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Management of Anterior Chamber Migration of Dexamethasone Intravitreal Implant

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Dear Editor,

Ozurdex (Allergan, Irvine, CA, USA) is a biodegradable, sustained-release intravitreal implant containing 0.7-mg dexamethasone. It is widely used for the treatment of macular edema following retinal vein occlusion, noninfectious posterior uveitis, and diabetic macular edema [1]. Recently, as the clinical indications for the device expanded, rare but serious complications such as desegmentation (fracture) of the implant, accidental injection of the implant into the crystalline lens, and migration of the implant into the anterior chamber have been reported [2]. In particular, migration of the implant into the anterior chamber may result in a potential vision-threatening corneal endothelial decompensation [3]. Herein, we report two cases of anterior chamber migration of the intravitreal dexamethasone implant and suggest proper management.

Case 1. A 64-year-old man was referred to the retina clinic for persistent macular edema despite two subtenon triamcinolone injections and four intravitreal bevacizumab injections. He had a history of macular edema after pars plana vitrectomy (PPV) and scleral fixation of the intraocular lens due to zonular dialysis during a cataract operation 3 years ago. For treatment of intractable macular edema, intravitreal Ozurdex injection was administered. After 8 days, he presented with sudden onset of decreased vision, and his best-corrected visual acuity (BCVA) was finger count 50 cm. Anterior segment examination showed that the implant was lying in the anterior chamber with severe corneal edema (Fig. 1A). To avoid corneal decompensation and maintain the therapeutic effect of Ozurdex, we tried to reposition the implant. After massaging the globe in the supine position; the implant was repositioned into the vitreous cavity successfully (Fig. 1B). Until the implant was absorbed, it remained located in the vitreous cavity without re-migration. Corneal edema was resolved, and BCVA was improved to 20 / 50 one month after repositioning (Fig. 1C).

Case 2. A 49-year-old man presented with persistent macular edema despite four subtenon triamcinolone injections and one intravitreal bevacizumab injection. He had undergone PPV and crystalline lens removal for treatment of an intraocular foreign body caused by a lawn mower injury and subsequent scleral fixation of intraocular lens 3 years ago. An Ozurdex injection was administered for refractory macular edema. After 4 days, he returned with sudden onset of decreased vision, and his BCVA was finger count 50 cm. Anterior segment examination revealed the implant was located in the anterior chamber with development of severe corneal edema (Fig. 1D). Ocular massage in the supine position was performed, and the implant was repositioned into the vitreous cavity successfully. However, the implant again migrated into the anterior chamber the next day. Repositioning through ocular massage in the supine position and re-migration of the implant were repeated two more times. Due to frequent re-migration and aggravated corneal edema, the implant was removed surgically. Using an ophthalmic viscosurgical device, the implant was removed with a microforceps through a corneal incision (Fig. 1E). There was no fragmentation of the implant during the procedure. Corneal edema improved and his vision improved to 20 / 60 4 months after removal of the implant (Fig. 1F).

Defective posterior lens capsule, zonular damage, and history of vitrectomy are associated with migration of dexamethasone intravitreal implants into the anterior chamber [4]. In this study, the patients had a history of PPV and weak zonules (case 1) or defective lens capsule (case 2). Migrated implants can be repositioned by non-surgical methods, such as ocular massage in the supine position, a slit-lamp procedure with a needle, or using a Nd:YAG (neodymium-doped yttrium aluminum garnet) laser [4]. However, there is a risk

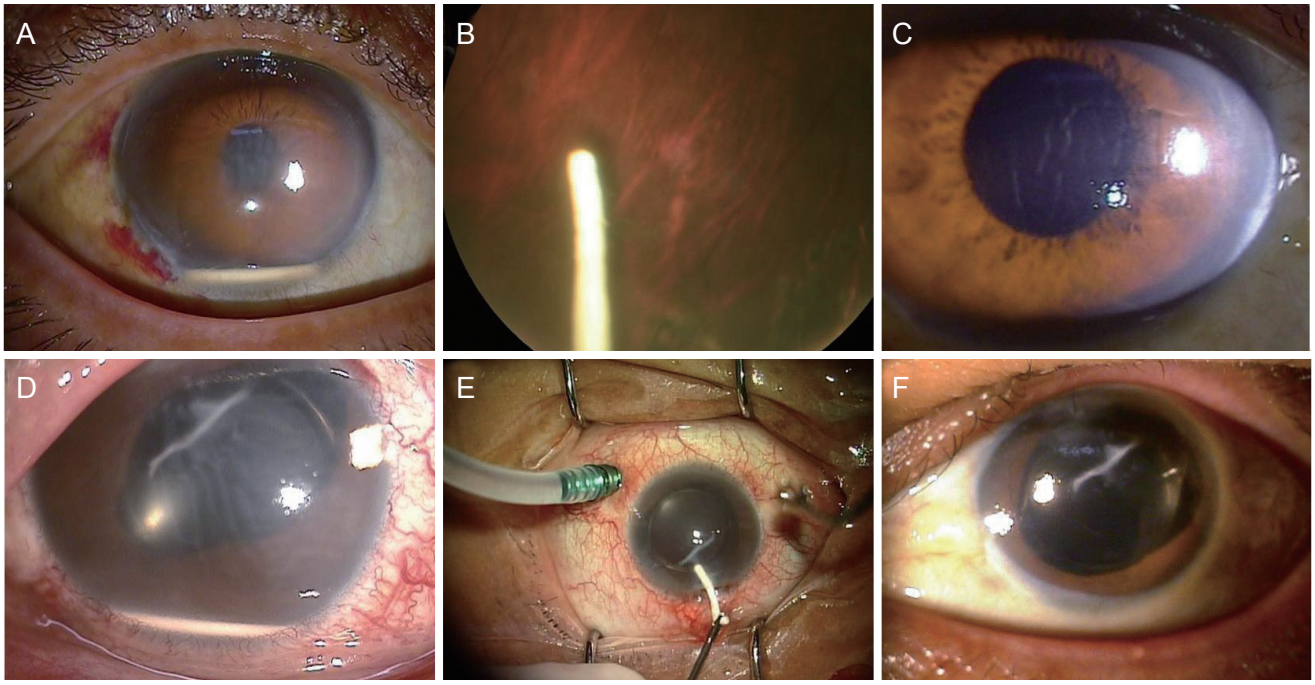

Fig. 1. Case 1. (A) Anterior segment photograph demonstrates migration of the intravitreal dexamethasone implant into the anterior chamber with mild corneal edema 8 days after injection. (B) Fundus photograph shows the implant in the vitreous cavity after repositioning through ocular massage in the supine position. (C) Anterior segment photograph demonstrates improved corneal edema 4 days after repositioning. Case 2. (D) Anterior segment photograph demonstrates migration of the intravitreal dexamethasone implant into the anterior chamber with severe corneal edema 4 days after injection. (E) In the operating field, the implant was removed from the anterior chamber with a microforceps. There was no fragmentation of the implant during the procedure. (F) Anterior segment photograph demonstrates improved corneal edema.

of re-migration of the implant. If the implant migrates into the anterior chamber with persistent corneal edema, it should be removed immediately to prevent corneal decompensation. The implant can be removed by gently grasping it with a forceps. However, there is a risk of fragmentation despite minimal manipulation. Aspiration with a vitreous cutter or a similar instrument may be necessary in such situations [4].

In conclusion, when a dexamethasone intravitreal implant migrates into the anterior chamber, simple repositioning by globe massage can be attempted before surgical removal. However, corneal edema and recurrent migration of the implant should be monitored closely. In cases of repositioning failure or migration recurrence, timely surgical removal is required for prevention of permanent corneal edema and visual loss.

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Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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