

On-line Table 1: Demographics

Previous 1st																					
Previous Cerebral Aneurysm				Degree Relative with Cerebral Aneurysm				Smoker		Ischemic Heart Disease, 0 = No, 1 = Yes, 9 = Unknown		Cerebrovascular Disease, 0 = No, 1 = Yes, 9 = Unknown		Symptoms		An Type		Aneurysm		Aneurysm Location	
Patient	Sex	0 = No, 1 = Yes, 9 = Unknown	0 = No, 1 = Yes, 9 = Unknown	0 = No, 1 = Yes, 9 = Unknown	0 = No, 1 = Yes, 9 = Unknown	1 = Never, 2 = Former, 3 = Current	1 = Yes, 9 = Unknown	1 = Yes, 9 = Unknown	1 = Yes, 9 = Unknown	1 = Yes, 9 = Unknown	1 = Yes, 9 = Unknown	1 = Yes, 9 = Unknown	1 = Sensory disturbance left face, 2 = Visual blurriness, 3 = Transient vision loss right eye; TIA, 4 = None	1 = Saccular, 2 = Fusiform	Max Size (mm)	Max Size (mm)	Neck Size (mm)	Neck Max Size (mm)			
1	F	0	0	0	0	3	0	0	0	0	0	0	Sensory disturbance left face	1	8.5	3	3	3	Ophthalmic left ICA		
2	M	1	1	1	1	1	0	1	1	1	1	1	None	1	10	—	—	—	Paraclinoid ICA		
3	F	0	0	0	0	1	9	0	0	0	0	0	None	1	8.2	—	—	—	Left ICA ventral wall		
4	F	0	0	0	0	3	0	0	0	0	0	0	Visual blurriness	1	16	—	—	—	Left ICA ventral wall		
5	F	1	0	0	0	3	9	9	9	9	9	9	Transient vision loss right eye; TIA	1	6	4	4	4	Right ICA		
6	F	1	9	9	0	3	0	0	1	1	1	1	None	2	8.3	—	—	—	Right PcomA, right anterior choroidal		
7	F	1	9	9	0	2	0	0	0	0	0	0	None	1	5	—	—	—	Left ICA, left PcomA residual		
8	F	0	0	0	0	2	0	0	0	0	0	0	None	1	19.6	—	—	—	PcomA		
9	F	0	0	0	0	1	0	0	9	9	9	9	—	1	7.6	5.4	5.4	5.4	Right paraclinoid		
10	F	0	1	1	1	3	1	1	0	0	0	0	None	2	7	—	—	—	Left supraclinoid ICA		
11	F	0	0	0	0	1	0	0	0	0	0	0	None	1	5	4	4	4	Right ICA		
12	F	0	0	0	0	1	0	0	0	0	0	0	None	1	9.1	5	5	5	Left carotid		
13	F	0	0	0	0	1	0	0	0	0	0	0	None	1	7.3	4.15	4.15	4.15	ophthalmic artery		
14	M	0	9	9	0	1	0	0	1	1	1	1	Possible left frontal stroke due to unstable aneurysm	1	7	4.82	4.82	4.82	Left paraclinoid		
15	F	0	1	1	0	1	0	0	0	0	0	0	Headaches	1	5	3	3	3	Supraclinoid RICA		
16	F	0	0	0	0	2	0	0	0	0	0	0	Occipital headaches with intermittent visual changes (word-finding difficulty)	1	4	—	—	—	Left superior hypophyseal		
17	F	0	0	0	0	2	0	0	0	0	0	0	Headaches, diplopia	1	7.8	—	—	—	Left parasagittal ophthalmic		
18	F	0	1	1	0	1	0	0	0	0	0	0	Lighttheadedness, migraines	1	6.69	—	—	—	Superior hypophyseal		
19	F	0	0	0	0	1	0	0	0	0	0	0	Headache, occasional pulling sensation at V1 and V2 right	1	9.7	—	—	—	Right supraclinoid ICA		

Note:—An indicates aneurysm; RICA, right internal carotid artery; Max, maximum; —, not filled out; PcomA, posterior communicating artery.

On-line Table 2: Treatment

Patient	Institution	Physician	Initial FD Sizes Considered, Preferred	FD Size Selected	Total Procedure Time	Additional Maneuvers or Devices Used	Complications
1	A	1	4.25 × 16, 4.25 × 18 ^a	4.25 × 16	14	None	None
2	A	2	4.75 × 18 ^a , 4.75 × 20	5 × 20	43	Balloon angioplasty to improve device apposition	None
3	A	2	3.25 × 18 ^a , 3.25 × 20	5 × 18	38	None	None
4	A	2	3.75 × 18 ^a , 3.75 × 20	3.75 × 16, 3.75 × 18	77	None	None
5	A	2	4.5 × 18 ^a , 4.5 × 20	4.5 × 20	46	None	None
6	A	2	3.5 × 16 ^a , 3.5 × 18, 3.5 × 20	3.75 × 20	13	None	None
7	A	2	3.5 × 14 ^a , 3.5 × 16, 3.5 × 18	3.5 × 16, 3.5 × 20	44	None	Complete occlusion of the left ICA with recanalization
8	A	2	4.75 × 16, 4.75 × 18 ^a , 4.75 × 20	4.75 × 16	64	Coiling	None
9	A	3	4.25 × 18 ^a , 4.25 × 20	4.25 × 18	18	None	None
10	A	3	4.75 × 18 ^a , 4.75 × 20	4.75 × 18	50	Angioplasty as the PED did not fully open	None
11	A	3	3.75 × 16, 3.75 × 18 ^a	3.75 × 18	20	None	None
12	A	3	3.5 × 18 ^a , 3.5 × 20	3.5 × 20	25	None	None
13	A	3	4.25 × 18 ^a , 4.25 × 20	4.25 × 18	20	None	None
14	A	3	3.75 × 18 ^a , 3.75 × 20	5 × 18	35	None	None
15	B	4	4.25 × 20, 4.5 × 25, 4.75 × 20 ^a	4.5 × 20	44	None	None
16	B	5	4.25 × 18 ^a , 4.25 × 20, 4.5 × 16	4.25 × 20	50	None	None
17	B	6	4.5 × 16, 4.5 × 20, 4.75 × 16 ^a , 4.75 × 20	4.5 × 16	53	None	None
18	C	7	4.25 × 16 ^a , 4.25 × 18, 4.5 × 18	4.25 × 16	70	None	Encountered flow-limiting vasospasm
19	C	7	4.25 × 18, 4.25 × 20 ^a , 4.5 × 18	4.25 × 18	64	None	None

^a FD sizes preferred.

On-line Table 3: Worksheet Responses

Patient	1) Were the Simulations Useful for Your Planning?	2) Did the Simulations Give You Greater Confidence in Your Device Selection?	Comments for Questions 1 and 2 (Combined)	3) Did the Simulations Change Your Device Selection?	4) Do You Think the Simulations Reduced Your Operative Time?	5) Do You Think the Simulations Reduced the Number of Devices that You Used?	Comments for Questions 3, 4, and 5 (Combined)
1	Yes	Yes	—	Somewhat agree	Somewhat agree	No	—
2	Yes	Yes	It helped in predicting how the device based on its length would behave around curves.	Yes	No	Somewhat agree	I opted for a larger device.
3	Yes	Yes	—	Yes	No	No	I opted for a larger device after watching the simulation.
4	Yes	Yes	It gave me a greater confidence in my placement.	No	No	No	—
5	Yes	Yes	The choice of the longer device was helpful in maximizing proximal apposition.	Yes	No	No	I opted for the longer device.
6	Yes	Yes	—	Yes	No	No	I chose a longer device.
7	Yes	Yes	—	Yes	No	No	We opted for longer device.
8	Yes	Yes	—	Yes	No	No	We opted for a shorter one.
9	Yes	Yes	Configured length choice.	No	No	Yes	—
10	Yes	Yes	Gave me increased comfort about my site choice.	No	No	No	—
11	Yes	Yes	—	No	No	No	—
12	Yes	Yes	—	Yes	No	Somewhat agree	Yes, I chose a longer device.
13	Yes	Yes	—	No	No	No	—
14	Somewhat agree	Somewhat agree	—	Yes	No	No	—
15	Yes	Yes	Watching the video of simulated deployment helped me predict best delivery method. It actually changed how I was planning on delivering device.	Yes	Somewhat agree	No	Seeing wall apposition and device foreshortening was extremely helpful to choose right size, downsized diameter to 4.5×20 from 4.75×20 . We did select the next best device recommended but not the "best" due to lack of initial confidence.
16	Yes	Yes	Yes, it does help visualize the deployment in real time before device deployment in the patient. Compared multiple devices that were considered for the specific case.	Yes	Yes	Yes	
17	Yes	Yes	Helps with mental rehearsal choosing stent size and deployment strategy.	Yes	Yes	No	
18	Yes	Yes	Simulation gave confidence that 4.25×16 mm was appropriate size for desired landing zone.	No	Yes	No	Device preselected, proceeded with confidence toward deployment.
19	Yes	Yes	Helped narrow my device choice.	Yes	Yes	Somewhat agree	I selected a device that was 1 size shorter than simulated device.

Note:—indicates not filled out.

On-line Table 4: Deployment validation data

Patient	Postoperative Validation Data Available?	Clinical, Deployed Length (mm)	Simulated, Deployed Length (mm)	Clinical, Average Deployed Diameter (mm)	Clinical, Average Wire Thickness Measurement (mm)	Simulated, Average Deployed Diameter (mm)
1	Yes	25.75	22.69	3.39	0.13	3.62
2	Yes, but was not used due to balloon angioplasty	37.81	22.00	2.77	0.15	4
3	Yes	28.93	32.29	3.24	0.30	2.88
4	Yes	26.03	25.97	2.76	0.31	2.85
5	Yes	27.93	24.55	3.51	0.24	4.04
6	Yes	32.31	31.58	2.71	0.23	2.83
7	Yes	24.06	21.06	3.13	0.39	3.41
8	Yes	24.39	20.32	3.38	0.34	3.72
9	Yes	28.39	25.68	3.02	0.27	3.37
10	No	—	—	—	—	—
11	Yes	25.25	28.43	2.65	0.36	2.11
12	Yes	27.99	26.41	2.62	0.34	2.44
13	Yes	26.83	24.86	3.02	0.35	3.24
14	Yes	30.44	30.14	3.48	0.22	3.61
15	Yes	31.74	30.23	3.22	0.30	3.69
16	No	—	—	—	—	—
17	No	—	—	—	—	—
18	Yes	22.69	23.08	3.06	0.32	3.09
19	No	—	—	—	—	—

Note:—indicates not filled out.