Features of age-related macular degeneration assessed with three-dimensional Fourier-domain optical coherence tomography

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BACKGROUND/AIMS
Age-related macular degeneration (AMD) is among the leading causes of severe visual loss in individuals over 60 years old. Retinal changes associated with AMD were previously studied by time-domain optical coherence tomography (OCT). Recently, Fourier-domain OCT (FD-OCT) has been introduced. FD-OCT provides increased scan resolution and scanning speed, and generates three-dimensional (3D) OCT images. The purpose of this study was to demonstrate features of AMD assessed with high-density scanning 3D-FD-OCT (Topcon 3D-OCT1000).

METHODS
The study was designed as a prospective, observational case series. Five patients with typical morphological changes due to AMD were chosen based on funduscopic findings. Eyes with non-exudative- and exudative AMD were included. 3D-FD-OCT images were obtained, and typical morphological changes associated with AMD were presented.

RESULTS
FD-OCT provided detailed 3D-images of retinal structure. In addition, FD-OCT showed improved retinal coverage and image quality. FD-OCT B-scan imaging identified typical retinal changes associated with AMD. In addition, FD-OCT imaging revealed information about the extent and the 3D shape of retinal lesions.

CONCLUSION
3D-FD-OCT imaging is useful for diagnosing and following patients with AMD. In addition, 3D-FD-OCT provided information about the extent and 3D shape of retinal pathologies and showed improved retinal coverage.

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