

Figure 35-1

The imaging characteristics of hemorrhage differ little at 3 T from that at 1.5 T, other than the improved sensitivity to blood products that exhibit T2* effects (deoxyhemoglobin, intracellular methemoglobin, and hemosiderin). **Figure 35-1** presents (A) axial FLAIR and (B) axial, (C) sagittal, and (D) coronal T1-weighted scans in a young man with a subacute, extracellular methemoglobin subdural hematoma (high signal intensity on both T1- and T2-weighted scans). Note the exquisite depiction of the adjacent sulcal effacement. **Figure 35-2** presents (A) sagittal T1- and (B) axial T2-weighted images from the exam of an 88-year-old woman with a right parietal hematoma, 2 weeks in age. The images in **Fig. 35-2** are 3 mm

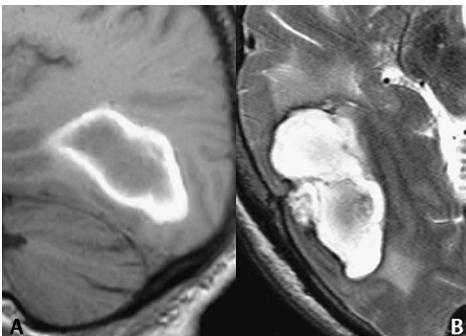


Figure 35-2

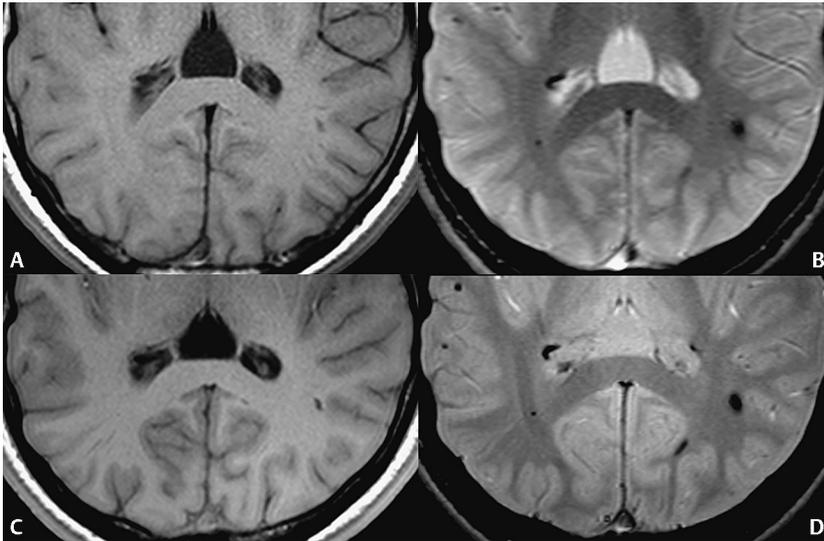


Figure 35-3

in slice thickness, with scan times of 1:15 and 1:30. The periphery of the hematoma is composed of extracellular methemoglobin. Hemosiderin is likely already present at the interface between the hematoma and surrounding brain, leading to the thin rim of low signal intensity on the T2-weighted scan.

Figures 35-3 and **Fig. 35-4** present scans from a patient with multiple cavernous malformations, imaged at both 1.5 T (**Figs. 35-3A, 35-3B, and Fig. 35-4A**) and 3 T (**Fig. 35-3C, 35-3D, and Fig. 35-4B**). In **Fig. 35-3**, (A, C) T1-weighted and (B, D) GRE T2-weighted scans are compared. In **Fig. 35-4**, T2 weighted FSE scans are compared. The images at 1.5 T were 5 mm in slice thickness, as compared with 3 mm at 3 T. Scan times were comparable at 1.5 versus 3 T, with the exception that the T1-weighted scan required 3:09 (min:sec) at 1.5 T versus 1:05 at 3 T. Note the improved depiction of the many lesions in this patient at 3 T, due to a combination of the decreased slice thickness (reduced partial volume effect) together with the increased sensitivity to susceptibility effects. Examining each sequence pair (specifically the respective scans at 1.5 and 3 T), the lesions are best visualized at 3 T, with low signal intensity due to their hemosiderin content. The images at 1.5 T also appear slightly “grainy,” due to lower SNR.

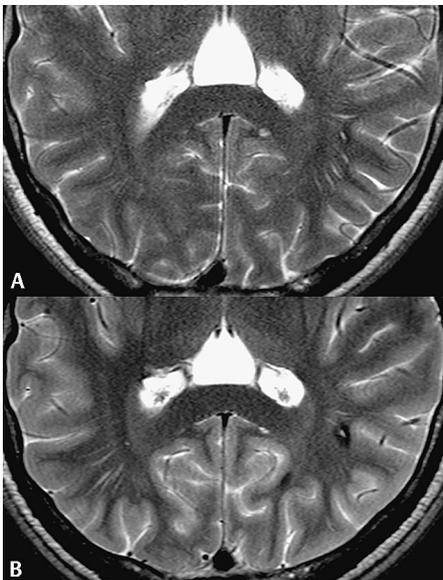


Figure 35-4