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Optical coherence tomography angiography in age-related macular degeneration

Miklos Resch[1]

[1]Semmelweis University of Medical Sciences

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Miklos Resch

ABSTRACT

All subjects underwent a comprehensive ophthalmic examination, including best-corrected visual acuity (VA) assessment (ETDRS Charts), slit lamp, and fundus examinations. After pupil dilation, OCT-A was performed, using the AngioVue OCT-A system (RTVue-XR Avanti, OptoVue, Fremont, CA, USA). Scans with the highest resolution were obtained in the central 3×3 mm area, centered on the foveola. The superficial capillary plexus was detected automaticaly between the internal limiting membrane (ILM) and the inner plexiform layer (IPL); and the deep capillary plexus between the IPL and the outer plexiform layer (OPL). Segmentation errors were manually controlled for each layer to avoid the potential artifacts due to the distortion of anatomy with nAMD.

Foveal thickness was measured in the central 1.0 mm area. Superficial and deep vessel density (VD) was evaluated in the whole image, in the central 1 mm area (fovea), and in the 3 mm ring-shaped parafoveal area. Superficial non-flow area and foveal avascular zone (FAZ) areas were measured, using the built-in AngioAnalytics software (Version ReVue 2018.0.0.18) OptoVue system with an automated segmentation algorithm.