Optical Coherence Tomography Angiography of Chronic Central Serous Chorioretinopathy in Elderly Patients

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PURPOSE

To noninvasively describe with Optical Coherence Tomography Angiography (OCTA) the features of retinal and choroidal vascular changes in elderly patients with RPE abnormalities and serous pigment epithelial detachments overlying a thick choroid. These cases were previously followed as chronic central serous chorioretinopathy (CSC) by Spectral-Domain OCT (SD-OCT).

METHODS

Cross-sectional, observational study of 10 patients between 55 and 64 years of age with central serous chorioretinopathy. OCTA was performed on 3x3 and 6x6 mm area centered on the fovea. The 3D angiography was segmented in 4 layers: superficial and deep (to show retinal vasculature), outer retina (to identify choroidal neovascularization) and chorio-capillary.

RESULTS

Serous retinal detachment was clearly visualized by OCTA in 10 eyes of 10 patients (9 males, 1 female) with a previous diagnosis of CSC (mean duration 48.2 months, range 12-63). Mean age was 62.4 years (range 55-64). An RPE disturbance was identified in 10 eyes of 10 patients. In 4 patients OCTA detected a distinct choroidal neovascular pattern in the choriocapillaris, and the RPE disturbance was defined as a Type 1 CNV. In these 4 patients the thickening of the choroid was focal and not diffuse, with obliteration of the overlying choriocapillaris and Sattler’s layer. The 10 eyes with flat irregular RPE, OCTA showed a clear neovascular net and the patients were successfully treated with anti-VEGF agents.

DISCUSSION

Distinguishing avascular flat irregular RPE from Type 1 CNV can be challenging. Often Type 1 neovascular tissue overlying focal areas of choroidal thickening and choroidal hyperpermeability is an entity overlapping AMD and CSC, in the absence of clinical or imaging characteristics of one or the other, and can be visualized by means of OCTA. Combining information obtained with different imaging modalities could be the best approach for diagnosing and treating ambiguous cases.

CONCLUSIONS

According to PED morphology in CSC, OCTA allows to detect associated CNV, previously undiagnosed by conventional imaging modalities.

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<td>F, 64ys. FA shows a mottled hyperfluorescence in the macula with some pinpoints but without a definite leakage point. ICGA shows moderately dilated choroidal vessels. In SD-OCT a flat RPE disturbance is noticeable beneath the serous detachment, which is identified as a Type 1 CNV with OCTA.</td>
<td>M, 55ys. Diagnosed with CSC in July 2013. Previous tx: Eplerenone. FA shows periloveal hyperfluorescent pattern. SD-OCT shows a serous retinal detachment and a thin, flat PED. OCTA shows a well-defined neovascular net nasal to the macula. Therapy: anti-VEGF.</td>
<td>M, 61ys. FA limited hyperfluorescence secondary to an occult choroidal neovascularization. ICGA shows a large caliber choroidal vessel. A flat RPE disturbance is evident in SD-OCT overlying an area of choroidal thickening. OCTA can clearly identify a Type 1 CNV.</td>
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REFERENCES


The authors have no financial interest to disclose.