High-signal-intensity abnormalities evaluated by 3D fluid-attenuated inversion recovery imaging within the drainage territory of developmental venous anomalies identified by susceptibility-weighted imaging at 3 T

Abstract
PURPOSE:
To evaluate brain parenchymal high-signal-intensity abnormalities within the drainage territory of developmental venous anomalies (DVAs) identified by susceptibility-weighted imaging (SWI) at 3 T.

METHODS:
One hundred and thirty patients with 137 DVAs identified by SWI were retrospectively studied. 3D fluid-attenuated inversion recovery (FLAIR) images were reviewed for parenchymal high-signal-intensity abnormalities and SWI images were reviewed for hypointense foci (microhemorrhages or cavernous malformations) adjacent to DVAs. Patient age, the degree of underlying white matter disease, DVA location (supratentorial or infratentorial), and the presence or absence of hypointense foci were compared across DVAs with and without high-signal-intensity abnormalities. The correlation between patient age and the size of any high-signal-intensity abnormality was analyzed using linear regression.

RESULTS:
Forty-two of 137 DVAs (30.7%) had high-signal-intensity abnormalities. An adjusted prevalence of 18/71 (25.4%) was obtained after excluding patients with considerable underlying white matter disease. Only DVA location (supratentorial) was associated with the presence of high-signal-intensity abnormalities ($p < 0.05$). There was a significant correlation between patient age and the size of high-signal-intensity abnormalities ($p < 0.01$).

CONCLUSIONS:

3D FLAIR imaging permits detection of small high-signal-intensity abnormalities within the drainage territory of DVAs. The size of high-signal-intensity abnormalities increased with patient age.

掲載予定

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