

On-line Table 1: Patient characteristics, angiographic findings, and data of endovascular procedures and follow-up^a

Patient No.	Age (yr)/Sex	Aneurysm Location/Size	Devices Used	P2Y12 Level (%) / PRU by VeriPro ^b on Day of Procedure	ADP/TRAP Level on Day of Procedure	Range for Baseline ADP/TRAP	Femoral Sheath	Distal Access Catheter	Aspirin	Clopidogrel	Heparin	Follow-Up Imaging	Result of Final Follow-Up Imaging
1	12/M	Recurrence of cavernous aneurysm following EVT of CCF/10 mm bilobar	Surpass ^c /Copernic ^c balloon for device apposition	48/109	14/73	65–73/87–97	5F/long	DAC ^d 057	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	13-mo DSA	No residual aneurysm, parent artery patent
2	14/M	Residual cavernous aneurysm following EVT of CCF/7 mm	Surpass/Copernic balloon for device apposition	97/9	9/86	65–73/87–97	6F/long	DAC 057	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	5-mo DSA, 14-mo MRA	No definite evidence of residual aneurysm, parent artery patent
3	16/M	Proximal MCA (M1)/35 mm	Silk in Leo ^e	72/112	NA	65–73/87–97	6F/long	DAC 044	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	7-mo DSA, 16-mo MRA	No residual aneurysm, parent artery occluded
4	14/F	A2 segment of anterior cerebral artery/10 mm	Silk	51/84	10/86	65–73/87–97	6F/long	DAC 038	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	6-mo DSA, 42-mo MRA	No residual aneurysm, parent artery patent
5	16/M	Carotid cavernous fistula	Silk/coils, Onyx	NA/NA	NA	65–73/87–97	6F/long	None	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	52-mo DSA	No residual fistula, parent artery patent
6	14/M	V4 segment of vertebral artery/20 mm	Surpass in coronary balloon-expandable stent	77/55	26/62	65–73/87–97	6F/long	DAC 057	300 mg/day	75 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	6-mo DSA, 12-mo CTA	No residual aneurysm, parent artery patent
7	3/M	Carotid cavernous fistula	Silk (1 mo later Leo within Silk)	99/3	13/100	66–75/71–90	4F/long	4F catheter	100 mg/day	37.5 mg/day	100 IU/kg IV, ACT at 2–3× during procedure	7-mo DSA	No residual fistula, parent artery patent

Note:—EVT indicates endovascular treatment; NA, not available; ACT, activated clotting time.

^a Age specific-range values for ADP and TRAP in healthy children provided on the basis of reference number 58 (area under the curve/10 as reported in the central laboratory of Hacettepe University Hospitals where the values for the current series were measured).

^b Stryker Neurovascular, Fremont, California.

^c Balt Extrusion, Montmorency, France.

^d Stryker, Kalamazoo, Michigan.

^e Balt Extrusion.

On-line Table 2: Review of articles in the literature in which procedural details regarding placement of intracranial stents or flow diverters are provided for patients 17 years of age or younger

	Age (yr, mo)/ Sex	Aneurysm/Fistula Location	Devices Used	P2Y12 Level	ADP/TRAP	Femoral Sheath	Distal Access	Aspirin	Clopidogrel	Heparin
Takemoto et al. ² 2014	3 Teenage patients	1) M1 bilobed 2) Cavernous ICA 3) Saccular	2 Aneurysms with PEDs, 1 stent-assisted coiling	ND	ND	ND	ND	ND	ND	ND
Appelboom et al. ³ 2010	10 yr/F	Intracavernous	Silk	ND	ND	6F	90-cm Envoy ^a guiding catheter	Preoperative 7 days, 3 mg/kg/day, postoperative 1 week, 160 mg/day then 6 mo, 75 mg/day	Preoperative 7 days, 75 mg/day, 1 week, 75 mg/day, then 3 mo, 37.5 mg/day	40 IU/kg IV, during procedure postoperative 2 days, 20 IU/kg/h
Burrows et al. ⁴ 2013	15 yr/M	Inferior trunk of MCA	3 PEDs	ND	ND	Triaxial system	ND	Preoperative 5 days, 325 mg/day	Preoperative 5 days, 75 mg/day	Full heparinization
Lubicz et al. ⁵ 2010	17 yr/F, 10 yr/F	Distal BA, cavernous ICA	Silk	ND	ND	ND	Fargo catheter ^b	Preoperative 5 days, 160 mg/day, or 1 day before the procedure, 320-mg loading dose, and postoperative, 160 mg/day 3 or 6 mo	Preoperative 5 days, 75 mg/day or 1 day before the procedure, 300-mg loading dose, postoperative 75 mg/day 3 or 6 mo	A bolus infusion of 5000 IU and hourly thereafter, the bolus infusion was followed by a continuous infusion (1000–3500 IU/h) for doubling the baseline ACT
Zarceka et al. ⁶ 2014	15 yr/M	R VA-V4 segment, fusiform	Telescopic, 2 PEDs	ND	ND	ND	ND	Preoperative 5 days and postoperative, 75 mg/day, during the procedure 500 mg was administered IV	Preoperative 5 days, postoperative 75 mg for 3 mo	A bolus dose 4000 IU/IV was administered at the start of the procedure
Navarro et al. ⁷ 2015	11 yr/F 4 yr/M	1) VB junction 2) L ICA 3) R PcomA	1) PED and coiling 2) PED 3) PED	P2Y12 reactivity units between 20 and 194	Aspirin reactivity units <350	ND	ND	Preoperative 1 wk, 81 mg/day, and postoperative, baby aspirin	Preoperative 1 wk, postoperative, 0.2–1 mg/kg/day 6 mo	ND
Ikedo et al. ⁸ 2015	12 yr/F	Fusiform MCA	PED	ND	ND	6F sheath	Navien 058 support catheter ^c	Preoperative 5 days and postoperative, 325 mg/day	Preoperative 5 days, postoperative 3 mo, 75 mg/day	Systemically heparinized for a goal of ACT of 250 seconds; a continuous infusion, 10 IU/kg/h overnight
Abla et al. ⁹ 2014	10 yr/M	L ICA	7 Telescoping PEDs (failed) surgical STA-MCA bypass, with PAO	ND	ND	ND	ND	ND	ND	ND
Kan et al. ¹⁰ 2016	16 yr/M	Basilar trunk aneurysm	2 Surpass ^d + 1 Neuroform ^d stent	100	ND (aspirin response unit was 384)	ND	Neuron MAX 088 delivery catheter ^a and a 3F distal delivery catheter	Preoperative 5 days, 325 mg/day, postoperative for 6 mo, 325 mg/day, then 81 mg daily	Preoperative 5 days, 75 mg/day, postoperative, 75 mg/day 6 mo	Systemic heparin was administered to achieve an ACT of >250 seconds during the procedure
Cohen et al. ³¹ 2013	3 yr/F	Cavernous	Balloon-expandable stent + coil	ND	ND	8F introducer sheath	6F guiding Envoy	Preoperative 3 days, 100 mg/day, postoperative 3 mo, 100 mg/day	No	At start of procedure, a bolus 2000 IU, and every catheter was constantly flushed with saline and heparin (10 per mL)
Chandela et al. ³² 2018	11 yr/M	R distal VA	2005, 2 Neuroform stents + coil embolization; 2006 (recurrent) PICA bypass + PAO	ND	ND	ND	ND	ND	ND	ND
Crowley et al. ³³ 2019	22 mo/M	Mid-BA fusiform	3 Enterprise stents ^f	ND	ND	ND	5F guiding catheter	Preoperative 4 days, 162 mg/day, postoperative, 81 mg twice a day 4 months	No	ND
Wlins et al. ³⁴ 2010	7 yr/F	BA	Enterprise stent + coil embolization	ND	ND	ND	ND	After 1 mo stopped clopidogrel (Plavix), then started aspirin, 40 mg/day 1 yr	1 mo, 25 mg/day	ND
Fontela et al. ³⁵ 2016	17 yr/M	R ICA pseudoaneurysm	Neuroform stent + coil embolization	ND	ND	ND	ND	Postoperative, not detailed	Postoperative 6 wk	Following the procedure, the patient was administered heparin for 24 hr
Gupta et al. ³⁶ 2013	11 yr/F	R ICA cavernous segment	Balloon-expandable covered stent (Aneurx) ^g	ND	ND	9F 90-cm arterial sheath	7F Envoy	Preoperative, 325 mg/day, postoperative, 150 mg/day 2 yr	Preoperative 4 days, 75 mg/day, postoperative, 75 mg/day 3 mo	ND
Gralla et al. ³⁷ 2014	11 yr/M	Extracranial ICA aneurysm	Easy Wallstent ^h after 6 days Symblot Covered Stent ⁱ	ND	ND	ND	7F guiding catheter	Postoperative 2nd day, started 100 mg/day	Postoperative 2nd day, started 75 mg/day for 6 wk	ND
Komiyama et al. ³⁸ 2005	13 yr/M	Traumatic BA dissection	S670 Coronary Stent System (2 telescopic)	ND	ND	ND	6F guiding catheter	ND	ND	ND
Lai et al. ³⁹ 2010	12 yr/F	Distal ICA dissection	Balloon-expandable stent	ND	ND	ND	6F 90-cm guiding catheter	ND	ND	An intravenous bolus of 60 IU/kg was administered to achieve a target ACT of 250 seconds
Lee et al. ⁴⁰ 2011	15 yr/M	Dissecting aneurysm of the PCA P2 segment	2 Neuroform + coil, PAO with coils after rebleeding	ND	ND	ND	ND	Taken 4 hr after the procedure but stopped at 6th hr after rebleeding	Postoperative, 75 mg/day for 6 mo	ND
Binning et al. ⁴¹ 2010	14 yr/M	R ICA and R MCA dissection	Enterprise stent	ND	ND	ND	6F Envoy	Postoperative, 325 mg/day	Postoperative, 75 mg/day for 6 mo	Therapeutic heparinization
Ogilvy et al. ⁴² 2011	5 yr/M	L ICA supraclinoid segment	Enterprise stent + coil embolization	ND	ND	ND	5F Envoy	Postoperative 1 wk, 5 mg/kg/day, postoperative, 5 mg/kg/day	Postoperative 1 wk, 75 mg/day, postoperative, 75 mg/day 3 mo	ND

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On-line Table 2: Continued

	Age (yr, mo)/ Sex	Aneurysm/Fistula Location	Devices Used	P2Y12 Level	ADP/TRAP	Femoral Sheath	Distal Access	Aspirin	Clopidogrel	Heparin
Savastano et al, ⁴³ 2014	9 mo/M	R/MCA M1 segment	Neuroform stent + coil embolization	ND	ND	4F sheath	4F diagnostic catheter	Pre- and postoperative, 40 mg/day	Pre- and postoperative, 4 mg/day for 6 mo	ND
Vargas et al, ¹¹ 2016	9 yr/M	Petrocarotous	PED	ND	ND	ND	ND	300 mg/day, only after procedure	75 mg/day, only after procedure	70 U/kg followed by continuous infusion
	9 yr/M	Basilar	PED							
	8 yr/M	A2 segment	PED							
	6 yr/M	M1 segment	Neuroform							
Requejo et al, ²⁵ 2016	14 yr/M	A1 segment	Neuroform	ND	ND	ND	ND	100 mg at the conclusion of procedure (no preoperative loading dose)	1 mg/kg at the conclusion of procedure (no preoperative loading dose)	100 IU/kg
	14 yr/M	AcomA	Not listed, "self-expanding stent"							
	13 yr/M	ICA								
	12 yr/F	MCA								
	13 yr/M	PcomA								
Current series (for details please see On-line Table 1)	3–16 yr (all except 1 are boys)	See Table 1	Silk or Surpass	43%–100%	39 to 255/623 to 1039	4F to 6F long sheaths	Please see On-line Table 1	100–300 mg	375–75 mg	100 IU/kg IV, ACT at 2–3× during procedure

Note:—BA indicates basilar artery; ND, not detailed; PCA, posterior cerebral artery; AcomA, anterior communicating artery; PcomA, posterior communicating artery; PAO, parent artery occlusion; PICA, posterior inferior cerebellar artery; VA, vertebral artery; VB, vertebrobasilar; STA, superficial temporal artery; R, right; L, left; ACT, activated clotting time.

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^b Balt Extrusion.

^c Covidien, Irvine, California.

^d Stryker Neurovascular.

^e Penumbra, Alameda, California.

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^g Itgi Medical Inc, Or Akiva, State of Israel.

^h Boston Scientific, Natick, Massachusetts.

ⁱ Boston Scientific.

^j Medtronic, Minneapolis, Minnesota.