Supplementary Table 1. Hemodynamic parameters in patients with asymptomatic middle cerebral artery stenosis, symptomatic middle cerebral artery stenosis with infarction due to artery-to-artery embolism, or symptomatic middle cerebral artery stenosis with infarction due to local branch occlusion

Characteristic	aMCA (n=46)	sMCA		P
		AAE (n=32)	LBO (n=32)	
Average WSS (N/m^2)				
Initial	2.36±0.94	1.78±0.84	1.72±0.81	0.002
Upstream	2.09±0.94	2.08±0.99	1.94±0.79	0.739
Minimal lumen area	2.12±0.95	1.69±1.02	1.93±0.92	0.154
Downstream	1.84±1.15	1.18±0.89	1.78±0.96	0.014
Terminal	1.79±1.12	1.30±0.81	1.66±0.84	0.081
Variability of average WSS				
SD	0.80±0.33	0.63±0.33	0.58±0.28	0.006
CoV	0.45±0.25	0.44±0.23	0.36±0.20	0.228
Ratio of average WSS				
Highest/initial	1.50±0.75	1.79±1.25	1.50±0.53	0.288
Lowest/initial	0.51±0.35	0.53±0.32	0.68±0.32	0.073
Location of highest average WSS				0.065
Initial	16 (34.8)	6 (18.8)	2 (8.0)	
Upstream	7 (15.2)	11 (40.6)	10 (31.3)	
Minimal lumen area	9 (19.6)	10 (28.1)	11 (34.4)	
Downstream	9 (19.6)	3 (9.4)	7 (21.9)	
Terminal	5 (10.9)	2 (6.3)	2 (6.3)	

Values are presented as mean±standard deviation or number (%). The three groups were compared using Pearson's chi-square tests or one-way analysis of variance, as appropriate.
aMCA, asymptomatic middle cerebral artery stenosis; sMCA, symptomatic middle cerebral artery stenosis; AAE, infarction due to artery-to-artery embolism; LBO, infarction due to local branch occlusion; WSS, wall shear stress; SD, standard deviation; CoV, coefficient of variation.

Supplementary Table 2. Univariable analysis of factors associated with ischemic stroke caused by artery-to-artery embolisms

Variable	Unadjusted odds ratio (95% CI)	P
Maximal WSS		
Initial	0.913 (0.763–1.093)	0.321
Upstream	1.130 (0.975–1.309)	0.104
Minimal lumen area	0.972 (0.859–1.099)	0.647
Downstream	0.850 (0.717–1.008)	0.062
Terminal	0.819 (0.675–0.993)	0.042
Variability of maximal WSS		
SD	2.617 (1.404–4.880)	0.002
CoV	21,981.703 (126.703–38,134,670.107)	<0.001
Ratio of maximal WSS		
Highest/initial	4.467 (1.472–13.556)	0.008
Lowest/initial	0.082 (0.009–0.711)	0.023
Location of highest maximal WSS		
Minimal lumen area	1	
Upstream	4.071 (1.311–12.646)	0.015
Downstream	0.250 (0.027–2.347)	0.225
Average WSS		
Initial	1.091 (0.597–1.992)	0.778
Upstream	1.201 (0.687–2.100)	0.521
Minimal lumen area	0.765 (0.456–1.284)	0.311
Downstream	0.483 (0.266–0.877)	0.017
Terminal	0.578 (0.310–1.075)	0.083
Variability of average WSS		
SD	1.714 (0.336–8.752)	0.517
CoV	4.963 (0.496–49.692)	0.173
Ratio of average WSS		
Highest/initial	0.657 (0.314–1.372)	0.263
Lowest/initial	0.242 (0.050–1.180)	0.079
Location of highest average WSS		
Minimal lumen area	1	
Initial	3.300 (0.537–20.266)	0.197
Upstream	1.210 (0.360–4.062)	0.758
Downstream	0.471 (0.095–2.337)	0.357
Terminal	1.100 (0.130–9.339)	0.930
Plaque location		
Proximal MCA	1	
Middle MCA	0.246 (0.064–0.946)	0.041
Distal MCA	2.204 (0.567–8.562)	0.254
Degree of stenosis	0.994 (0.937–1.055)	0.853

CI, confidence interval; WSS, wall shear stress; SD, standard deviation; CoV, coefficient of variation; MCA, middle cerebral artery.