Supplementary table 1. Treatment and clinical outcomes between sulcal SAH vs. non-sulcal SAH

	Total n=209	**Sulcal SAH** n=33	**Non-sulcal SAH** n=176	**P value**
Onset to puncture time (min)*	188 (125-363)	173 (116-337)	194 (129-400)	0.173
Procedure time (min)*	30.0 (18-49)	48 (36.0-85.0)	28 (17.0-46.0)	<0.001
Onset to recanalization time (min)*	232 (166-404)	265 (184-309)	231 (164-425)	1.000
Primary use				
Stent retriever	150 (71.8)	26 (78.8)	124 (70.5)	0.329
Contact aspiration	21 (10.0)	0 (0.0)	21 (11.9)	0.051
Combined technique.	28 (13.4)	5 (15.2)	23 (13.1)	0.781
M2 angulation (°)*†	109 (85-142)	128 (112-171)	106 (81-133)	<0.001
Rescue therapy	29 (13.9)	7 (21.2)	22 (12.5)	0.292
Adjuvant treatment				
Intraarterial UK or tPA	64 (30.6)	9 (27.3)	55 (31.2)	0.803
Intraarterial tirofiban	7 (3.3)	0 (0.0)	7 (4.0)	0.523
Angioplasty	2 (1.0)	0 (0.0)	2 (1.1)	1.000
No. of passes*	2 (1-3)	3 (2-4)	1 (1-2)	<0.001
1	103 (49.3)	6 (18.2)	97 (55.1)	
2	46 (22.0)	10 (30.3)	36 (20.5)	
≥3	60 (28.7)	17 (51.5)	43 (24.4)	
mTICI 2b-3	178 (85.2)	19 (57.6)	159 (90.3)	<0.001

mTICI 3	82 (39.2)	7 (21.2)	75 (42.6)	<0.001
First pass effect	51 (24.4)	0 (0.0)	51 (29.0)	0.001
Modified first pass effect	106 (50.7)	6 (18.2)	100 (56.8)	<0.001
mRS at 90-day*	2 (1-4)	2 (1-5)	2 (0-4)	0.074
mRS 0-2 at 90-day	112 (53.6)	15 (45.5)	97 (55.1)	0.307
Mortality at 90-day	17 (8.1)	4 (12.1)	13 (7.4)	0.571
Adverse event				
Procedural complication				
Extravasation/perforation	10 (4.8)	10 (30.3)	0 (0)	<0.001
Dissection	2 (1.0)	1 (3.0)	1 (0.6)	0.720
Vasospasm	11 (5.3)	1 (3.0)	10 (5.7)	0.841
Distal migration	55 (26.3)	16 (48.5)	39 (22.2)	0.003
Hemorrhagic transformation				
None	150 (71.8)	22 (66.7)	128 (72.7)	0.478
HI1 or HI2	44 (21.2)	7 (21.2)	37 (21.0)	0.980
PH1 or PH2	15 (7.2)	4 (12.1)	11 (6.3)	0.265
Symptomatic ICH	8 (3.8)	5 (15.2)	3 (1.7)	0.003

Data are presented as number (%). *UK*, urokinase; *tPA*, tissue plasminogen activator; *mTICI*, modified thrombolysis in cerebral infarction; *mRS*, modified Rankin Scale; *SAH*, subarachnoid hemorrhage; *HI*, hemorrhagic infarction; *PH*, parenchymal hematoma; *ICH*, intracerebral hemorrhage.

* Data are median and numbers in parentheses are IQR.

† Continuous variable, higher M2 angulation indicates greater vessel curvature

Supplementary table 2. Multivariable analysis for predictors of ***covert*** sulcal SAH

Variable	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age	1.05 (1.00-1.10)	0.049		
Female	1.02 (0.42-2.43)	0.966		
Hypertension	1.49 (0.59-4.29)	0.427		
History of stroke	0.54 (0.08-1.98)	0.419		
Prestroke mRS	0.89 (0.55-1.30)	0.600		
Admission NIHSS	1.05 (0.96-1.16)	0.297		
Baseline ASPECTS	1.12 (0.79-1.67)	0.541		
Procedure time (min)	1.02 (1.01-1.03)	<0.001		
Distal (vs. proximal)	6.76 (2.71-18.53)	<0.001	8.53 (2.98-27.33)	<0.001
Superior division	2.33 (0.96-6.03)	0.068	3.86 (1.30-13.00)	0.020
Stent retriever use (vs. aspiration)	2.87 (0.94-12.54)	0.099		
M2 angulation†	1.02 (1.01-1.03)	<0.001	1.02 (1.01-1.03)	0.005
No. of passes	1.55 (1.22-1.98)	<0.001	1.60 (1.21-2.13)	<0.001

mRS, modified Rankin Scale; *NIHSS*, National Institute of Health stroke scale; *ASPECTS*, Alberta Stroke Program Early CT Score.

† Continuous variable, higher M2 angulation indicates greater vessel curvature.

Supplementary table 3. Multivariable analysis for predictors of ***overt*** sulcal SAH

Variable	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age	1.00 (0.95-1.05)	0.909		
Female	3.26 (0.88-15.47)	0.094		
Hypertension	0.32 (0.08-1.14)	0.082		
History of stroke	1.53 (0.22-6.49)	0.604		
Prestroke mRS	0.88 (0.39-1.50)	0.692		
Admission NIHSS	0.83 (0.62-1.03)	0.148		
Baseline ASPECTS	0.73 (0.45-1.20)	0.193		
Procedure time (min)	1.01 (0.995-1.03)	0.090		
Distal (vs. proximal)	5.96 (1.60-28.40)	0.012	5.38 (1.40-26.02)	0.019
Superior division	1.74 (0.48-7.00)	0.400		
Stent retriever use (vs. aspiration)	0.57 (0.16-2.31)	0.402		
M2 angulation†	1.02 (1.00-1.03)	0.59	1.02 (1.00-1.03)	0.041
No. of passes	1.20 (0.81-1.65)	0.301		

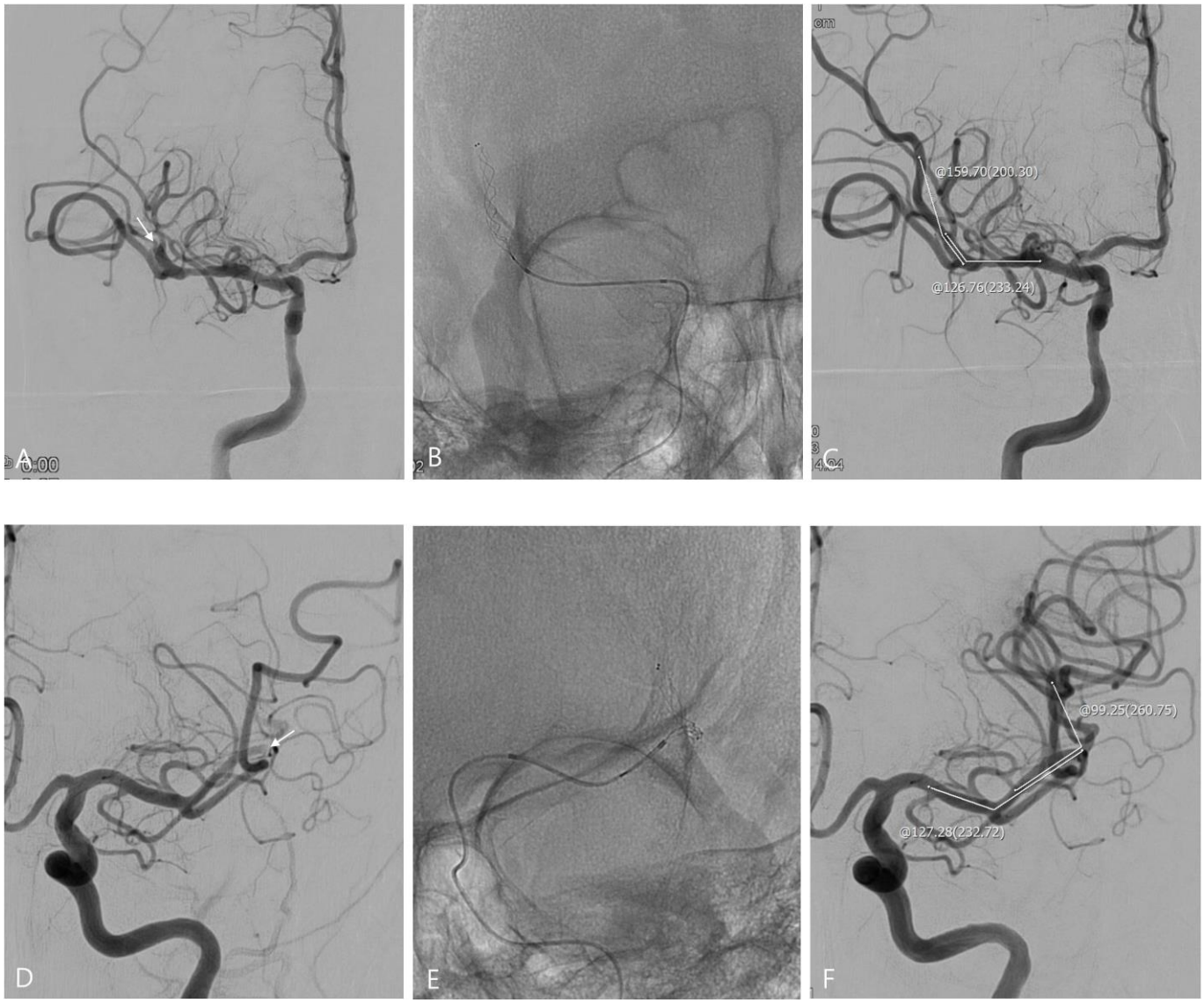
mRS, modified Rankin Scale; *NIHSS*, National Institute of Health stroke scale; *ASPECTS*, Alberta Stroke Program Early CT Score.

† Continuous variable, higher M2 angulation indicates greater vessel curvature.

Supplementary table 4. Multivariable analysis for predictors of unfavorable outcome in patients excluding those with overt sulcal SAH.

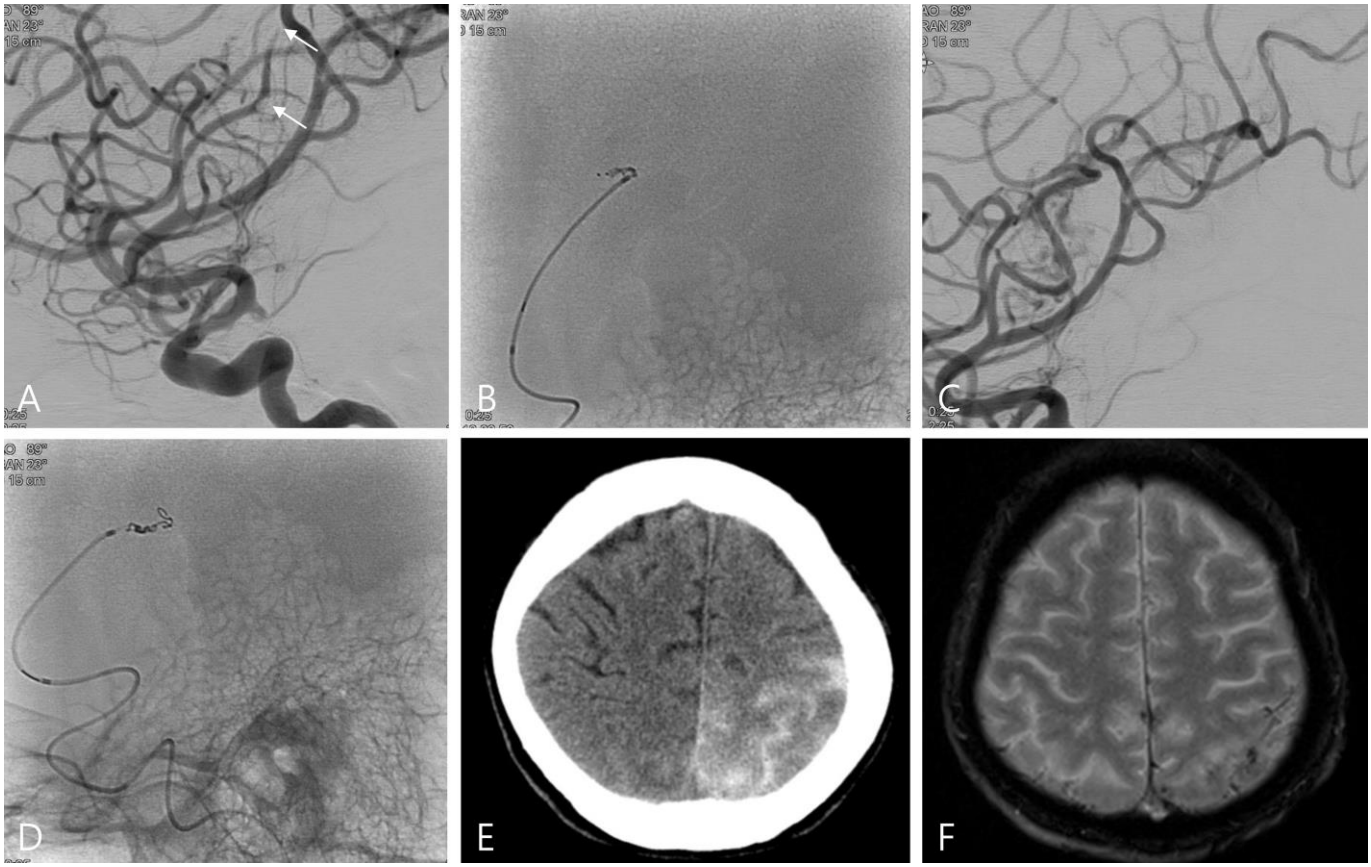
Variable	Crude OR (95% CI)	P value	Adjusted OR (95% CI)	P value
Age	1.04 (1.01-1.07)	0.001	1.11 (1.05-1.18)	<0.001
Female	1.28 (0.71-2.30)	0.397		
Hypertension	0.96 (0.52-1.79)	0.902		
Diabetes	2.01 (1.10-3.69)	0.023	1.77 (0.61-5.19)	0.291
Dyslipidemia	1.20 (0.66-2.20)	0.537		
Smoking	0.84 (0.40-1.71)	0.647		
Coronary artery disease	3.75 (1.41-11.14)	0.011	3.32 (0.49-25.45)	0.224
Atrial fibrillation	0.53 (0.29-0.95)	0.037	0.33 (0.11-0.90)	0.037
Previous stroke history	1.63 (0.72-3.68)	0.231		
Admission NIHSS	1.13 (1.06-1.22)	<0.001	1.15 (1.05-1.26)	0.002
Baseline ASPECTS	0.60 (0.46-0.77)	<0.001	0.53 (0.32-0.83)	0.009
Parenchymal hematoma (PH1 or PH2)	7.61 (1.89-50.88)	0.011	21.93 (2.31-50.77)	0.015
Covert sulcal SAH	1.30 (0.52-3.19)	0.558	1.45 (0.25-8.09)	0.830

Data are presented as number (%). *ASPECTS*, Alberta Stroke Program Early CT Score; *NIHSS*, National Institute of Health stroke scale; *SAH*, subarachnoid hemorrhage.



Supplementary figure 1. Two examples of M2 angulation measurement (A-C and D-F). (A) Frontal subtraction angiography shows occlusion of the proximal M2 superior division (arrow). (B) Frontal native image shows deployment of the stent retriever (Trevo 3x20 mm) covering the occluded segment. (C) Recanalization is achieved after two attempts of stent retriever thrombectomy. The M1–M2 angle is measured as 126 degrees and the M2–M2′ angle 159 degrees on frontal digital subtraction angiography. The calculated M1–M2 (CM1–M2) angle is 180–126=54 degrees. The calculated M2–M2′ angle (CM2–M2′) is 180–159=21 degrees. The Total Calculated Vessel Angle (TCVA) is therefore (CM1–M2)+(CM2–M2′) (54+21)=75 degrees. (D) In another patient, lateral digital subtraction angiography shows occlusion of the distal M2 superior division (arrow). (E) Frontal native image shows deployment of the stent retriever

(Trevo 3x20 mm) within the M2 segment. (F) Recanalization is achieved after two attempts of stent retriever thrombectomy and subsequent rescue treatment with 4MAX aspiration catheter (not shown). The M1–M2 angle is measured as 127 degrees and the M2–M2' angle 99 degrees on frontal digital subtraction angiography. The calculated M1–M2 (CM1–M2) angle is 180–127=53 degrees. The calculated M2–M2′ angle (CM2–M2′) is 180–99=81 degrees. The TCVA is therefore (CM1–M2)+(CM2–M2′) (53+81)=134 degrees.



Supplementary figure 2. Illustrative case showing overt sulcal SAH. A patient in their 50s presented dysarthria and right sensory change. (A) Left internal cerebral artery lateral angiogram shows occlusions of distal M2 branches (arrow). (B) Lateral native image shows deployment of the stent retriever (Trevo 3x20 mm) covering the occluded distal M2 segment (second passes). (C) After withdrawal of the stent retriever, active contrast extravasation is observed. (D) Emergent coil embolization is performed from the point of extravasation to the proximal portion of affected vessel. (E and F) Noncontrast CT scan (immediate after procedure) and axial gradient echo MRI (3 days after procedure) shows diffuse subarachnoid hemorrhage not only in the left Sylvian fissure (not shown) but also in both parietal sulci.