A 19-year-old woman was hit by a car and found to be somnolent and inattentive on neurologic examination. Head CT demonstrated bifrontal traumatic microbleeds (figure), suggesting hemorrhagic diffuse axonal injury (DAI). MRI performed 7 days later showed extensive diffusion restriction in the genu of the corpus callosum extending into the bifrontal white matter. Follow-up MRI on day 27 confirmed resolution of these signal changes. The time course for diffusion restriction in DAI is variable, persisting up to 18 days post-trauma. Its pathogenesis has yet to be fully elucidated, with potential etiologies including swelling of sheared axons, Wallerian degeneration of interhemispheric neurons, and microvascular injury causing ischemia.2

REFERENCES

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Teaching NeuroImages: Restricted diffusion in the corpus callosum after traumatic diffuse axonal injury
Brian L. Edlow and Eli L. Diamond
Neurology 2010;75:e69
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