Microcystic Meningioma: Importance of Obvious Hypointensity on T1-Weighted MR Image

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摘要

Abstract

Purpose: To investigate the sensitivity and specificity of various magnetic resonance imaging findings for microcystic meningioma. Methods: Magnetic resonance images of 26 patients with microcystic meningioma (8 from our series and 18 from the literature) and 32 control subjects with other types of meningiomas were evaluated for obvious hypointensity relative to the cerebral cortex on T1-weighted images (T1WIs), obvious hyperintensity relative to the cerebral cortex on T2-weighted images (T2WIs), a radial or sunburst vascular pattern, marginal and reticular enhancement, severe peritumoral brain edema, and the dural tail sign. Differences in the frequencies of these findings between the microcystic and control groups were examined by means of the x2 test. The sensitivity, specificity, positive predictive value, and negative predictive value of these findings in the diagnosis of microcystic meningioma were calculated. Multivariate analysis of the findings was also performed. Results: The frequencies of obvious hypointensity on T1WI, obvious hyperintensity on T2WI, marginal and reticular enhancement, and severe peritumoral brain edema significantly differed between the microcystic and control groups (all $P < 0.005$). Sensitivities and specificities of hypointensity on T1WI and hyperintensity on T2WI in the diagnosis of microcystic meningioma were greater than 87%. After multivariate analysis, obvious hypointensity on T1WI was the only significant predictor of microcystic meningioma, with an odds ratio of 75.0 (95% confidence interval, 3.7-1536.0). Conclusion: Obvious hypointensity relative to the cerebral cortex on T1WI was the most valuable magnetic resonance finding in the diagnosis of microcystic meningioma.