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Retina and Vitreous

Nº CEP

CORRELATION BETWEEN fundus findings and optical coherence tomography images in patients with diabetic macular edema.

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Introduction: Diabetic macular edema is a major cause of vision loss in diabetic retinopathy. It is caused by an abnormal retinal vascular permeability and may manifest as a focal or diffuse retinal thickening with or without exudates. Optical Coherence Tomography (OCT) is a noninvasive and noncontact imaging technique, which is used in the diagnosis and management of a variety of macular diseases. OCT produces cross sectional images of optical reflectivity in the retina in analogy to ultrasound B-scan, but with higher resolution.

Purpose: To correlate fundus findings with OCT images in patients with diabetic macular edema.

Methods: Patients with macular edema were diagnosed after indirect ophthalmoscopy. Fundus photographs and OCT images of macula area were taken during the Diabetic Eye Campaign in September 2000. OCT scans were obtained using the cross sectional (horizontal and vertical scans) of the affected areas. Thickness of the macula was measured.

Results: Plaques of hard exudates were visible as an area with high intraretinal reflectivity with shadowing of the deeper layers. Cystoids edema appeared as a retinal thickness with areas of low internal reflectivity corresponding to intraretinal cyst and fluid accumulation. In some scans, OCT showed images corresponding to a vitreoretinal traction that was not visualized in indirect ophthalmoscopy examination. Areas of hemorrhage appeared as blockage of the reflection from the deeper layers.

Conclusion: OCT images are compatible with clinical fundus findings and may show findings, which are not visualized by indirect ophthalmoscopy, such as vitreomacular traction. The presence of vitreoretinal adherence in macular edema suggests the vitreous may play a role in the pathophysiology of macular edema.