

## Abstract 184

### AN EASY WAY TO PREVENT VELOCITY-RELATED COMPLICATIONS DURING DEXAMETHASONE IMPLANT INJECTION IN VITRECTOMIZED EYES

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#### Introduction:

Complications related to pellet velocity may be observed with dexamethasone implant injection, especially in vitrectomized eyes. This report assesses the impact of inserting an ophthalmic viscoelastic device (OVD) into the dexamethasone (DEX) implant needle on pellet velocity in simulated vitrectomized eyes.

#### Materials and methods:

DEX implants were injected into a calibrated ex vivo test chamber filled with balanced salt solution (BSS). All DEX implants were administered by the same physician and aiming for the same button depression time. In Group 1, three DEX implant injections were performed without an OVD, while in Group 2, the OVD was safely inserted into the DEX implant needle using a 27-gauge cannula just prior to injection. The slow-motion video mode of the iPhone 14 was utilized to record the procedures and calculate time and distance measurements.

#### Results:

Group 1 exhibited a mean velocity of 450 mm/sec for the DEX pellet in BSS, compared to 54.57 mm/sec in Group 2. Furthermore, DEX pellets in Group 1 had horizontal displacements of 24, 29, and 31 mm, while those in Group 2 had displacements of 17, 16, and 15 mm.

#### Conclusions:

The OVD inserted into the implant needle prior to DEX implant injection reduces pellet velocity by 87.87% and may prevent potential velocity-related retinal complications. This technique can be safely used in all vitrectomized eyes, particularly in those that have undergone vitrectomy combined with intraoperative DEX implant injection. However, ex vivo and in vivo studies with larger numbers of cases are needed to better determine the efficacy and safety of this modified technique.