Teaching *NeuroImages*: MRI-visible Virchow-Robin perivascular spaces in cerebral small-vessel disease

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Figure Neuroimaging findings in cerebral amyloid angiopathy

(A) Axial susceptibility-weighted imaging (SWI) shows multiple cortical (green arrow) and subcortical microbleeds in a 69-year-old woman with cerebral amyloid angiopathy (CAA) and hypertensive arteriopathy (case 2). (C) SWI discloses recurrent infratentorial and supratentorial microbleeds in a 71-year-old woman with CAA (case 1). Axial T2 sequence depicts severe perivascular spaces enlargement in basal ganglia (yellow arrow, B) and centrum semiovale (red arrow, D).

MRI-visible perivascular spaces (PVS) in centrum semiovale white matter (CS) have been proposed as a novel neuroimaging marker for cerebral amyloid angiopathy (CAA).^{1,2} Progressive β -amyloid deposition in small cortical and leptomeningeal arteries in CAA may gradually impair perivascular drainage and cause retrograde PVS dilation.^{1,2}

We describe the neuroimaging findings of 2 patients who were diagnosed with small-vessel pathologies: probable CAA (case 1, figure, C and D) and probable CAA and hypertensive arteriopathy (case 2, figure, A and B). Susceptibility-weighted brain MRI showed

extensive cortical and infratentorial microbleeds (figure, A and C, I/II, respectively) and severe PVS enlargement in basal ganglia (figure, B) and CS (figure, D). MRI-visible PVS may identify patients at risk of developing CAA.

AUTHOR CONTRIBUTIONS

Dr. Voumvourakis: drafting and revising the manuscript. Dr. Tsivgoulis: data collection, drafting the manuscript. Dr. Papathanasiou: data collection, critical comments during manuscript revision. Dr. Simitsi: data collection, critical comments during manuscript revision. Dr. Stefanis: critical comments during manuscript revision. Dr. Papageorgiou: data collection (neurobehavioral evaluation), critical comments during manuscript revision.

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DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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