ON-LINE APPENDIX

Vascular Risk Factors

Cardiovascular risk factors were collected using structured questionnaires, physical examinations, and blood tests. Blood pressure was measured 3 times, and the mean value of the 3 readings was used. Hypertension was defined as self-reported hypertension, treatment with antihypertensive medication, systolic blood pressure of ≥140 mm Hg, or diastolic blood pressure of ≥90 mm Hg. Diabetes mellitus was defined as self-reported diabetes, use of oral antidiabetic drugs or insulin, or fasting serum glucose ≥126 mg/dL. Hyperlipidemia was defined as self-reported hyperlipidemia, treatment with antihyperlipidemic medication, total cholesterol of >200 mg/dL, or low-density lipoprotein of >130 mg/dL. Smoking status was defined as a current smoker or a former smoker.

Diffusion Imaging Processing

Diffusion-weighted images were acquired using a single-shot spin-echo, echo-planar imaging sequence covering the whole brain with the following parameters: 62 axial slices, slice thickness = 2.2 mm without gap, TR = 8000 ms, TE = 89 ms, flip angle = 90°, 30 diffusion directions with b=1000 s/mm^2 and an additional image without diffusion weighting (ie, b=0 s/mm^2), acquisition matrix = 128 × 128, FOV = 280 × 280 mm^2, average = 2. Diffusion tensor images were processed using PANDA, a pipeline toolbox for diffusion MRI analysis.[1] Briefly, the procedure included skull-stripping, eddy current and head motion correction, diffusion parameter calculation, and spatial normalization. FA, MD, axial diffusivity, and radial diffusivity maps in native space and standard Montreal Neurological Institute space were generated for each individual.

REFERENCE

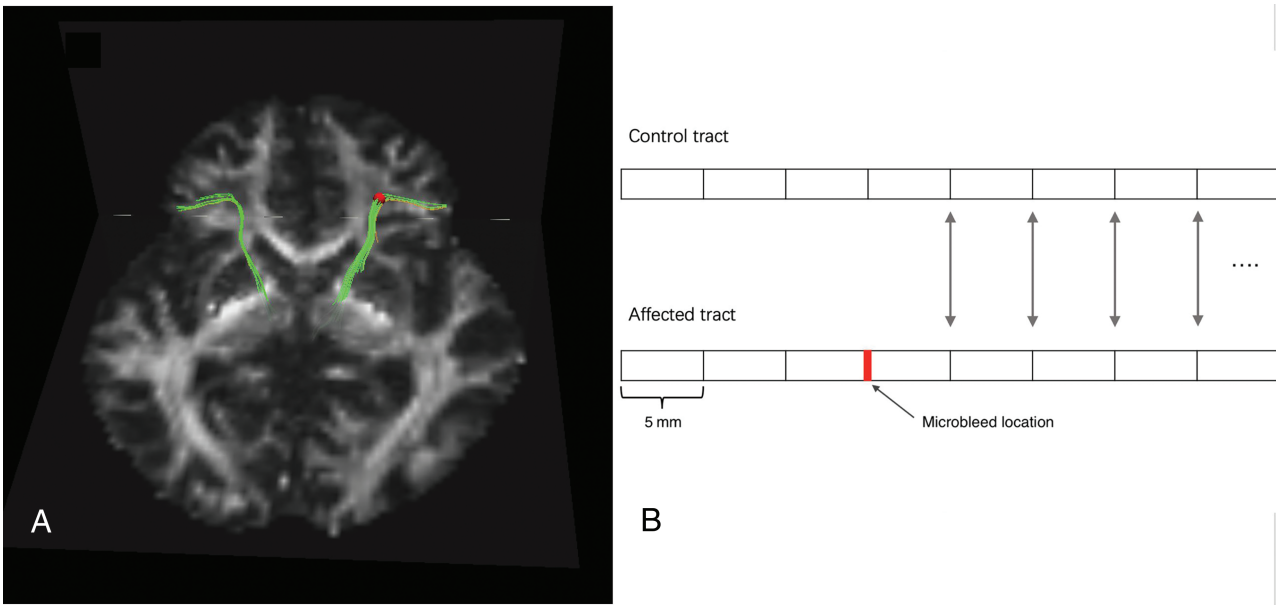
1. Cui Z, Zhong S, Xu P, et al. **PANDA: a pipeline toolbox for analyzing brain diffusion images.** *Front Hum Neurosci* 2013;7:42 CrossRef Medline

On-line Table: Characteristics of the study population

ID	Age (yr)	Sex	CMB Location	Tract Volume with CMB (mm^3)	Tract Volume Contralateral Hemisphere (mm^3)[a]
1	56	F	External, R	1284	1558
2	61	F	Internal, R	2284	3147
3	62	M	External, R	1137	1147
4	60	F	Occipital, R	1600	1337
5	54	M	Frontal, L	832	821
6	35	F	Subcortical, R	1484	1937
7	45	F	Temporal, L	811	737
8	70	F	Subcortical, L	2074	2053
9	72	F	Temporal, L	1137	1771
10	47	M	Temporal, R	1348	1316
11	59	M	Temporal, R	2011	1821
12	59	M	Temporal, R	2000	1505
13	63	F	Occipital, R	2737	1873
14	70	F	Frontal, R	1084	1328
15	56	M	Frontal, R	1063	1358
16	48	F	Occipital, L	1305	2063
17	64	F	Parietal, R	4895	4747
18	64	M	Parietal, R	1421	1368
19	65	M	Frontal, R	737	937
20	51	F	Temporal, L	4589	3126

Note:—R indicates right; L, left; External, external capsule; Internal, internal capsule; Occipital, occipital lobe; Frontal, frontal lobe; Subcortical, subcortical white matter; Temporal, temporal lobe; Parietal, parietal lobe; ID, identification.

[a] The estimated tract volume did not differ between the affected and control tracts (P > .05).



ON-LINE FIGURE. *A*, Example of a white matter tract containing a microbleed and the corresponding nonaffected tract in the contralateral hemisphere. Red indicates the location of the microbleed. *B*, Comparisons were made between the affected and control tracts for each point at 5-mm intervals. For microbleeds located at the end of the tract, diffusion properties were investigated along the tract pathways. For microbleeds located in the middle of the tract, diffusion properties were investigated at both sides; those segments with the same distance from the microbleeds were averaged for data analysis.