

Demonstration of short-term perfluorocarbon liquids tamponade efficacy in the management of proliferative diabetic retinopathy with optical coherence tomography (OCT)

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Purpose:

To evaluate the efficacy of short-term tamponade with perfluorocarbon liquids (PFCL) in management of proliferative diabetic retinopathy (PDR) with optical coherence tomography (OCT).

Methods:

The investigation includes 22 eyes (22 patients) with PDR and edema of the macula. The age of the patients was 17-54 (mean $36,2 \pm 13,5$). Diabetes mellitus (DM) of I type was observed in 15 patients, II type - in 7. Duration of DM was 2-25 years (mean $14,5 \pm 3,4$). All the patients have undergone pars plana vitrectomy with removal of posterior hyaloid and proliferative membranes in PFCL medium (vitreoress). PFCL was left in the vitreous cavity for 6-10 days (mean $7,4 \pm 2,3$). During short-term tamponade macular thickness was measured daily with optical coherence tomography OCT-3 (Zeiss-Meditec).

Results:

At the first day mean macular thickness was $458 \pm 92 \mu\text{m}$ and during tamponade reduced to $244 \pm 53 \mu\text{m}$. Stabilization of retinal thickness marked maximal PFCL tamponade effect and served an indication for transpupillary laser coagulation (TLC). TLC was performed with argon laser according to the data of fluorescein angiography. PFCL was exchanged for saline solution, gas or silicone oil next day after TLC.

Conclusion:

The use of OCT in patients with PDR actually proved dynamic decrease of macular edema during short-term PFCL tamponade and determined optimal terms for TLC and PFCL removing.

