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## CASE REPORT

# A rare complication of intravitreal dexamethasone implantation: Intralenticular Ozurdex implantation

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### Abstract

Intravitreal dexamethasone (DEX) implant is a device that continuously releases DEX after injection into the vitreous. It is used for indications such as diabetic macular edema (DME), non-infectious posterior uveitis, and retinal vein occlusion. The most common complications include intraocular pressure elevation and cataract. We present the case of a 59-year-old female referred for cataract surgery 18 months after receiving a DEX implant for DME. Slit-lamp biomicroscopy revealed a Grade III nuclear cataract and an intralenticular DEX implant. The patient subsequently underwent phacoemulsification with intraocular lens (IOL) implantation. Hydrodissection was deliberately omitted, and excessive manipulations were avoided. The posterior capsule remained intact, and a three-piece IOL was implanted within the capsular bag without intraoperative complications. Conclusion: Intralenticular Ozurdex implantation is a rare but clinically relevant complication. Careful injection technique, patient cooperation, and meticulous surgical management are essential to prevent and successfully manage this event.

**Keywords:** Diabetes; implantation; intralenticular; Ozurdex.

The dexamethasone (DEX) intravitreal implant (Ozurdex<sup>®</sup>, Allergan Inc., Irvine, CA, USA) is a biodegradable device that slowly releases 0.7 mg DEX into the vitreous cavity over several months.<sup>[1-3]</sup> It is commonly used for diabetic macular edema (DME), macular edema secondary to non-infectious posterior uveitis, and retinal vein occlusion.<sup>[3]</sup>

Although generally safe and effective, several complications have been reported, including cataract progression, transient intraocular pressure (IOP) elevation, conjunctival hemorrhage, implant migration into the anterior chamber, and, rarely, inadvertent implantation into the crystalline lens.<sup>[4,5]</sup> Intralenticular placement represents a unique

scenario that may alter both the therapeutic efficacy of the implant and the progression of lens opacification.

Herein, we report a rare case of intralenticular DEX implant detected during cataract progression, and we discuss its surgical management and postoperative course.

### Case Report

A 59-year-old female was referred to our clinic for cataract surgery, having received an intravitreal DEX implant in the right eye at another center 18 months earlier due to DME.

At presentation, best-corrected visual acuity (BCVA) was 1.80 logMAR in the right eye and P+P– in the left eye. IOP

\* This case was presented as a poster at the 57<sup>th</sup> National Congress of the Turkish Ophthalmological Association. The 57<sup>th</sup> Turkish Ophthalmological Association (TOA) National Congress will be held in Antalya, Turkey on 8-12 November 2023.



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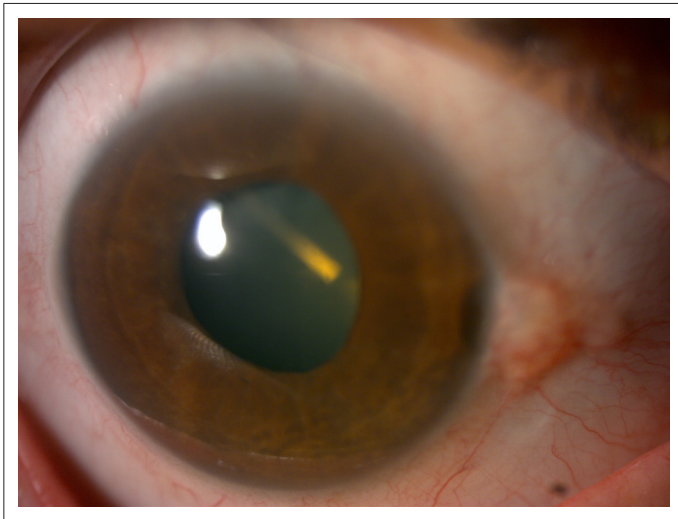


measured 15 mmHg in the right eye and 36 mmHg in the left eye. Biomicroscopic examination revealed a Grade III nuclear cataract and an intralenticular DEX implant in the right eye (Fig. 1), and a Grade II nuclear cataract with rubeosis iridis in the left eye. Fundus examination demonstrated bilateral peripheral panretinal photocoagulation (PRP) scars. Fundus fluorescein angiography showed diffuse leakage without significant neovascularization (Fig. 2). Optical coherence tomography (OCT) revealed retinal thickening and an epiretinal membrane in the right eye (Fig. 3).

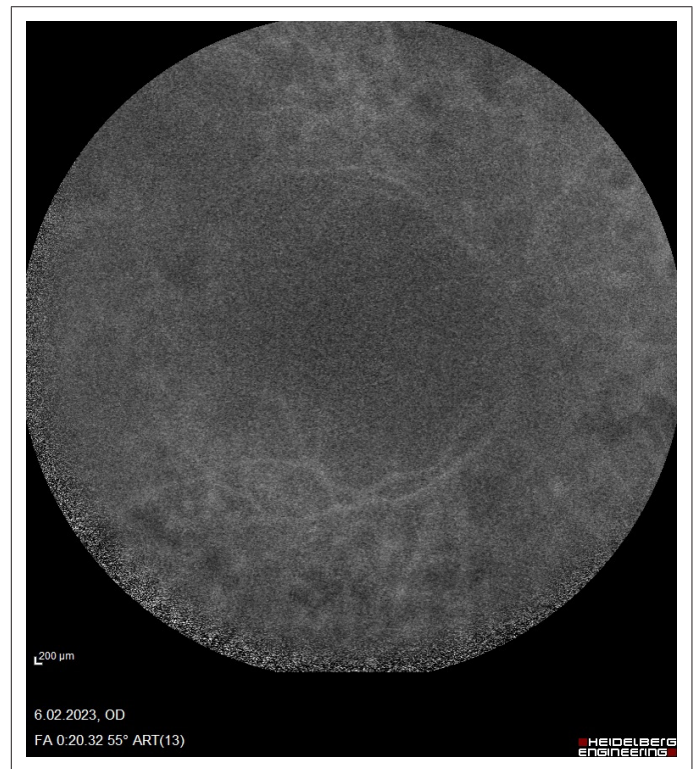
The patient first received an intravitreal bevacizumab injection in the right eye, followed by phacoemulsification and intraocular lens (IOL) implantation. Hydrodissection was deliberately omitted, and manipulations during phacoemulsification were minimized. The posterior

capsule was confirmed to be intact, and a three-piece IOL was implanted into the capsular bag. No intraoperative complications occurred.

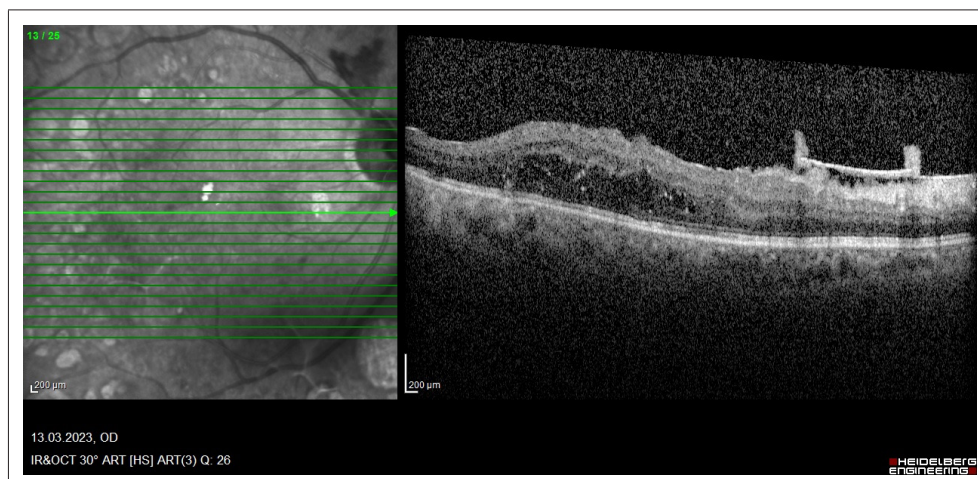
At 1 month postoperatively, BCVA improved to 0.7 logMAR. IOP was 21 mmHg under dual topical antiglaucomatous therapy. The IOL was well-centered, the cornea remained clear, and no anterior chamber reaction was observed. Fundus examination confirmed previous PRP. Macular OCT demonstrated persistent DME with a central retinal



**Fig. 1.** Anterior segment photograph of the right eye showing intralenticular Ozurdex implantation,  $\times 16$  magnification.



**Fig. 2.** Fundus fluorescein angiography of the right eye showing diffuse leakage without clear neovascularization.



**Fig. 3.** Macular optical coherence tomography image of the right eye showing retinal thickening and an epiretinal membrane.

thickness of 470  $\mu\text{m}$ , and three consecutive intravitreal bevacizumab injections were planned. Cyclocryotherapy was scheduled for the left eye due to neovascular glaucoma; however, the patient did not continue follow-up.

## Discussion

Accidental intralenticular placement of a DEX implant is an uncommon but clinically important complication. Several factors may contribute, including inadequate injector control, poor visualization, or sudden patient movement during the injection.<sup>[6]</sup>

While intravitreal DEX is designed to release corticosteroid directly into the vitreous cavity, lenticular entrapment may alter its pharmacokinetics. Some reports suggest that such implants can remain stable and still exert therapeutic activity for several months, leading to partial or even prolonged suppression of macular edema.<sup>[7-9]</sup> However, this comes at the cost of accelerated cataract progression, often necessitating surgical removal.<sup>[7,10]</sup>

Cataract surgery in the presence of an intralenticular implant poses unique challenges. Hydrodissection is generally avoided to prevent posterior capsule rupture and implant migration.<sup>[7,10]</sup> In our case, careful phacoemulsification and capsular bag implantation of a three-piece IOL were performed successfully without complications.<sup>[6]</sup>

This case reinforces the importance of surgical expertise and careful intraoperative planning. Preventive measures are equally critical: adequate patient counseling, proper anesthesia, and stabilization of the globe during injection may reduce the likelihood of this complication.<sup>[5]</sup> From a management perspective, conservative observation may be acceptable if the implant does not compromise vision; however, cataract extraction is indicated when there is visual axis involvement or significant lens opacification.<sup>[8,9]</sup>

## Conclusion

Intralenticular Ozurdex implantation is a rare but significant complication of intravitreal therapy. Although such implants may retain some therapeutic effect, cataract progression and visual axis compromise typically require surgical intervention. Careful intraoperative management, particularly omission of hydrodissection and minimization of lens stress, can ensure safe cataract extraction with preservation of capsular integrity. This case underscores the importance of preventive strategies, surgeon training, and patient cooperation to minimize the risk of such complications.

**Ethics Committee Approval:** This is a single case report, and therefore ethics committee approval was not required in accordance with institutional policies.

**Informed Consent:** Written informed consents were obtained from patient and his family.

**Peer-review:** Externally peer-reviewed.

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**Conflict of Interest:** None declared.

**Use of AI for Writing Assistance:** Not declared.

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