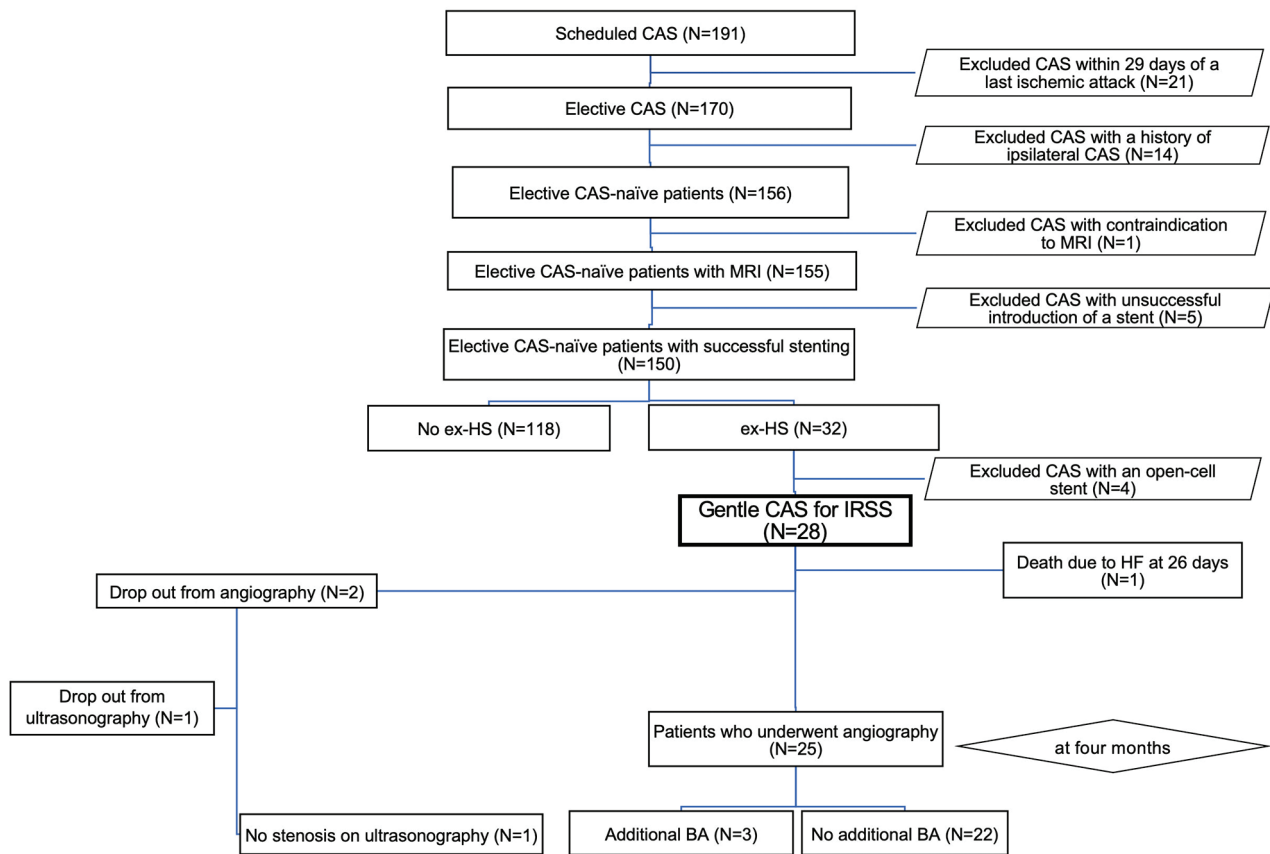
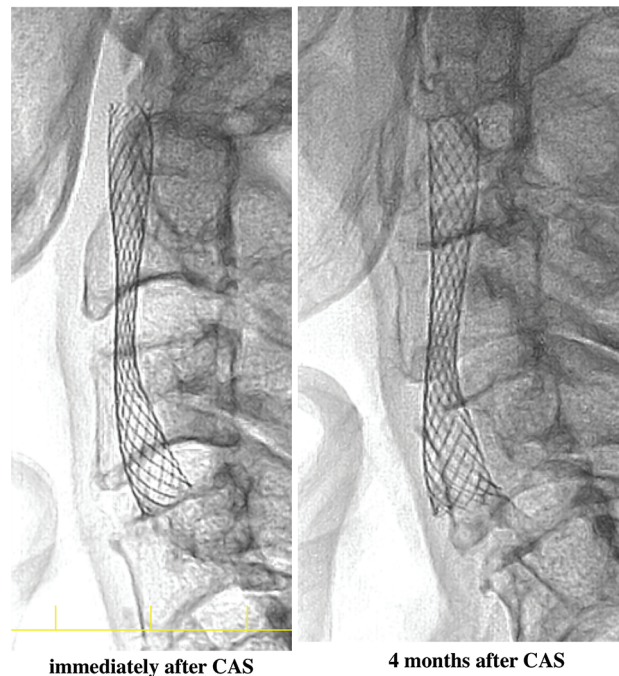




ONLINE FIG 1. Flow chart of patient selection for the analysis. HF indicates heart failure.



ONLINE FIG 2. Pictures (lateral view) of stents immediately and 4 months after CAS.

Online Table 1: MR imaging parameters

Parameters	3D-TOF-MRA	DWI
TR (ms)	24	4285
TE (ms)	3.45	65
FOV (mm)	220	220
Flip angle	17°	
Matrix size	480 × 704	
Section thickness (mm)	5	5
Scan time (min)	3.2	
Section gap (mm)		1
B-value (s/mm ²)		1000

Online Table 2: Guidewire, balloon catheter, filter, and stent details

	Product	Manufacturer
Guide sheath	MSK-guide 7.5 × 90 (6F sheath)	Medikit
Guidewire	Tenrou S (0.014 inch, 200 cm)	Kaneka Medix
	Spindle XS (0.014 inch, 300 cm)	Asahi Intech
Balloon catheter	Shiden, 3.0 mm	Kaneka Medix
	Shiden, 4.0 mm	
	Shiden, 5.0 mm	
	(NP: 8 atm, RBP: 14 atm)	
Filter	Spider FX	Medtronic
Stent	Carotid Wallstent 10 × 24	Boston Scientific
	Carotid Wallstent 10 × 31	

Note:—NP indicates nominal pressure; RBP, rated burst pressure.

Online Table 3: Patient characteristics

CAS Procedure: Strategy (<i>n</i> = 28)	Intentional Residual Stent Stenosis
Age (median) (IQR) (yr)	78 (72–81)
Men (No.) (%)	25 (89.3%)
BMI on admission (median) (IQR) (kg/m ²)	23.2 (21.9–24.5)
T-CHO on admission (median) (IQR) (mg/dL)	166 (145–176)
LDL-C on admission (median) (IQR) (mg/dL)	79.5 (67.7–93.1)
HDL-C on admission (median) (IQR) (mg/dL)	58 (46–71)
TG on admission (median) (IQR) (mg/dL)	88 (71–139)
BS on admission (median) (IQR) (mg/dL)	109 (99–127)
HbA1c on admission (median) (IQR) (%)	5.7 (5.7–6.0)
Symptomatic (No.)	16 (57.1%)
Statin users (No.)	15 (53.6%)
History of hypertension (No.)	25 (89.3%)
History of diabetes mellitus (No.)	9 (32.1%)
CHS after CAS	0
ICH after CAS	0

Note:—BS indicates blood sugar (blood glucose); BMI, body mass index; CHS, cerebral hyperperfusion syndrome; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; T-CHO, total cholesterol; TG, triglyceride.

On-line Table 4: Hyperperfusion phenomenon^a

Definition of HPP by SPECT CAS	(1) (n = 11)		(2) (n = 1)		(3) (n = 8)	
	Before	After	Before	After	Before	After
MLD (median) (mm)	0.53		0.4		0.54	
MSD (median) (mm)		2.78		2.78		2.67
MCA rSI (median)	0.72	1.04	0.55	1.18	0.65	1.025
PSV (median) (cm/s)	386.5	94.5	397	161	394	142
AI% (median) (%)	96.61	101.92	74.28	126.91	91.48	100.99
rCBF% (median) (%)	89.16	96.89	72.94	119.19	80.19	94.87
AVDO ₂ (median) (O ₂ mL/mL)	6.7	6	6.5	3.7	6.6	5.45
OEF (median)	0.41	0.38	0.41	0.25	0.4	0.395

Note:—rSI indicates relative signal intensity; AVDO₂, arteriovenous difference of oxygen; AI, asymmetric index; MLD, minimal luminal diameter; MSD, minimal stent diameter; OEF, oxygen extraction fraction; PSV, peak systolic velocity; rCBF, regional cerebral blood flow.

^aChanges in luminal diameters and hemodynamic factors before and after CAS in patients with hyperperfusion phenomenon defined by 3 types of SPECT definitions.