Clinicopathologic comparison between subtypes and statistical analysis were performed. **RESULTS:** Median age at diagnosis was older (56 years) in Type 1 than in Type 2 (44 years). Male to female ratio was about 1.54:1. Mean survival time was shorter (21 months) in Type 2 than in Type 1 GCs (24 months) ($p = 0.0447$). Histologically, 33 cases of GC were classified into two histologic grades (low and high grade) by cytologic anaplasia. High-grade GC was more common in Type 2 than Type 1 ($p = 0.027$). Immunohistochemical results demonstrated that the infiltrating tumor cells were undifferentiated cells with astrocytic or oligodendroglial differentiation. Ki-67 labeling index was correlated with subtypes ($p = 0.0096$). Pathologic features were not correlated with survival. **CONCLUSIONS:** Type 1 and 2 GCs are somewhat different in clinical presentation and pathologic features. The age group, survival time, histologic grade, and Ki-67 labeling index were significantly correlated with subtypes of GCs. Type 2 GC was correlated with poor survival but histologic grade was not.

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