Modern day cataract surgery with the use of a transzonular intravitreal injection of antibiotics and steroid

Author: Kriti Bhagat, OD
Co-Author: James S. Lewis, MD

Abstract
This case reviews the use of a transzonular antibiotic/steroid injection, replacing postoperative medications in a cataract surgery. This method helps eliminate non-compliance, decreases the cost of postoperative medications, and holds the potential to decrease postoperative complications.

Case History
• 71 year old, Hispanic, Male
• Chief Complaint: blur OD more than OS, increasing in the past few months, worse with headlights from oncoming traffic at night and driving in the rain, his glasses help slightly but doesn’t eliminate the blur
• Past Ocular History: unremarkable
• Past Medical History: Diabetes type 2, hypertension, and cholesterol
• Medications: Lisinopril, Simvastatin, Omeprazole, Vitamins, and Ginkgo Biloba
• No known drug allergies

Pertinent Findings
• VA: OD - 20/80 and OS: 20/30+ (uncorrected)
• BCVA: Manifest at initial visit
  • OD: -1.50 -1.00 x170 VA: 20/70
  • OS: plano -2.00x010 VA: 20/30+
• Pupils: PERRL (-) APD
• EOM: full motility and smooth movement
• Confrontation visual field: Full to finger count in both eyes
• SLE:
  • OD: cornea: clear; conjunctiva: white and quiet; iris: flat, round; A/C: D&Q; lens: nuclear sclerosis grade 2, cortical changes grade 2 and posterior subcapsular changes grade 1; ONH: Perfuse, healthy, flat, and distinct borders; macula: flat, healthy (no diabetic changes); periphery: intact
• OS: cornea: clear; conjunctiva: white and quiet; iris: flat, round; A/C: D&Q; lens: nuclear sclerosis grade 1, cortical changes grade 1; ONH: Perfuse, healthy, flat, and distinct borders; macula: flat, healthy (no diabetic changes); periphery: intact

**Differential Diagnoses**

- Age-Related Cataracts/Diabetic Cataracts
- Dry Eyes (ruled out due to (-) staining with flouresceine instillation)
- Refractive Error (mild improvement with a refraction but does not resolve blur)

**Diagnosis and Discussion**

- Description of cataracts
  - Describe nuclear sclerosis, cortical cataracts, and posterior subcapsular cataracts
  - Phacoemulsification extraction: traditional vs. with intravitreal injection (not in details)
    - describe how a traditional cataract surgery is done - incisions, viscoelastic, phacoemulsification, removal on lens, aspiration/irrigation.
- Postoperative complications that occur with traditional cataract surgery
  - endophthalmitis
  - increased intraocular pressures
  - CME
  - tilted lens
  - PVD
  - secondary iridocyclitis
  - corneal edema
  - hyphema
  - posterior capsule opacity
  - retinal detachment

**Treatment and Management**

- Describe TriMoxi+Vancomycin - formulation of triamcinolone acetonide, moxifloxacin hydrochloride, and vancomycin
- Advantages of dropless cataract surgery
  - Save time in office, reviewing drop schedule and sending drug prescriptions
  - Less confusion for patient
  - Cost effective - Prolensa, Durezol costs
  - No assistance for elderly population
  - Non-compliance
  - Less risk of complications due to not taking eye drops postoperative
- Disadvantages
  - Steroid responders
• Trimox reactions - on cornea, anterior chamber, and vitreous
• rate of CME
• Further research needed
• CME rates
• infection rates
• posterior capsule opacification timing

Conclusion

• Is this the future of modern day cataract surgeries?
• It’s important to know that these surgeries will become more common, and it’s our job as pre and postoperative care providers to know what to expect.

References