On-line Table 1: Clinical characteristics of the patients

Characteristics	Whole Cohort (*n* = 246)	Wave-SWI vs Standard SWI (*n* = 107)	Wave-SWI vs T2*WI GRE (*n* = 139)
Male (%)	115 (46.7%)	58 (54.2%)	57 (41.0%)
Age (mean) (yr)	58.6 ± 17.0	60.1 ± 16.7	57.5 ± 17.3
Clinical indication for MR imaging (%)			
Tumor	93 (37.8%)	32 (29.9%)	61 (43.9%)
Stroke	40 (16.3%)	10 (9.3%)	30 (21.6%)
AMS	25 (10.2%)	13 (12.1%)	12 (8.6%)
Hemorrhage	18 (7.3%)	13 (12.1%)	5 (3.6%)
TBI	11 (4.5%)	9 (8.4%)	2 (1.4%)
Headache	11 (4.5%)	3 (2.8%)	8 (5.8%)
Dementia	8 (3.3%)	7 (6.5%)	1 (0.7%)
Infection	8 (3.3%)	3 (2.8%)	5 (3.6%)
AVM	4 (1.6%)	4 (3.7%)	0 (0%)
Seizure	2 (0.8%)	0 (0%)	2 (1.4%)
Other	26 (10.6%)	13 (12.1%)	13 (9.4%)

Note:—AMS indicates altered mental stats; TBI, traumatic brain injury; AVM, arteriovenous malformation.

On-line Table 2: Acquisition parameters for magnetic susceptibility sequences

Parameter	T2*W GRE	Standard SWI	Wave-SWI
FOV read (mm)	250	240	240
FOV phase (%)	87.5	75.0	87.5
Matrix	256 × 190	256 × 182	288 × 189
Section thickness (mm)	5	1.8	1.8
TR/TE (ms)	694/20	30/20	40/(13 and 30; effective TE. 21.5)
Flip angle	20°	12°	15°
Acceleration factor *R*			
20-channel	1	GRAPPA, *R* = 2	Wave-CAIPI, *R* = 6
32-channel	1	GRAPPA, *R* = 2	Wave-CAIPI, *R* = 9
Bandwidth (Hz/pixel)	200	120	100
Scan time (min) (sec)			
20-channel	2, 21	5, 21	1, 40
32-channel	2, 21	5, 21	1, 6

Note:—GRAPPA indicates generalized autocalibrating partially parallel acquisition.

On-line Table 3: Semiquantitative scoring criteria used for head-to-head comparison of wave-SWI versus standard susceptibility sequence (standard SWI or T2*WI GRE)

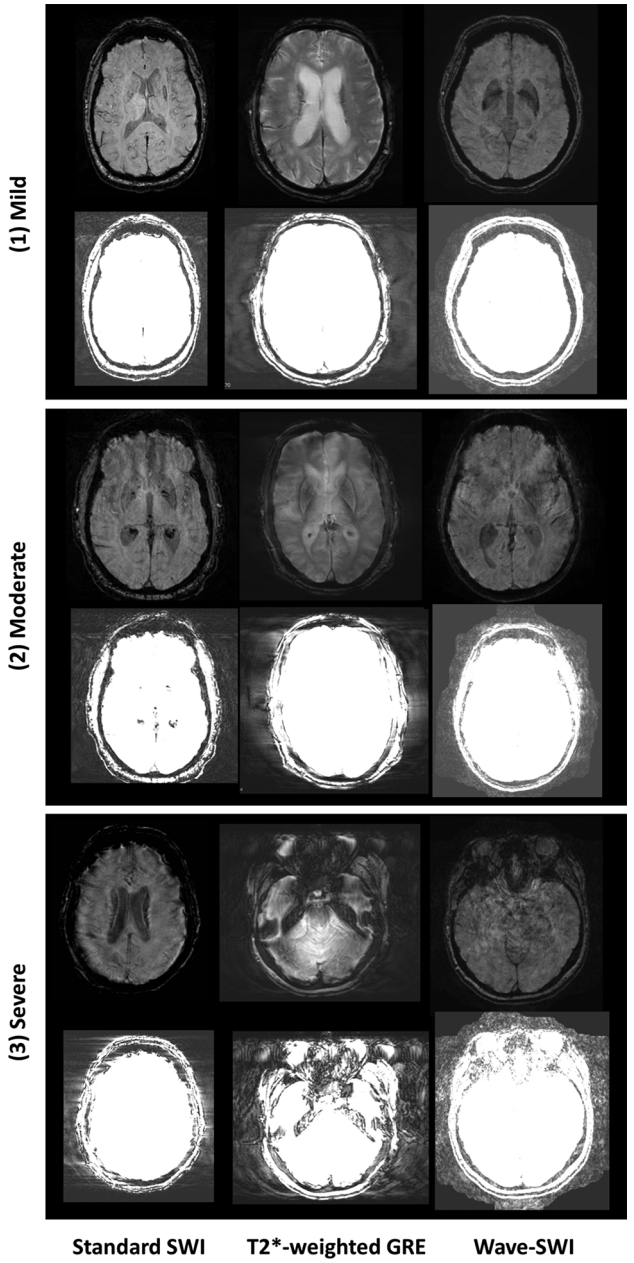
Parameter	Favors Image A[a]			Favors Image B[a]	
	Score −2	Score −1	0	Score +1	Score +2
Visualization of pathology	Visualization of pathology is superior on image A; lesions are not visualized on image B	Visualization of pathology is preferred on image A, but lesions are still visualized on image B	Equivalent	Visualization of pathology is preferred on image B, but lesions are still visualized on image A	Visualization of pathology is superior on image B; lesions are not visualized on image A
Artifacts	Image B has more artifacts that may obscure small lesions	Image B has more artifacts, but small lesions are not obscured	Equivalent	Image A has more artifacts, but small lesions are not obscured	Image A has more artifacts that may obscure small lesions
Overall diagnostic quality	Image B is of lower quality, and the difference alters the clinical diagnosis	Image B is of lower quality, but the difference does not alter the clinical diagnosis	Equivalent	Image A is of lower quality, but the difference does not alter the clinical diagnosis	Image A is of lower quality, and the difference alters the clinical diagnosis

[a] The wave-SWI and standard susceptibility sequences were randomly positioned on either the right or left side of the screen, labeled image A and image B.

On-line Table 4: Results of individual image series analysis

Variable	T2*WI GRE (*n* = 139)	Wave-SWI (*n* = 139)	*P*[a]	Standard SWI (*n* = 107)	Wave-SWI (*n* = 107)	*P*[a]
Presence of hemorrhage						
Yes	76 (54.7%)	95 (68.3%)	<.001	62 (57.9%)	61 (57.0%)	1
No	63 (45.3%)	44 (31.7%)		45 (42.1%)	46 (43.0%)	
No. of microhemorrhages[b] (total) (range)						
Infratentorial	22 (0–6)	45 (0–10)	<.01	105 (0–49)	91 (0–42)	.21
Deep	16 (0–2)	42 (0–7)	.01	83 (0–27)	73 (0–29)	.47
Lobar	33 (0–5)	245 (0–72)	<.001	385 (0–146)	387 (0–141)	.60
Motion artifacts						
No/mild	115 (82.7%)	84 (60.4%)	<.001	55 (51.4%)	59 (55.1%)	.01
Moderate	15 (10.8%)	38 (27.3%)		31 (29.0%)	38 (35.5%)	
Severe	9 (6.5%)	17 (12.2%)		21 (19.6%)	10 (9.3%)	
Diagnostic?						
Yes	132 (95.0%)	133 (95.7%)	1	98 (91.6%)	104 (97.2%)	.08
No	7 (5.0%)	6 (4.3%)		9 (8.4%)	3 (2.8%)	

[a] McNemar test for dichotomous variables; Wilcoxon signed rank test for ordinal variables.
[b] Total number of microhemorrhages according to MARS.[11]



ON-LINE FIGURE. Reference images available to readers during the image review, illustrating representative images for the grading of motion artifacts. Motion was graded according to the following scale: 0, none; 1, mild (motion is perceptible but not clinically relevant); 2, moderate (motion is present and may obscure subtle findings); and 3, severe (motion is present and may obscure major findings).