SWAN MRI revealing multiple microhemorrhages secondary to septic emboli from mucormycosis

Figure 1 Brain MRI

(A) CT: left parietal-occipital hemorrhage with surrounding edema. (B) Fluid-attenuated inversion recovery MRI. (C, E) T2-gradient recall echo (GRE) suggestive of hemorrhage and 1 microhemorrhage. (D, F) T2 star-weighted angiography reveals many microhemorrhages (punctate black regions within white circle), likely secondary to septic emboli. White arrow corresponds to arrow in figure 2A.

A 77-year-old man with myelodysplastic syndrome presented with fever and acute renal failure, followed by right-sided hemiparesis, neglect, and aphasia. Neuroimaging revealed a left parietal-occipital ICH with extensive edema. T2-star susceptibility weighted angiography (SWAN) revealed multiple microhemorrhages within the swollen hemisphere (figure 1). Autopsy findings included perivesical/peripelvic abscesses (*Rhizopus* species) and pulmonary septic thromboembolus. Neurologic deficits resulted from septic emboli/microemboli of this angioinvasive fungus causing focal encephalitis, ruptured mycotic aneurysm, and multiple microhemorrhages (figure 2). Infection from the order *Mucorales* constitutes mucormycosis.

SWAN imaging delineates microhemorrhages better than conventional MRI (T2 gradient recall echo). Microhemorrhages occur in chronic hypertension, cerebral amyloid angiopathy, septic emboli, cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy, familial CNS cavernous malformations, and other rare conditions.¹

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(A) Coronal section of left parietal cortex reveals hemorrhage (white arrow) with surrounding necrosis and edema. (B, C) Microscopic sections show neutrophilic infiltrate and aseptate branching fungal hyphae (black arrows) on hematoxylin & eosin and Gomori methenamine silver stains (black marker = 20 μ m).

1. Blitsein MK, Tung GA. MRI of cerebral microhemorrhages. *AJR Am J Roentgenol* 2007;189:720–727.

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