SSOCT Enface Choroidal Vasculography

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Purpose: To compare swept source OCT enface choroidal vasculography with ICG angiography.

Methods: In this retrospective study, 9mm x 9mm OCT angiography examinations with 512 x 512 A-scans were performed using a commercially available (outside of the US) swept source OCT instrument using a 1050 nanometer wavelength. Standard fluorescein and ICG angiography was performed on each patient. The OCT-A of each patient was compared to the FA. The ICG was compared to inverted and re-segmented OCT slabs of the structural data inherent in the OCT-A data set. Multiple slabs at different depths in the choroid were evaluated.

Results: Numerous cases of patients with CSCR, DRP, and CNV were retrospectively examined for this study. In each case the correlation between ICG and enface choroidal vasculography was considerable. All vessels in the ICG were also visible in the choroidal vasculography with the added benefit that there was depth resolution in the vasculography.

Conclusions:
This study shows an interesting potential for visualizing choroidal vasculature without using dye. The benefit of using the deeper penetration of the 1050 nanometer wavelength as well as the very dense data contained in the 512 x 512 OCT-A scans set, opens up diagnostic possibilities that need to be studied further and clinically validated. This method needs to be evaluated for patients with polypoidal lesions as well as choroidal neovascularisations, to see if the smaller vessels near the RPE can be visualized correctly.