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AUTHORS

AUTHORS (LAST NAME, FIRST NAME): Rebhun, Carl B.[1]; Moult, Eric M.[2, 3]; Ploner, Stefan B.[4]; Rifai, Fareed[1, 7]; Moreira, Carlos[1, 5]; Alibhai, A. Yasin[1]; Schottenhamml, Julia[4]; Lee, ByungKun[3, 2]; Baumal, Caroline R.[1]; Rosenfeld, Philip J.[6]; Duker, Jay S.[1]; Fujimoto, James G.[3, 2]; Waheed, Nadia[1]

INSTITUTIONS (ALL):

1. Ophthalmology, Tufts Medical Center, Boston, MA, United States.
2. Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Boston, MA, United States.
3. Research Laboratory of Electronics, Massachusetts Institute of Technology, Boston, MA, United States.
4. Pattern Recognition Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany.
5. Federal University of Sao Paulo, Sao Paulo, Brazil.
6. Bascom Palmer Eye Institute of University of Miami Leonard M. Miller School of Medicine, Miami, FL, United States.

7. University of South Alabama School of Medicine, Mobile, AL, United States.

Commercial Relationships Disclosure (Abstract): Carl Rebhun: Commercial Relationship: Code N (No Commercial Relationship) | Eric Moult: Commercial Relationship: Code N (No Commercial Relationship) | Stefan Ploner: Commercial Relationship: Code N (No Commercial Relationship) | Fareed Rifai: Commercial Relationship: Code N (No Commercial Relationship) | Carlos Moreira: Commercial Relationship: Code N (No Commercial Relationship) | A. Yasin Alibhai: Commercial Relationship: Code N (No Commercial Relationship) | Julia Schottenhamml: Commercial Relationship: Code N (No Commercial Relationship) | ByungKun Lee: Commercial Relationship: Code N (No Commercial Relationship) | Caroline Baumal: Commercial Relationship(s);Allergan:Code C (Consultant) ;Genentech:Code C (Consultant) | Philip Rosenfeld: Commercial Relationship(s);Carl Zeiss Meditec:Code R (Recipient) ;Carl Zeiss Meditec:Code F (Financial Support) ;Carl Zeiss Meditec:Code C (Consultant) | Jay Duker: Commercial Relationship(s);Carl Zeiss Meditec:Code C (Consultant) ;Optovue:Code F (Financial Support) ;Topcon:Code C (Consultant) ;Carl Zeiss Meditec:Code F (Financial Support) ;Optovue:Code C (Consultant) ;Topcon:Code F (Financial Support) | James Fujimoto: Commercial Relationship(s);Optovue:Code I (Personal Financial Interest) ;Optovue:Code P (Patent) ;Carl Zeiss Meditec:Code P (Patent) | Nadia Waheed: Commercial Relationship(s);Macula Vision Research Foundation:Code F (Financial Support) ;Janssen:Code C (Consultant) ;Ocudyne:Code C (Consultant) ;Optovue:Code R (Recipient) ;Regeneron:Code C (Consultant) ;Genentech:Code C (Consultant) ;Nidek:Code R (Recipient) ;Carl Zeiss Meditec:Code R (Recipient)
Study Group: (none)

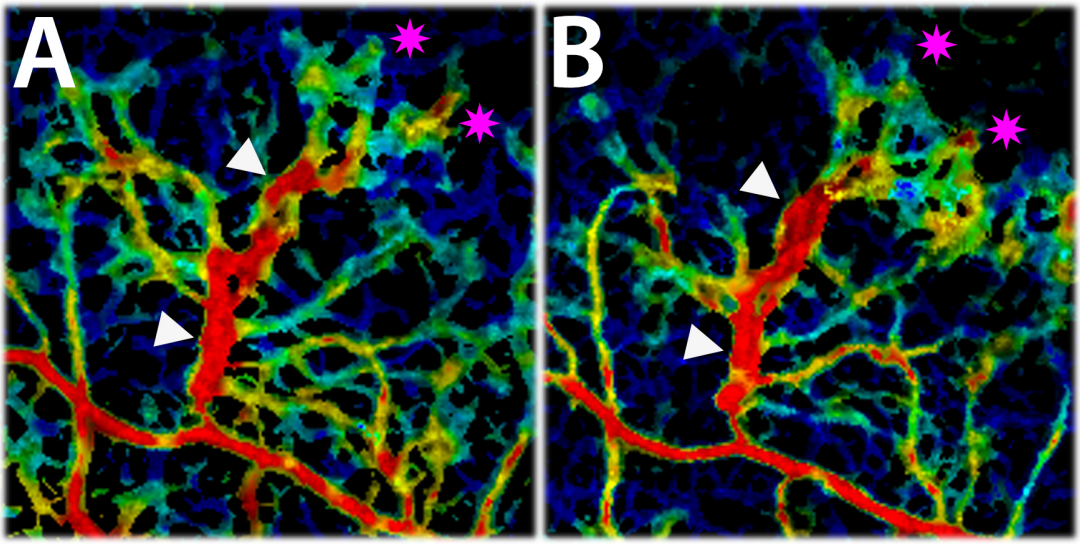
ABSTRACT

TITLE: Visualizing Relative Blood Flow Speeds in Choroidal Neovascularization Using Variable Interscan Time Analysis (VISTA-) Optical Coherence Tomography Angiography (OCTA)

ABSTRACT BODY:

Purpose: Recent advances in optical coherence tomography angiography (OCTA) provide insight into the natural history of choroidal neovascularization (CNV) secondary to neovascular age related macular degeneration (nAMD). Visualizing relative blood flow speeds longitudinally within CNV may provide valuable additional information regarding the evolution of CNV and their response to vascular endothelial growth factor (VEGF) inhibitors.
Methods: OCTA imaging of patients with CNV secondary to nAMD was performed using a 400kHz, 1050nm swept source OCT system with a 5 repeated B-scan protocol. Variable interscan time analysis (VISTA) was used to compute relative flow speeds from pairs of B-scans having 1.5 ms and 3.0 ms separations, which were then mapped to a color space for display.
Results: Seven eyes of 6 subjects (4 women and 2 men) with nAMD were evaluated. Prior to initial imaging, 6 of 7 eyes received anti-VEGF injections, while 1 eye was treatment naïve (Figure 1). CNV in all eyes at each visit showed

relatively higher flow speed in the trunk vessels and lower flow speed at the periphery. Changes in the extent and distribution of high and low speed vessels was observed as anti-VEGF treatment continued, with some low speed vessels near the central trunk becoming larger in diameter and acquiring high flow speed characteristics.
Conclusions: Longitudinal follow-up of CNV secondary to nAMD demonstrated increased flow speed in the main trunk vessels and decreased flow speed in the smaller vessels, generally at the periphery of the lesion. Changes in flow characteristics were observed after anti-VEGF treatment. Visualization of relative blood flow speeds with VISTA-OCTA in CNV may be useful for developing quantitative clinical endpoints.



A) OCTA-VISTA of treatment naïve CNV. B) OCTA-VISTA 1 month after first treatment with anti-VEGF. Note faster flow in central trunk vessels (white arrowheads) and slower flow in the periphery (pink asterisks). In VISTA-OCTA images, blue corresponds to slower blood flow and red to faster blood flow.

DETAILS

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Other Registry Site (Abstract): (none)
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AFFIRMATIONS

Affirmations: Affirmation that submission of this abstract has been approved by the Principal Investigator.
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