Cerebral White Matter Lesions, Retinopathy, and Stroke

To the Editor:

I read with interest the study by Vermeer and colleagues on the risk of stroke associated with MRI-defined white matter lesions (WML) in the Rotterdam Scan Study. As cerebral MRI becomes a routine diagnostic test for widening indications of neurological disorders, this study provides further data on the clinical significance of these lesions in asymptomatic elderly people. I draw the attention of the authors to a recent analysis from the Atherosclerosis Risk in Communities (ARIC) Study. In the ARIC Study, middle-aged people with subclinical cerebral WML detected on MRI were also more likely to have an incident stroke over a 5-year period (multivariable-adjusted relative risk, 3.4; 95% confidence interval, 1.5 to 7.7) than persons without WML. The magnitude of the relative risk appears to be within the range reported in the Rotterdam Study.

In addition, persons with both WML and signs of retinopathy (eg, microaneurysms, retinal hemorrhages) detected from photographs had a much higher incidence of stroke (multivariable-adjusted relative risk, 18.1; 95% confidence interval, 5.9 to 55.4) than those without either cerebral or retinal lesions, independent of stroke risk factors. We hypothesized that subclinical cerebral microvascular pathology is more extensive when WML and retinopathy are simultaneously present. Alternatively, WML may reflect heterogeneous entities, and the presence or absence of retinopathy may help distinguish WML that are more “pathological” (with higher risk of stroke) from those more “benign” in nature. I believe that the participants of the Rotterdam Study had retinal photographs that were graded for retinopathy lesions. I would encourage the authors to explore similar analyses to confirm the ARIC findings.

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