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CHOROIDAL THICKNESS ASSOCIATED WITH PERSISTENT SUBRETINAL FLUID AFTER SURGERY FOR RHEGMATOGENOUS RETINAL DETACHMENT

Dalma--Weiszhausz J.*, Ortiz--Ramirez G., Amadeo--Oreggioni G.P., Ramos--Betancourt N.

APEC Asociacion para Evitar la Ceguera en México ~ Mexico City ~ Mexico

Persistence of subretinal fluid (PSF) is a common side effect after retinal detachment repair. According to most studies, the frequency of PSF depends not only on the surgical technique employed but also on conditions such as macular involvement (macula-off RRD) and long-standing retinal detachment. It is hypothesized that PSF may have downstream implications for visual acuity by causing a slow degradation and disruption of the photoreceptors.

Classical theories regarding PSF after RRD surgery include choroidal ischemia, incomplete intraoperative drainage of subretinal fluid (SF), the high viscosity of SF hindering absorption by the retinal pigment epithelium (RPE), and RPE dysfunction. Recently, a new theory has emerged suggesting that PSF may be associated with the pachychoroid spectrum. We propose to evaluate the association between persistent subretinal fluid (PSF) and subfoveal choroidal thickness (SCT) in patients undergoing surgical repair for rhegmatogenous retinal detachment (RRD) using different techniques.

This prospective, observational study included 56 patients who underwent pneumatic retinopexy (PR), scleral buckling (SB), pars plana vitrectomy (PPV), or combined SB+PPV. SCT and best-corrected visual acuity (BCVA) were measured using enhanced depth imaging OCT at baseline and at 1 week, 1, 3, and 6 months postoperatively. PSF was assessed and correlated with SCT, BCVA, and surgical technique.

Among 56 eyes from 56 postoperative RRD patients, 28 had PSF in the first postoperative week, while 28 did not. Mean SCT in the PSF group was 358 μm [IQR: 303-390], significantly higher than 274 μm [IQR: 243-304] in the non-PSF group ($p < 0.01$). Although SCT decreased over time, the difference between groups persisted. Complete PSF resorption occurred in 13 of 28 cases (46.4%) within six months, without significantly affecting final BCVA.

Patients with PSF had persistently thicker choroids, suggesting altered choroidal circulation. However, PSF did not negatively impact BCVA within six months postoperatively. Longer follow-up is needed to assess potential long-term effects.

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