Choroidal macrovessel: a multimodal imaging analysis

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Purpose:
Choroidal macrovessel (CMV) is a vascular anomaly characterized by a large serpiginous choroidal vessel with early filling on indocyanine green angiography (ICGA). According to the several reports on CMV, the etiology of CMV seems to be stagnations of choroidal veins due to blood flow obstruction or local vasodilation; however, little is known about the choroidal circulation and hemodynamics. The aim of this study is to analyze the choroidal circulation and hemodynamics in a case with CMV using laser speckle flowgraphy (LSFG).

Methods:
A 39-year-old woman with CMV was examined by funduscopic examination, swept-source optical coherence tomography (SS-OCT), fluorescein angiography (FA), ICGA, and LSFG.

Results:
SS-OCT showed a dilated hollow configuration in the Haller’s layer, and retinal pigment epithelium (RPE) elevation together with Bruch’s membrane to the sensory retina. FA demonstrated hyperfluorescence as a window defect corresponding to the choroidal lesion. ICGA detected hyperfluorescence and hypofluorescence in the mass during the initial and late phases, respectively. LSFG showed a warm color reflection, consistent with the CMV site.

Conclusions:
CMV is a morphological vascular change showing hyper-perfusion, but not stagnations of choroidal veins. Although there are some common morphological features between CMV and pachychoroid spectrum diseases, our multimodal imaging analysis indicated that the two disorders should be a different disease spectrum.