



Epiretinal membrane after branch retinal vein occlusion: Separation after dexamethasone implant injection

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ARTICLE INFO

Keywords:

Epiretinal membrane
Dexamethasone
Dexamethasone implant

ABSTRACT

Purpose: The authors report a case of epiretinal membrane after branch retinal vein occlusion with macular wrinkling that was successfully managed without surgical treatment.

Observations: A patient presented with complaints of a gradual decrease in vision, with metamorphopsia over the previous 2 years in the right eye. The patient was diagnosed with a grade 2 epiretinal membrane (ERM) with macular wrinkling in the right eye that was confirmed with optical coherence tomography (OCT) demonstrating significant macular thickening. The patient refused surgical intervention, and was managed with a dexamethasone implant to decrease macular edema. Six months later, the patient presented with resolution of macular edema, separation of the ERM from the retina as confirmed with OCT, and excellent visual recovery.

Conclusions and Importance: A dexamethasone implant injection can be an alternative treatment for ERM resulting in excellent visual recovery and possibly, separation of ERM.

1. Introduction

Idiopathic epiretinal membrane (ERM) is a cellular proliferation that forms along the surface of the internal limiting membrane of the retina and is usually associated to a posterior vitreous detachment (PVD). Two percent of patients over 50 years old and 20% older than 75 years have evidence of ERM.¹

The majority of patients are asymptomatic, and an ERM is discovered incidentally while others may present with macropsia, monocular diplopia, decreased visual acuity, and metamorphopsia.² For symptomatic patients, surgical intervention with pars plana vitrectomy (PPV) and membrane peeling remains the mainstay of treatment.

Dexamethasone is a potent corticosteroid with mainly glucocorticoid activity. It is an anti-inflammatory agent that is suited for treating conditions such as macular edema (ME) associated to several retinal vascular conditions. The dexamethasone implant ([DEX implant], Ozurdex; Allergan Pharmaceuticals, Irvine, CA) is a biodegradable intraocular device that is a complete drug delivery system for intravitreal injection directly through the pars plana. The implant contains 700 mg of dexamethasone that is slowly and consistently released over a period of 3–4 months.³

In this report we present a case of ERM separation after DEX implant

injection.

2. Case report

An eighty-six-year-old diabetic male, post-renal transplant and on immunosuppression with tacrolimus 1 mg, mycophenolate mofetil 750 mg and prednisone 5 mg daily, presented to the clinic with gradual decrease of vision in the right eye over the previous 2 years with a history of a branch retinal vein occlusion (BRVO). His visual acuity was 20/400 in the right eye, and 20/60 in the left eye. He was pseudophakic in the right eye with a posterior chamber multifocal intraocular lens, and a posterior subcapsular cataract in left eye. Fundus exam showed no diabetic retinopathy, no retinal breaks and the retina was attached bilaterally with a complete posterior vitreous detachment. The right eye had a very thick macular pucker (grade 2 ERM).⁴ Optical coherence tomography indicated an increase in central macular thickness (CMT) of 738 μm with a thick ERM (grade 2) and some cystic spaces (Fig. 1). The patient was offered surgery (PPV and membrane peeling) but refused due to his age, and his medical condition and opted for conservative treatment. Due to the significant macular thickening and edema we suggested a DEX implant injection. The patient underwent a thorough discussion of the risks and benefit of the procedure and signed an

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<https://doi.org/10.1016/j.ajoc.2021.101252>

Received 24 December 2020; Received in revised form 6 March 2021; Accepted 30 December 2021

Available online 1 January 2022

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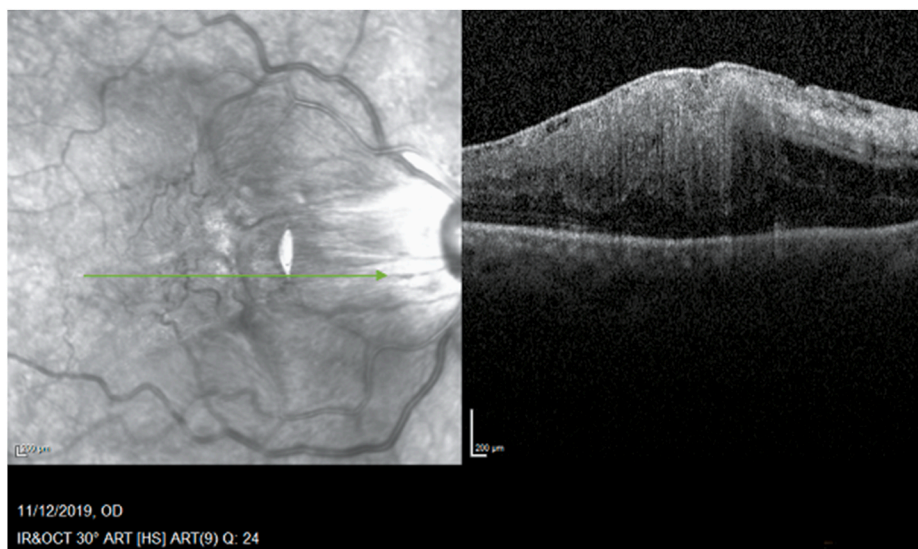


Fig. 1. Spectral-domain optical coherence tomography (OCT) demonstrates a grade 2 epiretinal membrane (ERM) with macular edema before intravitreal dexamethasone implant. OCT shows an increase in central macular thickness (CMT) of 738 μm and some cystic spaces. The macula is wrinkled as a consequence of the ERM. Visual acuity was 20/400. All cuts on the OCT were adherent to the macula at baseline.

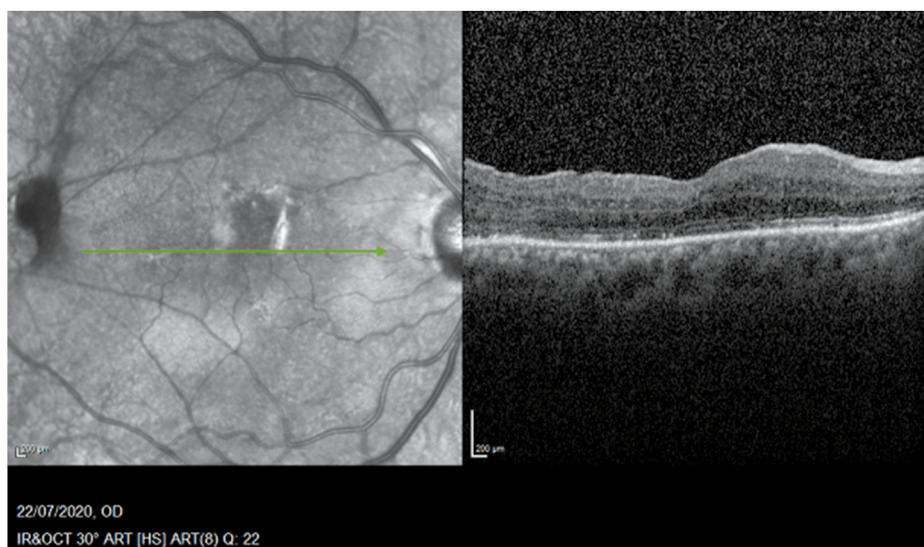


Fig. 2. Spectral-domain optical coherence tomography 6 months after a single intravitreal dexamethasone implant injection. The epiretinal membrane (ERM) has separated from the retina and macular edema has resolved, with improved vision in the right eye to 20/25, normal intraocular pressure, and a significant reduction in central macular thickness of 242 μm . All cuts on the OCT were separated from the macula and a remnant of ERM remained attached temporal to the fovea at the 6-month follow up visit.

informed consent for the DEX implant. The DEX implant was injected OD under topical anesthesia and sterile conditions. Six months later, the patient presented with improved vision in the right eye to 20/25, normal intraocular pressure and a separated ERM confirmed with OCT and a significant reduction in CMT of 242 μm . A remnant of ERM remained attached temporal to the fovea at the 6-month follow up visit (Fig. 2).

3. Discussion

In this case report we describe ERM separation after a single injection of a dexamethasone implant. The standard treatment for this type of ERM is a surgical approach with pars plana vitrectomy. Cystoid macular edema may present in about 20–40% of ERM patients.^{5–7} Very rarely the ERM may spontaneously separate in younger patients.^{8,9}

Recent advances such as internal limiting membrane peeling and the use of intraocular dyes including indocyanine green, trypan blue, and brilliant blue as ‘double staining’, may increase success rates and decrease recurrences.²

Steroids are used for the treatment of edematous and proliferative retinal diseases and down regulation of inflammatory stimuli. The abnormal proliferation of cells is often associated with and may be triggered by inflammation.¹⁰ In this case due to the patient’s reluctance to undergo a surgical procedure, a dexamethasone implant helped decrease macular thickening very rapidly. We hypothesize that the rapid resolution in macular edema lead to avulsion of the ERM from the macula. Possibly, the edema improved significantly because BRVO was the major cause of the edema, and treatment with steroids and the reduction in retinal thickness changed the vectors of tangential traction causing the ERM to detach. This profound response would be less likely to occur in a case of ERM without underlying retinal vein occlusion or diabetic macular edema for example.

4. Conclusions

Separation of a grade 2 ERM after a DEX implant injection can occur in some patients. Theoretically, rapid resolution of macular edema in the

advance stages of ERM formation may lead to avulsion of the ERM from the macula. We cannot rule out spontaneous separation of the ERM, however, this is a rare occurrence that is seen in younger patients.

Patient consent

The authors have no ethical conflicts to disclose. Informed consent was obtained from our patient, and the study has been approved by the institute's committee on human research.

Funding sources

None.

Authorship

Saeed T. Alshahrani, Salem T. Alshahrani and J Fernando Arevalo: Conceptualization and Methodology. Salem T. Alshahrani, Saeed T. Alshahrani and J Fernando Arevalo: Data collection, Writing - original draft preparation and reviewing and editing, final approval. All authors attest that they meet the current ICMJE criteria for Authorship.

Declaration of competing interest

None.

Acknowledgements

None.

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