Supplementary Material

| Subject	Vessel Size (mm)	Device Size (mm)	Porosity (%)	Pore Density ($pores/mm^2$)	Pore Size (mm)
01	2.95 [2.7, 3.2]	4.25 x 14	74%	8.7	0.29
02	3.58 [3.23, 3.94]	3.75 x 10	69%	12.5	0.23
03	3.38 [3.3, 3.46]	3.75 x 10	72%	10.9	0.25
04	3.85 [3.8, 3.91]	4.5 x 10	72%	9.6	0.27
05	3.40 [3.27, 3.52]	4.25 x 14	72%	8.9	0.28
06	2.86 [1.93, 3.8]	3.75 x 12	68%	12.1	0.23
07	2.92 [2.88, 2.96]	3.5 x 10	71%	11.1	0.25
08	3.46 [3.02, 3.9]	3.75 x 10	68%	11.6	0.24
09	3.24 [3.1, 3.37]	3.25 x 14	46%	32.0	0.11
10	2.75 [2.48, 3.01]	3.25 x 14	52%	26.2	0.14
11	2.81 [2.72, 2.89]	3.75 x 10	71%	11.9	0.24
12	3.75 [3.5, 4.0]	3.75 x 10	72%	10.7	0.25
13	3.56 [3.44, 3.67]	3.75 x 10	73%	9.7	0.26

Supplementary Table I. Vessel and device sizes, and porosity of the virtually deployed FDs in the region of the aneurysm orifice. Vessel sizes were measured in the reconstructed vascular model in two orthogonal directions at the aneurysm neck and are given in the table as diameter and range. Device diameter in the reference configuration (before deployment) is given as diameter x length. Porosity, pore density and pore size were calculated by projecting the neck orifice onto the cylindrical support surface used for the virtual FD deployment and calculating the areas and sizes of the pores as well as the area of the device wires. Regression analysis showed that these porosity variables were not linearly correlated ($R^2 < 0.2$) to the post-treatment aneurysm velocity VEL and inflow rate Q (our predictive variables).

Subject	Pre-Tx		Post-Tx		Change	
	Q (cc/s)	VEL (cm/s)	Q (cc/s)	VEL (cm/s)	ΔQ (cc/s)	ΔVEL (cm/s)
01	0.094	1.494	0.055	0.391	-42%	-74%
02	0.055	0.849	0.013	0.127	-77%	-85%
03	0.119	2.121	0.048	0.532	-59%	-75%
04	0.038	0.769	0.013	0.112	-66%	-85%
05	0.076	1.134	0.018	0.179	-76%	-84%
06	0.142	1.558	0.053	0.362	-63%	-77%
07	0.084	1.880	0.031	0.344	-63%	-82%
08	0.145	1.770	0.094	0.664	-35%	-62%
09	0.061	1.129	0.011	0.108	-82%	-90%
10	0.034	0.924	0.007	0.156	-80%	-83%
11	0.087	0.768	0.021	0.102	-76%	-87%
12	0.256	3.836	0.100	0.831	-61%	-78%
13	0.095	1.244	0.025	0.156	-74%	-87%

Supplementary Table II. Values of mean aneurysm inflow rate (Q) and mean aneurysm velocity (VEL) immediately pre and post treatment and their relative change from pre to post conditions (negative values indicate a relative reduction in the values).
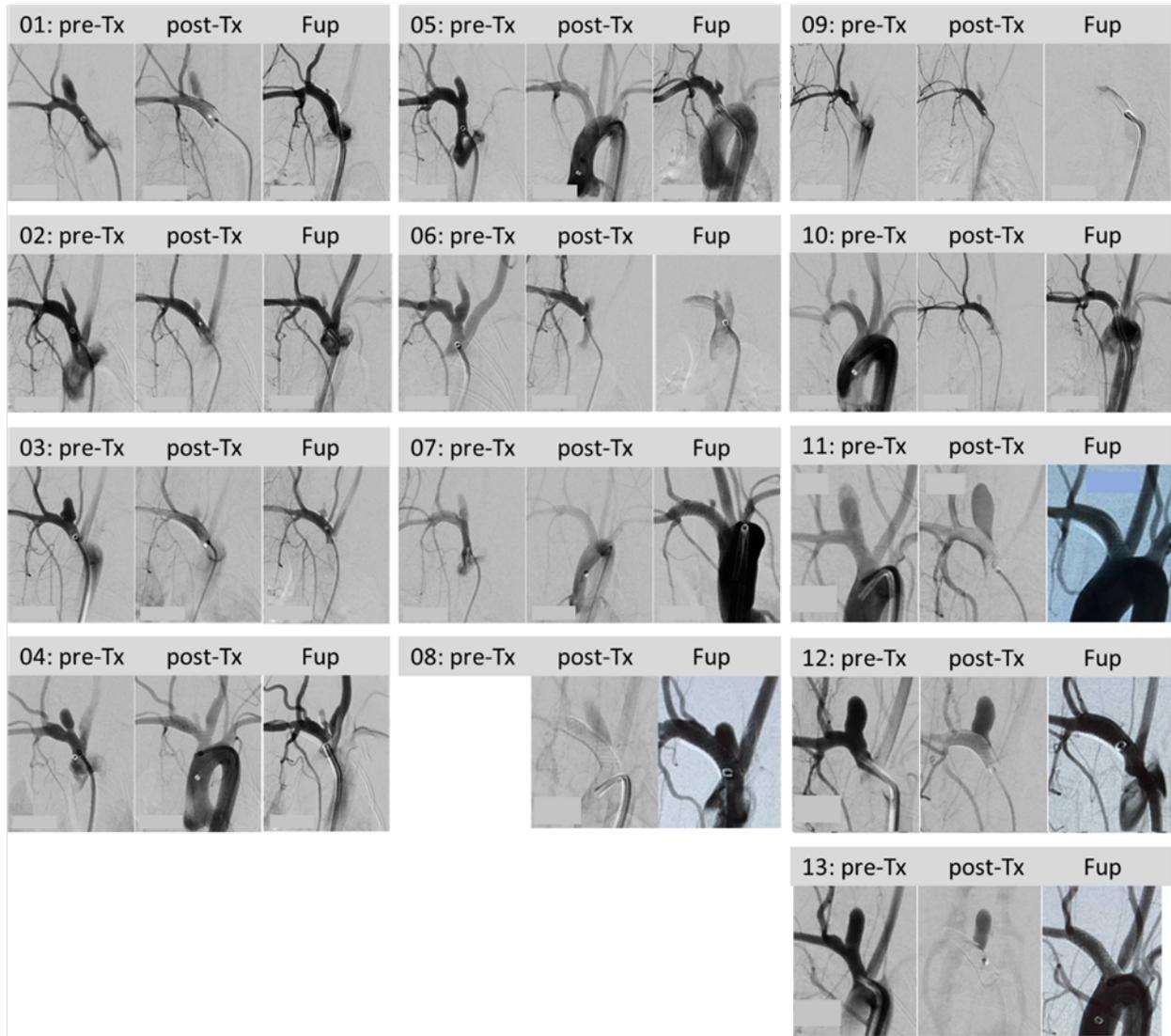
Supplementary Figure I: DSA images immediately prior to treatment (pre-Tx), immediately post-treatment (post-Tx), and at 8 weeks follow-up (Fup) for all 13 aneurysms included in the prediction evaluation study and listed in Table 1. Unfortunately, pre-Tx DSA for subject 08 were lost.
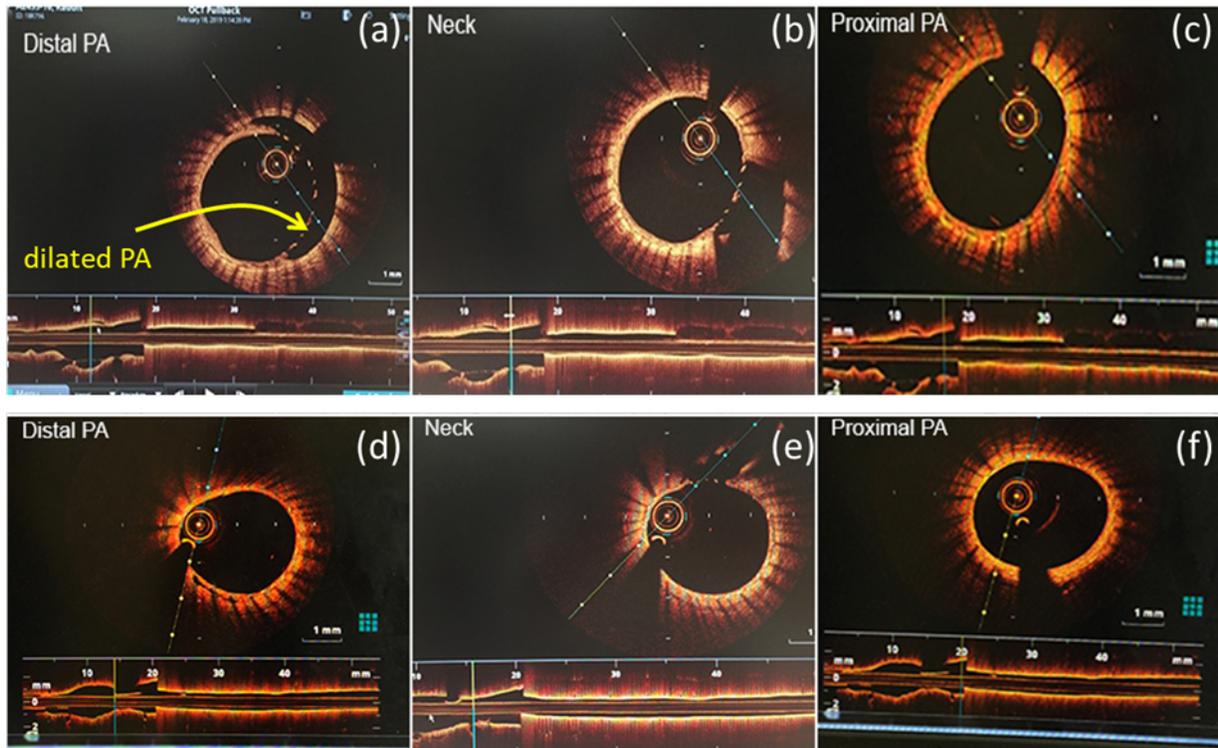
Supplementary Figure II: Optical coherence tomography (OCT) images acquired at follow up for subjects 2 (top row) and 9 (bottom row). Subject 2 was a false negative (CFD predicted low flow conditions but the aneurysm remained incompletely occluded). In this case, it can be seen that distal parent artery is larger than the device and the FD was not well apposed to the wall. For comparison, subject 9 was a true negative (CFD predicted low flow conditions and the aneurysm was completely occluded). In this case, the FD is well apposed to the wall. PA=parent artery.