OCT Angiography in the diagnosis and follow-up of retinal arterial macroaneurysms
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Purpose
To describe Optical Coherence Tomography Angiography (OCTA) findings in retinal arterial macroaneurysm associated with macular edema and to correlate OCTA findings to conventional multimodal imaging (MMI).

Methods
The clinical course, conventional MMI findings including fundus color photography, spectral domain OCT (SD-OCT Spectralis, Heidelberg Engineering, Heidelberg, Germany), fluorescein angiography (FA, Heidelberg Engineering, Heidelberg, Germany) and OCTA (Optovue, Inc., Freemont, CA or PlexElite, Zeiss, Dublin, CA) findings at baseline and during the follow-up of 4 eyes (4 patients) with symptomatic RAM associated with macular edema were documented.

Results
Four eyes of 4 patients, all women, aged 82, 56, 62 and 46 years, which presented with progressive visual decline were included. On conventional MMI, exudative RAM with macular edema and lipid exudation were visible in included eyes. On OCTA, a flow was detected in 3 RAM at baseline and no flow in 1 RAM (case 4) consistent with FA findings in all cases. Case 1 and 2 were treated by focal laser photoacoagulation. One month after treatment, FA showed RAM occlusion. SD-OCT showed a RAM and retinal thinning and a decreased central foveal thickness, resulting in visual acuity improvement. On OCTA, no flow was detectable in the RAM at 1-month follow up. Case 3 was not treated at baseline. In this eye no flow was detected on OCTA at 2 months follow-up. This suggests a spontaneous occlusion during the follow-up, which was confirmed by FA. Case 4 did not presented flow at baseline corresponding to FA findings consistent with a spontaneous occlusion and was not treated.

Conclusion
OCTA is able to detect the presence or absence of flow signal within retinal arterial macroaneurysms, which may decrease the need for dye angiography in selected cases with exudative RAM and help in treatment decision making and follow-up.

References