Anterior chamber aqueous flare is a strong predictor for proliferative vitreoretinopathy in patients with rhegmatogenous retinal detachment

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Abstract

PURPOSE:

To investigate preoperative aqueous flare as a predictive factor for proliferative vitreoretinopathy (PVR) redetachment in patients with rhegmatogenous retinal detachment.

METHODS:

Preoperatively, the aqueous flare of 116 consecutive patients with retinal detachment was measured quantitatively with a laser flare-cell meter (Kowa FM-500; Kowa Company, Ltd, Tokyo, Japan). Seventy-four healthy partner eyes and 41 eyes of healthy age-matched patients served as controls. At least 6 months after surgery, patients were reevaluated, whether surgery was performed again because of PVR redetachment.

RESULTS:

Eyes with retinal detachment that developed PVR redetachment later on (n = 12) had higher flare values than eyes with uncomplicated retinal detachment (n = 104) (median, 27.63 vs. 8.83 photon counts per millisecond; $P < 0.0001$). No eye with PVR redetachment had a flare value <10.8 photon counts per millisecond. In eyes with flare values exceeding 15 photon counts per millisecond, the odds of PVR redetachment development increases 16-fold.

CONCLUSION:

Our study shows that the breakdown of the blood-ocular barrier as determined by aqueous flare is a major risk factor for PVR redetachment. The laser flare-cell meter is a fast, noninvasive, and safe tool that allows predicting the PVR redetachment risk preoperatively. It provides the surgeon with an estimate to choose those patients who could benefit from intravitreal drugs to prevent PVR.

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