

Tips for Injecting the Dexamethasone Intravitreal Implant

A step-by-step guide.

BY SUNIL GUPTA, MD

The US Food and Drug Administration recently approved the extended-release dexamethasone intravitreal implant 0.7 mg (Ozurdex; Allergan, Inc., Irvine, CA) for treatment of macular edema due to branch retinal vein occlusion (BRVO) or central retinal vein occlusion (CRVO).

In the clinical studies, 20% to 30% of patients with from this severe retinal condition experienced a three-line improvement in best-corrected visual acuity with an onset of effect within the first 2 months following therapy.¹ The safety profile of this implant is favorable based on the clinical data. Study results using Ozurdex for treatment of diabetic retinopathy and macular degeneration will be released later this year.

Although injecting the Ozurdex implant is a more complicated procedure than typical small-gauge intravitreal injections, it is in the realm of retina specialists who routinely create sclerotomies for sutureless vitrectomies. The procedure is performed in the clinic setting using sterile technique.

PREINJECTION PROCEDURES

Preoperative antibiotics. Ideally, the patient should be pretreated with topical antibiotics for 3 days.

Dilate the patient. Once the patient has been selected to receive the Ozurdex implant, the patient should be dilated.

Administer anesthetic. Once the patient has signed the consent forms, he or she is given one to two drops of topical anesthesia. Two drops of 5% povidone-iodine are placed on the conjunctiva, and the patient is asked to close his or her eyes. The sterile field is then prepared.

Set up the sterile field. Open the sterile field by placing a sterile towel over a Mayo stand or a counter. Using sterile technique, open calipers, lid speculum, toothed

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forceps, drape scissors, sterile drape, cotton applicators, sterile sponge applicators, and lastly, the sterile syringes and needles. Open the DDS sterile applicator box.

Prep the patient. Give an additional drop of topical anesthetic and an additional drop of 5% povidone-iodine. Prep the eyelid with the povidone-iodine. Using a cotton-tipped applicator, swab the lid margins and the lid three times with 5% povidone-iodine solution.

Inspect the injector. Inspecting and preparing the applicator prior to injecting the dexamethasone implant is crucial. The physician must make sure the entire implant is present within the injector. Place an indirect ophthalmoscope on your head—preferably one with a small pupil setting. Put on the sterile gloves and have an assistant peel the applicator pack and pass the delivery device to the surgeon. Gently remove the cap, visualizing the inside to ensure there are no fragments of the injectable implant. Tilt the injector toward you and visualize down the “barrel” of the injector. Make sure that you can see the whitish implant, which typically abuts the shiny inside edges of the barrel of the injector. If necessary, have an assistant shine a Fenhoff transilluminator down the barrel, making certain to maintain sterile technique. After confirming the presence of the implant, gently lay the injector on the sterile field.

PREPARING THE FIELD

Utilizing the self-adhesive sterile drape, ask the patient

to open the eye and gently lay the folded drape on the corneal and conjunctival surface (Photo 1).

Upon opening, there should be adequate retraction of the lids (Photo 2).



Using the sterile drape scissors, create an opening within the fissure (Photo 3).



Retract the lids and drape the lashes by utilizing the sterile lid speculum (Photo 4). Utilizing a 30-gauge needle on a TB syringe with injectable anesthetic, create a small bleb in the inferotemporal quadrant using 0.02 to 0.05 cc of 1% preservative-free lidocaine (Photo 5). Allow the lidocaine to sit for a few minutes.



PERFORMING THE PROCEDURE

After a few minutes, test the sensitivity of the conjunctiva and underlying sclera using either the toothed forceps or the cotton swab. If the patient is tolerant of pressure without significant pain, you are ready to inject. If the cap has not already been removed, remove the cap from the injector and gently remove the safety pin perpendicular to the insertion without twisting it (Photo 6).

Make sure the field is well lit. Using either toothed forceps or a cotton-tipped swab, stabilize the globe. The maneuver is similar to creating a sclerotomy for a suture-



less vitrectomy. Mark the sclera using the calipers 4 mm for phakic and 3.5 mm for pseudophakic eyes. After stabilizing the globe, place the applicator bevel up and gently push the injector through the conjunctiva and partial thickness sclera, parallel to the limbus. Keep the pressure on the bevel constant, and the needle will gradually dissect its way through the sclera in a controlled manner.

Once the applicator bevel has almost completely been buried, turn the tip perpendicular to the globe and complete inserting the cannula up to the silicone sleeve (Photo 7). Point the tip of the injector toward the posterior pole.



Gently press the injector button until it is completely flush (Photo 8). The speed of the injection determines the speed of ejection of the implant. Therefore, the injector button should be pressed slowly, but completely. After compressing the button, gently retract the applicator needle following the same track as the injection pathway. Utilizing a sterile cotton applicator, block the sclerotomy site with gentle pressure in order to prevent reflux. Visualize the injection site to make certain no implant fragments are present.

If a significant wound leak is present, a 9-0 Vicryl suture can be placed for closure. In a post-vitrectomized eye, the patient is more likely to see the implant float onto the posterior pole. They also have a greater risk of wound leakage.



POST-PROCEDURE INSPECTION

Using the indirect ophthalmoscope without indentation, confirm that the implant is in the vitreous cavity (Photo 9). Also, check for signs of nonperfusion of the central retinal artery, vitreous hemorrhage, or retinal tears. After inspection, gently remove the speculum and drape (Photo 10).



DISCHARGE THE PATIENT

Place a drop of antibiotic in the patient's conjunctival fornix. At 5 minutes, check the patient's intraocular pressure and check the wound once again for a leak.

Upon discharge, the patient should be placed on a postoperative antibiotic regimen. It is also important to explain to patients that they may see the implant, especially when supine.

The patient should return between 2 and 7 days following injection to check for retinal tears, vitreous hemorrhage, or endophthalmitis. ■

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1. Ozurdex [package insert]. Irvine, CA; Allergan, Inc.; 2009.