



ON-LINE FIG. Image postprocessing pipeline.

On-line Table 1: Univariate analysis for the relation between geometric and hemodynamic parameters and rupture status

Characteristics	Unruptured (n = 62)	Ruptured (n = 55)	Odds Ratio (95% CI)	Nagelkerke R ²	VIF ^a	P Value
Location						
High-risk location ^b	22 (35%)	38 (69%)	4.06 (1.88–8.81)	0.173	1.3	<.001
Geometric parameters						
Quantitative parameters						
Size (mean) (SD) (mm)	7.35 (3.74)	6.64 (2.76)	0.94 (0.83–1.05)	0.015	2.0	NS
Aspect ratio (median) (IQR)	1.40 (1.08, 1.90)	1.69 (1.35, 2.07)	1.30 (0.78–2.17)	0.012	1.6	NS
Sphericity (nonspheric)	30 (48%)	24 (44%)	0.83 (0.40–1.71)	0.003	1.1	NS
Qualitative parameters						
Presence of daughter sacs	18 (29%)	30 (55%)	2.93 (1.37–6.29)	0.087	1.5	.006
Aneurysm type (bifurcation)	45 (73%)	45 (82%)	0.59 (0.24–1.42)	0.006	1.3	NS
Hemodynamic parameters						
Quantitative parameters						
MeanWSS (median) (IQR)	1.70 (1.25–3.10)	1.14 (0.57–2.46)	0.86 (0.71–1.04)	0.031	3.1	NS
MaxWSS (median) (IQR)	21.73 (13.05–37.72)	17.63 (7.94–38.37)	0.99 (0.98–1.01)	0.016	2.5	NS
OSI (median) (IQR) ^a	0.01 (0.01–0.02)	0.02 (0.01–0.03)	1.02 (1.00–1.05)	0.064	1.3	NS
Qualitative parameters						
Single inflow jet	61 (98%)	53 (96%)	2.30 (0.20–26.11)	0.005	1.8	NS
Concentrated inflow jet	60 (97%)	48 (87%)	0.23 (0.05–1.15)	0.043	2.2	NS
Unstable inflow jet	1 (2%)	10 (18%)	13.56 (1.67–109.75)	0.115	1.6	.015
Vortex complexity (complex)	20 (32%)	29 (53%)	2.34 (1.11–4.96)	0.056	1.8	.026
Vortex stability (unstable)	16 (26%)	22 (40%)	1.92 (0.88–4.20)	0.030	2.0	NS
Flow-pattern category ^c						
Simple stable	38 (61%)	4 (7%)	Reference: simple stable	0.062	— ^d	
Simple unstable	4 (7%)	22 (40%)	1.73 (0.39–7.60)			NS
Complex stable	8 (13%)	11 (20%)	2.38 (0.83–6.80)			NS
Complex unstable	12 (19%)	18 (33%)	2.59 (1.05–6.37)			.038
Location of flow impingement at ^e						
Neck	23 (37%)	12 (22%)	Reference: neck	0.051	1.2	
Dome	19 (31%)	13 (24%)	1.31 (0.49–3.54)			
Body	20 (32%)	26 (47%)	2.49 (1.004–6.19)			NS
ND	0 (0%)	4 (7%)				.049

Note:—OSI indicates oscillatory shear index; WSS, wall shear stress; ND, not detectable (impingement zone); VIF, variance inflation factor; IQR, interquartile range; NS, not significant; Max, maximum.

^a The original values are multiplied by 10³ to be analyzed statistically.

^b High-risk location: anterior cerebral, posterior communicating, and posterior circulation arteries according to Greving et al.⁴

^c Categorized flow patterns derived from vortex stability and complexity according to Cebral et al.⁸

^d Value excluded from multicollinearity calculation.

^e Location in the aneurysm sac, according to Cebral et al.⁹

On-line Table 2: Interobserver variability for qualitatively scored parameters

	Agreement	ICC
Presence of daughter sacs	75%	0.51
Aneurysm type	94%	0.87
Single inflow jet	92%	0.27
Concentrated inflow jet	89%	0.47
Unstable inflow jet	79%	0.20
Vortex complexity	86%	0.70
Vortex stability	79%	0.47
Flow patterns	73%	0.57

Note:—ICC indicates intraclass correlation coefficient.