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Pars Plana Vitrectomy for Delayed Postoperative Hemorrhagic Cystoid Macular Edema

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Abstract

A 78-year old female with a history of cataract and pseudoexfoliation syndrome underwent complicated phacoemulsification and anterior chamber intraocular lens placement in her right eye. Two months post operatively, her corneal edema and intraocular inflammation subsided, with improvement in vision to 20/50. However, fourteen months after her initial surgery she developed hemorrhagic cystoid macular edema and a decrease in vision to 20/100. After pars plana vitrectomy the macular edema subsided and her vision returned to 20/50. Hemorrhagic cystoid macular edema may occur remotely following complicated anterior segment surgery and necessitate vitrectomy.

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INTRODUCTION

Cystoid macular edema (CME) following cataract surgery is well described in the literature,[1,2] with an approximate incidence in uncomplicated cases of 1-2% clinically and 10% angiographically.[3,4] The pathogenesis of CME involves increased perifoveolar permeability and vascular instability from chronic inflammation or traction, leading to cystic fluid spaces intraretinally. Occasionally, intraretinal hemorrhages may accompany the cystoid macular edema.[5] Herein we report a case of post-operative CME associated with a macular hemorrhage which resolved following pars plana vitrectomy.

CASE REPORT

A 78-year-old female with a history of pseudoexfoliation syndrome developed a visually significant age-related cataract OD with a best corrected visual acuity of 20/50. She underwent clear cornea cataract extraction with topical anesthesia. Intraoperatively, zonular instability was first noted during capsulorrhexis, which resulted in posterior displacement of the lens during phacoemulsification. A limited anterior vitrectomy was performed, an anterior chamber intraocular lens placed, and the wound closed with interrupted 10-0 nylon sutures. Post-operative day one, visual acuity was hand motion at 6 feet OD. Examination revealed 3+ corneal edema with striae in Descemet's membrane and a 2+ anterior chamber reaction. The pupil was irregular with apposition to the corneal wound. Retained cortical material was present in the posterior chamber. Intraocular pressure was 14mm Hg. A regimen of prednisolone acetate 1 gtt OD every hour was begun. Four days post operatively, vision had improved to count fingers and her intraocular pressure remained normal. A small piece of retained cortical material was present in the vitreous. No macular edema was seen and ocular coherence tomography measured a central retinal thickness of 160 microns. Within 6 weeks, the anterior chamber reaction subsided, the cortical material in the vitreous dissipated, and visual acuity was 20/50 OD. The retained cortex in the posterior chamber remained and a 1+ posterior capsular opacification developed.

Fourteen months following cataract surgery, visual acuity decreased to 20/100 OD and cystoid edema and a macular hemorrhage were evident in the right eye. OCT demonstrated a central foveal thickness of 700 microns OD (Figure 1), with a highly reflective inner retinal surface secondary to intraretinal hemorrhage.Fluorescein angiography revealed a classic petalloid pattern of cystoid macular edema with intraretinal hemorrhage (Figure 2). Of note, her medical history was negative for diabetes, hypertension, or venous occlusive disease. Subsequently the patient underwent a standard three-port pars plana vitrectomy. The retained cortical material in the posterior chamber was removed and the adhesion between the iris and the clear corneal wound relieved. A sub-Tenon's injection of

dexamethasone, 1 cc, was given at the conclusion of the case. The patient's vision improved in concert with the reduction of the macular edema and resolution of the macular hemorrhage over the ensuing months. One year post vitrectomy, her vision was stable at 20/50 OD with complete resolution of the cystoid edema and the macular hemorrhage.

Figure 1

Figure 1: Optical coherence tomography, right eye. Inner retinal hemorrhage is highly reflective and large cystoid spaces are evident intraretinally with a central thickness of 700 microns.

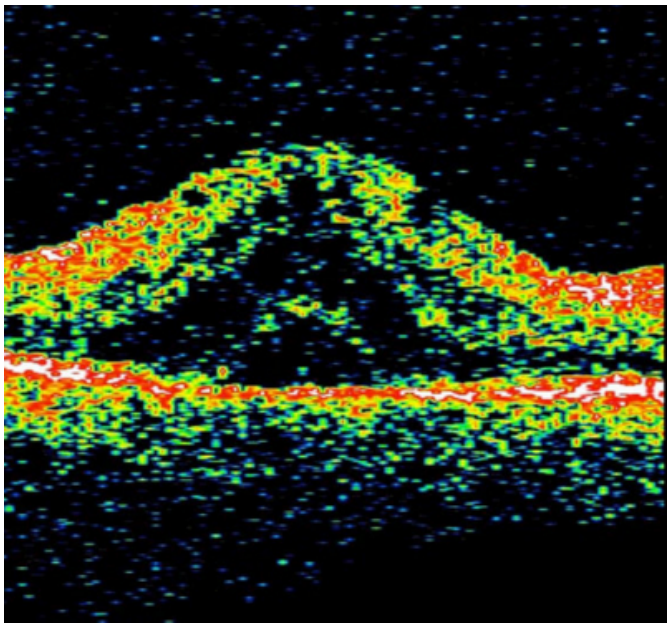

Figure 2

Figure 2: Fluorescein angiography, right eye. The recirculation phase of the angiogram demonstrates a classic petalloid appearance with blocked fluorescence secondary to intraretinal hemorrhages.

This case demonstrates that macular hemorrhage may occur remotely with cystoid macular edema following complicated cataract surgery, and may resolve following pars plana vitrectomy.

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