Multiple punctate cerebral hemorrhages in acute leukemia with blast crisis

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A 56-year-old man and a 29-year-old woman presented to our hospital with symptoms of headache and encephalopathy. Both patients proved to have acute myeloid leukemia with marked leukocytosis, elevated blast counts, and thrombocytopenia. Brain MRI gradient-echo images showed an unusual miliary pattern of multiple acute, small cerebral hemorrhages involving the cerebral hemispheres and the corpus callosum. It is believed that marked leukocytosis results in hyperviscosity, leukostasis, hypoxic vasodilatation, and eventual rupture of small cerebral vessels.^{1,2} Both patients regained normal neurologic function after induction chemotherapy, suggesting that this pattern of hemorrhage is not necessarily associated with poor prognosis (figure).

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Figure. Patient 1 (A) and Patient 2 (B). Noncontrast head CT scan image (left panel) shows a few scattered cerebral hemorrhages (arrows). The corresponding gradient-echo MR image (right panel) shows an unusual miliary pattern of numerous punctate cerebral hemorrhages.

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