On-line Table 1: Characterization of the investigated MCA aneurysms

	Case 1	Case 2
Sex	Female	Female
Age (yr)	83	63
Geometric parameters		
Neck (mm)	5.7	5.3
Height (mm)	8.2	8.0
Maximum diameter (mm)	11.6	10.5
Size (mm)	11.4 × 8.2 × 8.1	10.2 × 8.3 × 7.0
Risk factors		
Hypertension	−	+
Diabetes mellitus	−	−
Dyslipidemia	−	−
History: aneurysm rupture	−	−
Family history: aneurysm	−	−
Smoking	−	+
Body mass index	18.9	21.8
Treatment	Coil embolization	Neck clipping

On-line Table 2: List of the groups that participated in the CFD Rupture Challenge 2013

| Group	Affiliation	Origin
W. Fu, A. Qiao	Beijing University of Technology	China
S. Ramalho, N. Marques	blueCAPE Lda-CAE solutions	Portugal
P. Richardson	Cambridge University	UK
S. Sanchi	CFS Engineering	Switzerland
J. Osman, L. Goubergrits	Charité-Universitätsmedizin Berlin	Germany
J. Hron, H. Švihlová	Charles University	Czech Republic
N. Aristokleous, A. Anayiotos	Cyprus University of Technology	Cyprus
B. Chung, J. Cebral	George Mason University	US
A. Passalacqua	Iowa State University	US
S. Piskin, K. Pekkan	Istanbul Technical University	Turkey
S. Hodis, D. Dragomir-Daescu	Mayo Clinic	US
K. Schumacher, J. Sturgeon	MRIGlobal	US
E. Nordahl	North Dakota State University	US
H. Morales	Medisys Philips Research	France
A. Brown	CD-Adapco	UK
H. Meng, J. Xiang	State University of New York at Buffalo	US
P. Menon, P. Albal	Sun Yat-Sen University–Carnegie Mellon University Joint Institute of Engineering	US
G. Usera, M. Mendina	Universidad de la Republica	Uruguay
G. Copelli	Università degli Studi di Parma	Italy
A. Geers	Universitat Pompeu Fabra	Spain
O. Mierka, R. Münster	University of Dortmund	Germany
N. Ashton, D. Revell	University of Manchester	UK
N.W. Bressloff	University of Southampton	UK
O. Khan, K. Valen-Sendstad	University of Toronto	Canada
J. Pallares, S. Cito	University Rovira i Virgili	Spain
K. Kono	Wakayama Rosai Hospital	Japan
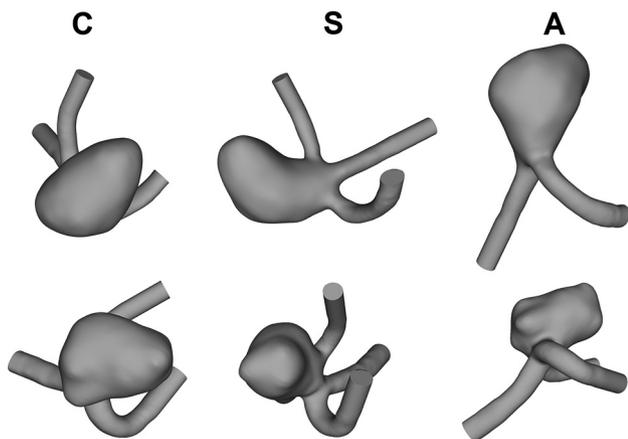
ON-LINE FIG 1. Lumen geometries in 3 perspectives (C, coronal; S, sagittal, A, axial views) of the investigated MCA aneurysms that were provided to all participating groups in order to predict the ruptured case and the corresponding rupture site. Case 1 (*top*); case 2 (*bottom*).

Case 1
n=4 (9%)

A (4)

Case 2
n=39 (91%)

B (19)

C (20)
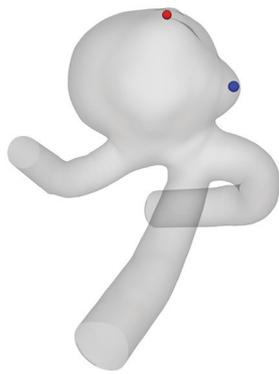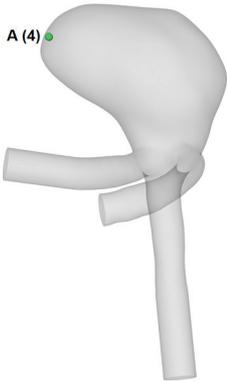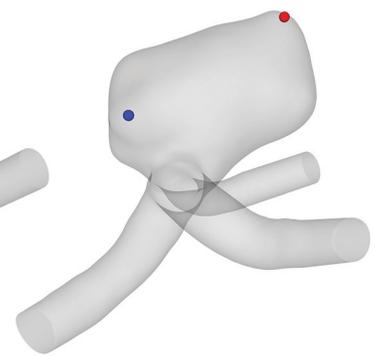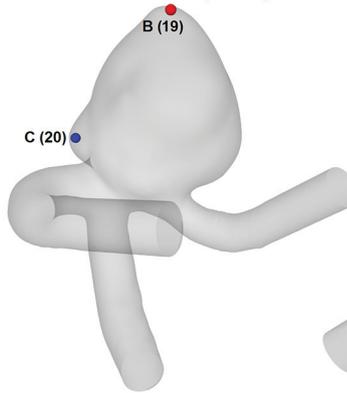
ON-LINE FIG 2. Predictions of the ruptured aneurysm and site by the 43 neurosurgeons. Nine percent chose the unruptured case 1, whereas 91% picked the ruptured case 2. Two rupture sites were identified in the second aneurysm with approximately equal distribution.

Questionnaire

Two middle cerebral artery aneurysms are shown: unruptured and ruptured ones. The rupture site in the ruptured aneurysm was identified. Predict the ruptured case and the rupture site.


Case 1

Case 2
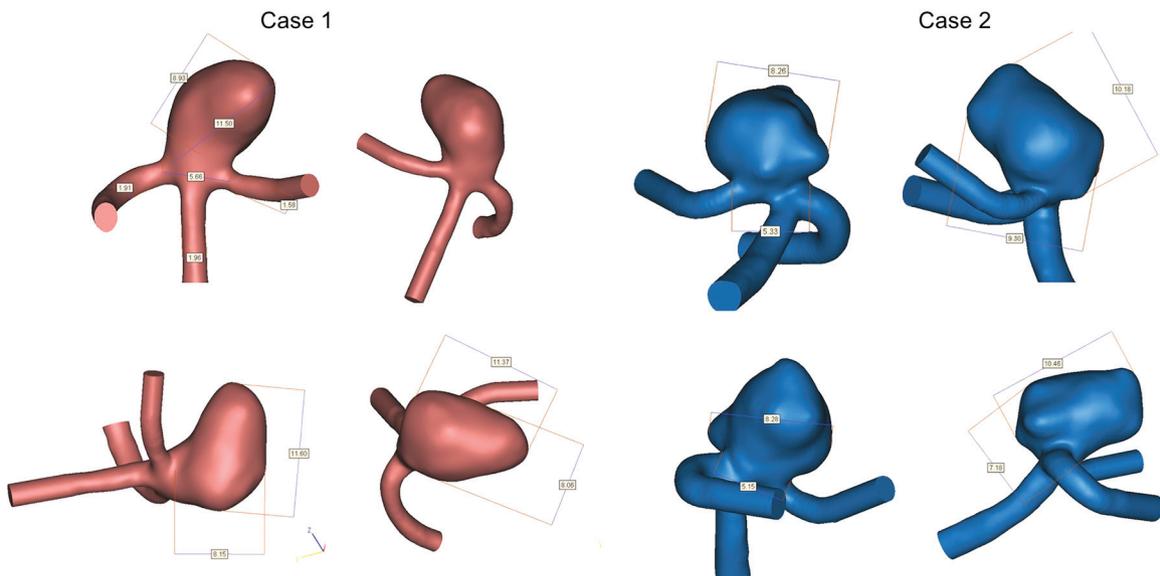
Neck: 5.7 mm, Height: 8.2 mm
Max: 11.6 mm
Size : 11.4×8.2×8.1 (M1 diameter: 2.0 mm)

Neck: 5.3 mm, Height: 8.0 mm
Max: 10.5 mm
Size : 10.2×8.3×7.0 (M1: 2.0 mm)

Years of experience: _____ years
Your prediction : The ruptured aneurysm is Case ___. Encircle a ruptured point that you predicted.
Provide reasons for the prediction of the rupture case and the rupture point.

ON-LINE FIG 3. Questionnaire for the neurosurgeons.
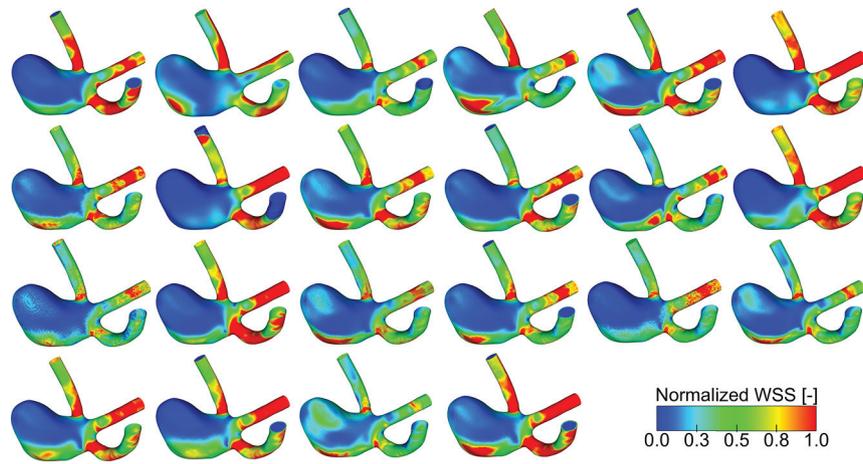
ON-LINE FIG 4. Sagittal view of the normalized wall shear stress distribution in the unruptured case 1 predicted by 22 groups with different simulation settings.