Susceptibility-weighted imaging in familial cerebral cavernous malformations

Figure 1 Axial T2*-weighted gradient echo MRI sequence showing multiple cerebral cavernous malformations

A 59-year-old man with a family history of cerebral cavernous malformations (CCM) presented with focal seizures. T2*-weighted gradient echo (GRE) images showed multiple lesions consistent with cavernous malformations (figure 1). Susceptibility-weighted images (SWI) detected nearly triple the number of lesions than were seen with the GRE sequence (figure 2).

SWI is a relatively new MRI technique that is optimized for detection of magnetic susceptibility effects.¹ SWI is more sensitive than T2*-weighted GRE images in detecting CCMs.^{2,3} As with GRE techniques, SWI demonstrates “blooming” of hemosiderin containing lesions.³ SWI may prove to be useful in identifying the true extent of CCMs or in confirming the presence of suspected small CCMs.

Figure 2 Axial susceptibility-weighted MRI sequence showing nearly triple the number of cerebral cavernous malformations when compared to conventional T2*-weighted gradient echo MRI sequence

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