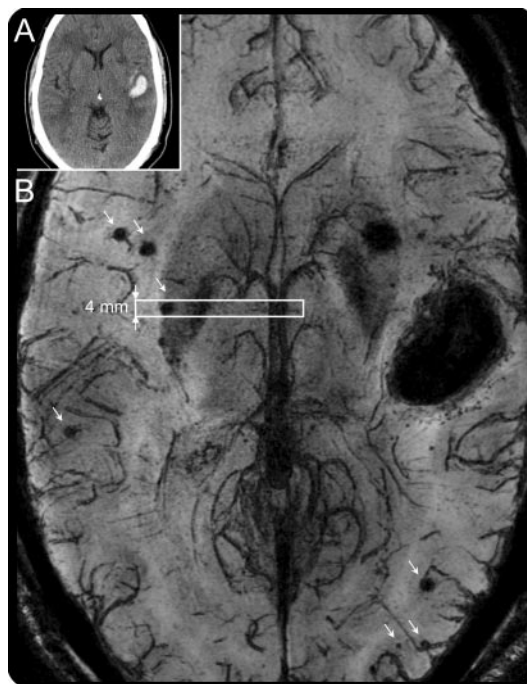


Hypertensive cerebral hemorrhage

Imaging the leak with 7-T MRI

Figure 1 Symptomatic hypertensive hemorrhage and multiple microbleeds



Transversal CT scan (A) and T2*-weighted 7-T MRI scan (B) with the symptomatic temporal lobe hemorrhage. Arrows indicate hemosiderin deposits in previous asymptomatic hemorrhages. The rectangle indicates the location of the coronal images in figure 2.

A 42-year-old man was admitted with acute headache, dysphasia, and severe hypertension. CT showed a left temporal hemorrhage. Seven-tesla MRI showed widespread leukoencephalopathy and over 100 microbleeds of earlier date. T2*-weighted images with short echo time, used for noncontrast enhanced magnetic resonance angiography,¹ revealed a direct relation between some microbleeds and a small penetrating artery in a single scan acquisition (figures 1 and 2).

Our diagnosis was hypertensive cerebral hemorrhage. Antihypertensive treatment was initiated. He recovered completely. The spatial relation between the microbleeds and the artery remained on repeated 7-T MRI after 6 months. The leukoencephalopathy had largely resolved. Owing to its high sensitivity to susceptibility effects, 7-T MRI now demonstrates noninvasively that hypertensive hemorrhages may emerge from the penetrating arteries.

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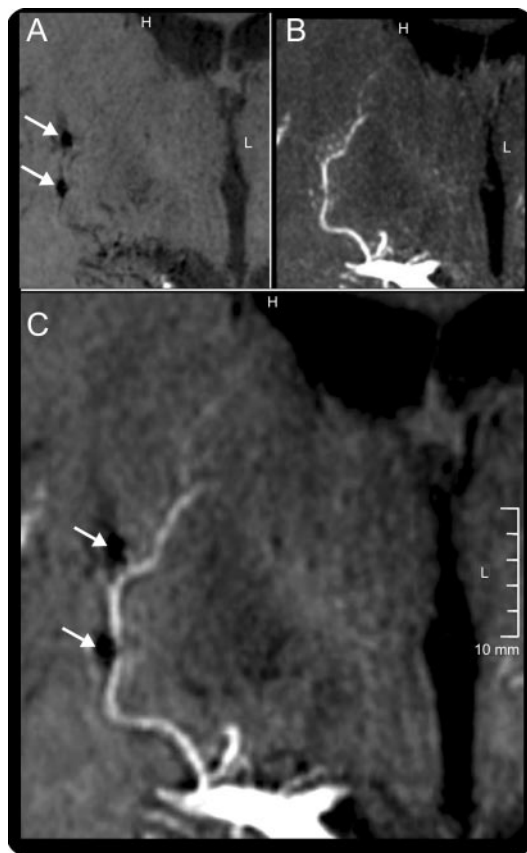
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Disclosure: Dr. Biessels and Dr. Zwanenburg report no disclosures. Dr. Visser is a full-time employee of Philips HealthCare. Dr. Frijns reports no disclosures. Dr. Luijten serves as Chief Scientific Officer for the Center for Translational Molecular Medicine and receives research support from Philips Health Care.

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Figure 2 Microbleeds in direct relation with penetrating artery



Coronal minimum (A) and maximum (B) intensity projections generated from the same T2*-weighted scan (echo time 3.5 msec), showing microbleeds (arrows) and a penetrating artery (B). Combination of these projections (C) reveals a direct correlation between the microbleeds and the artery.

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Neurology 2010;75;572-573

DOI 10.1212/WNL.0b013e3181ec7f99

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