Cerebral leukostasis manifesting as multifocal intracerebral hemorrhage

A patient with chronic myeloid leukemia in accelerated phase was admitted because of shortness of breath. Complete blood count showed: hemoglobin: 7.1 g/dL, platelet count: 60×10⁹/L, leukocyte count: 535×10⁹/L with 31% blasts, 5% promyelocytes, 27% myelocytes, 6% metamyelocytes, 18% neutrophils and 5% basophils. A coagulation screen showed normal prothrombin and activated partial thromboplastin times. Urgent leukopheresis and intravenous cytarabine were commenced but the patient became stuporous and comatose despite rapid reduction of the leukocyte count to 415×10⁹/L. Computed tomography showed multifocal areas of intracerebral hemorrhages (Figure 1). The patient died shortly afterwards despite aggressive resuscitation. The family refused a post-mortem examination.

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Figure 1. CT scan of the brain showed multiple hyperdense foci (arrows) in the grey-white matter junction. There was a thin rim of perifocal edema around the two major hemorrhagic lesions.