



Table 1: Demographics

	Number/average	Percent/std dev
Total cases	50	
Total patients	41	
Age	56yrs (33-78)	± 10.6
Female sex	19	46%
Aneurysms treated	41	
Size (average)	4.5mm (2-15)	± 2.6
Small	39	95%
Large	2	5%
Giant	0	0%
Aneurysm location		
ACoA	26	63%
A1-A2	15	37%
Prior SAH	18	44%
Previously treated		
Clip	6	15%
Coil	14	34%

Results (Continued):

Coils were deployed adjunctively in 2 cases (4%) (Table 2). Procedural outcomes included zero mortalities, one major stroke (2%), and two patients with intracranial hemorrhage (ICH) (4%). Stent thrombosis was observed intra-operatively in one patient (2%) and resolved with Abciximab administration. Transient postoperative aphasia was observed in one patient (2%) without imaging correlate (Table 3). Aneurysm occlusion rates were 88% among those patients treated with single-stage PED for whom follow-up angiogram was performed (23 patients) while only trace aneurysm filling was apparent for the remaining 3 patients (12%). Because the procedures have been performed more recently, average follow-up for patients undergoing H-pipe was 4.6 months as compared with 10.6 months for the single-stage PED. Across unilaterally- and bilaterally-treated patients, most (73%) without post-operative angiogram were within 6 months of treatment (Table 4).

Table 2: Case characteristics

	Number/average	Percent/std dev
Procedural success	48	96%
Number of PED implanted		
Ipsilateral A1-A2	46	96%
Ipsilateral to contralateral	2	4%
Bilateral A1-A2 (H-pipe)	7	15%
Flouro time	35.7min (15-102)	± 18
Radiation exposure	1994 cGy (756-4456)	± 909
Adjunct coil deployment	2	4%
IA verapamil	16	32%
Intra-op rupture	0	0%
PED cork/removal	2	4%

Table 3: Procedural outcomes

	Number/average	Percent/std dev
Length of stay	3.0 days (1-30)	± 5.3
Mortality	0	0%
Minor stroke	0	0%
Major stroke	1	2%
ICH	2	4%
SAH	0	0%
PED thrombosis	1	2%
Transient deficit	1	2%
Cranial nerve palsy	0	0%

Table 4: Aneurysm occlusion

	Number/average	Percent	
Single stage	Average follow-up	10.6 months	
	Follow-up angio	26	
	occluded	23	88%
	trace-filing	3	12%
	neck filing	0	0%
	aneurysm filing	0	0%
H-pipe	No follow-up	8	
	Average follow-up	4.6 months	
	Follow-up angio	4	
	occluded	2	50%
	trace-filing	1	25%
	neck filing	0	0%
aneurysm filing	1	25%	
No follow-up	3		

Conclusions:

The PED can be used safely and effectively in the treatment of ACoA-region aneurysms. This represents a good alternative treatment option in addition to microsurgical clipping and endovascular coiling.

Introduction: Flow diversion represents a new, yet definitive treatment for recurrent and difficult-to-coil ACoA region aneurysms, of which reports are limited.

Methods: We retrospectively reviewed an IRB-approved database of aneurysm patients at a single institution for patients with anterior communicating artery (ACoA) or A1-A2 aneurysms treated with the pipeline embolization device (PED). Patient demographic, aneurysm and case characteristics, results, and follow-up data were analyzed

Results: A total of 50 procedures were performed on 41 patients, including 7 patients who underwent bilateral "H-pipe" PED placement. The average age was 56 years and 46% of patients were female. The average aneurysm size was 4.5mm and 2 large (>10mm) aneurysms were treated. Vessel of origin was either ACoA (26 aneurysms, 63%) or the A1-A2 junction (15 aneurysms, 37%). Eighteen patients (44%) had prior SAH and 20 had previously been treated either with clipping (6 aneurysms, 15%) or coiling (14 aneurysms, 34%) (Table 1). Procedural success was achieved in 48 cases (96%) and two cases were aborted. The average flouroscopy time and radiation exposure was 36 minutes and 1994 cGy. Intra-arterial verapamil was administered for vasospasm prophylaxis or treatment in 16 cases (32%).