



Persistent Subretinal Fluid: Wait or Treat?

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Abstract

Persistent subretinal fluid (SRF) may occur even after successful surgery for rhegmatogenous retinal detachment (RRD). In most cases, persistent SRF resolves spontaneously within a year, but persistent SRF may cause poor central vision, photoreceptor damage, and the irreversible loss of visual function. Therefore, a variety of interventions have been developed to manage persistent SRF, including the prophylactic use of steroids. As far as we know, an intravitreal steroid injection has never been used in the treatment of persistent SR. This report is a description of steroid treatment used in the case of a 46-year-old male patient with SRF persisting for 15 months after pars plana vitrectomy surgery for the treatment of macula-off RRD. A single-dose intravitreal triamcinolone acetonide (IVTA) injection (4 mg/0.1 mL) was administered; however, no improvement was seen in the lesions. It was concluded that an IVTA injection should be used in a limited fashion in patients with persistent SRF.

Keywords: Persistent subretinal fluid, rhegmatogenous retinal detachment, visual dysfunction.

Introduction

Persistent subretinal fluid (SRF) may be observed even after successful surgery for rhegmatogenous retinal detachment (RRD); the incidence of this well-known phenomenon varies in the literature (1). Persistent SRF after successful RRD surgery has been reported to occur in 47% to 100% of cases of macula-off retinal detachment (1-3). Long duration of persistent SRF after RRD surgery is probably multifactorial. Possible causes include buckling surgery, cryocoagulation, and the high viscosity of SRF due to long-standing retinal detachment (2). Other reasons may be the breakdown of the blood-retinal barrier, and surgical trauma to the retinal pigment epithelium-Bruch's membrane complex (3).

In most cases, persistent SRF disappears spontaneously within 1 year (4). However, delayed absorption of SRF may not occur in some cases. This case is presented as an example of steroid treatment in a patient with persistent SRF.

Case Report

A 46-year-old male patient presented with SRF persisting for 15 months after experiencing a right superior macula-off RRD. Pars plana vitrectomy surgery with sulfur hexafluoride (SF₆) gas was performed. Resorption of the peripheral SRF was achieved within 1 month. His right visual acuity was 20/40 and the patient had metamorphopsia. Optical coherence tomography of the right eye revealed multiple, subretinal, bleb-like lesions beneath the fovea (Fig. 1). The lesions were demonstrated to be only minimally hyperfluorescent, with no leakage or staining. The patient's findings remained stable for 15 months. A single-dose intravitreal triamcinolone acetonide (IVTA) injection (4 mg/0.1 mL) was performed; however, no improvement in the lesions was seen.

Discussion

While several studies have concluded that persistent SRF delays visual recovery without affecting one's final outcome

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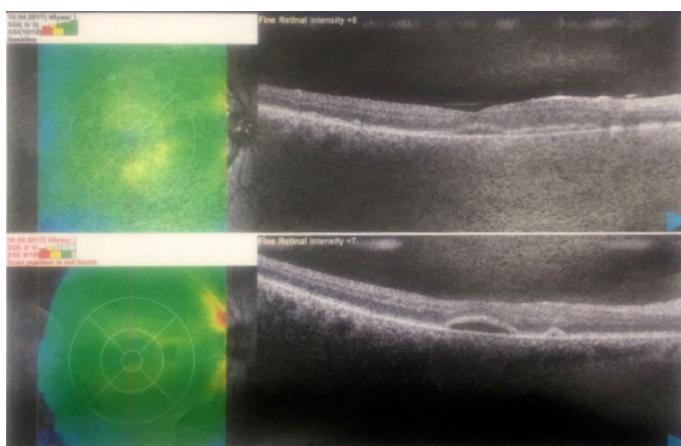


Figure 1. Optical coherence tomography of the right eye revealed multiple, subretinal, bleb-like lesions beneath the fovea.

(1, 5), patients with persistent SRF—such as in our case—have cause for complaint due to poor central vision and metamorphopsia. Furthermore, persistent SRF may cause photoreceptor damage and the irreversible loss of visual function (6). As a result, several interventions have been used to manage persistent SRF. First, Koinzer et al. (7) found that selectively damaging retinal pigment epithelial cells using a neodymium: yttrium lanthanum fluoride laser is both safe and effective. Second, Itakura et al. (8) demonstrated that persistent SRF can be treated using an intravitreal injection of SF₆ gas. Third, Wu et al. (9) noted that an oral dose of 0.5 or 1 mg prednisolone/kg for 3 days postoperatively lowered the incidence of SRF and facilitated the absorption of SRF. In addition, the patients in that study demonstrated heightened improvement in their best-corrected visual acuity (BCVA) postoperatively. Finally, Mirshahi et al. (10) reported that the prophylactic injection of single-dose of IVTA at the end of the RD surgery might increase one's final BCVA, despite the presence of persistent SRF. In our case, an intravitreal steroid injection was used 15 months after RRD surgery to treat persistent SRF. As far as we know, an intravitreal steroid injection has never been used in the treatment of persistent SRF that occurred following RRD. Our patient showed no improvement in terms of either optical coherence tomography findings or BCVA following the injection. Therefore, we can conclude that, other than the role that inflammation plays, other mechanisms must exist in this case and an IVTA injection should be used in a limited fashion in patients with persistent SRF occurring after surgery. Further supportive data are required to reveal the role that steroids play in the treatment of persistent SRF.

Disclosures

Informed consent: Written informed consent was obtained

from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Involved in design and conduct of the study (ETY, BB); preparation and review of the study (ETY, BB); data collection (ETY, BB).

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