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JCAHPO Regional Meetings
2017
Technique for Intravitreal Injection

- Topical anesthesia
- Sterile prep
- Eyelid speculum
- Intravitreal injection
- Check vision
- +/- Anterior chamber paracentesis if NLP

Pre-injection clearance

Make sure patient has no active eye infection

Glaucoma:
- Should be managed before injection
- Not a contraindication to injection
- Monitor IOP 5 minutes after injection in selected high risk patients
- AC tap very rarely necessary

Other considerations
- Filtering bleb: Avoid injecting in that area
- Recent post-cataract surgery patients: use physician discretion
- Anti-coagulation: No need to stop

Povidone-iodine allergy
- Majority of allergies are due to iodine, not povidone-iodine
- Extremely rare
- Do a skin patch test

3 types of reactions:
- Irritation
  - Proportional to the duration of exposure
- Contact dermatitis
  - After repeated exposure; resolves spontaneously
- Anaphylaxis:
  - 10 cases reported; including mucous membranes
  - None related to ophthalmic use

Seafood allergy:
- Not related to iodine content
• Mediated by IgE against specific protein allergens, commonly tropomyosin in crustaceans and molluscs and parvalbumins in fish.

**Allergy to iodinated contrast**
• The structure of povidone, with or without iodine, is different to that of iodine
• Direct cross-reactivity has not been demonstrated

**Bilateral injections**
• Treat as 2 separate procedures:
  o Individual speculums, prep, syringes, needles and unit doses
• Try to use medications from separate lots, or different medications if possible

**Peri-Injection Management**

**Examination:**
• Dilation for procedure is optional
• Eye examination day of injection is not needed preop
• Post-op hand motions can be assessed; IOP can be measured

**Prophylactic topical antibiotics:**
• Use of prophylactic antibiotics may promote resistance

**Minimize contamination by patient and physician**
• Proceduralist flora:
  o Oropharyngeal flora
    • Pathogens: Streptococcus sp.
  o Skin flora
    • Pathogens: Staphylococcus epidermidis, other
• Minimize talking
• Consider a mask

**Draping**
• Adds discomfort
• Increases cost
• No evidence that it reduces endophthalmitis
• Discouraged, but optional

**Gloves**
• Sterile or not - Not required
• Nor required for vaccines or injections by OHSA or CDC
• Patients expect it, however
• Appropriate universal precautions

**Handwashing**
• Essential before and after every patient

**Lid scrubs:**
• **Not** recommended as excessive lid manipulation may release bacteria from lids
US Practice Patterns Survey
- 765 AAO members under “Retinal/Vitreous Surgery”
  - 58% wear gloves
    - Of glove-wearers, 58% use sterile gloves
  - 92% use lid speculum
  - 12% use a sterile drape
  - 17% displace the conjunctiva

Povidone-iodine x 30 Seconds Most Effective for Intravitreal Injection
- Prospective randomized study evaluation conjunctival bacterial flora in patients undergoing intravitreal injection
  - N = 131
  - “Use of 5% PI caused significant decrease in the number of colony-forming units (P < 0.0001). Exposure to PI for 15 seconds did not cause a significant reduction in conjunctival bacteria (P = 0.08), but a significant reduction was observed after 30 seconds of exposure and beyond (P = 0.0003).”


Eyelid speculum
- Mechanism to avoid needle contact with lids and lashes needed:
  - Eyelid speculum
  - Q-tips
  - Holding lower lid down with a finger

Topical Anesthesia
- Start with Proparacaine 0.5% eye drops

Then may add
- Tetracaine drops
  - OR
- Subconjunctival lidocaine 1-2%
  - OR
- Topical lidocaine gel
  - OR
- Lidocaine 4% swabs held onto conjunctiva for 2 minutes
Sterile prep
- Prep lids and lashes with 10% povidone-iodine
- Place 1 drop of 5% povidone iodine on conjunctiva

Eyelid Speculum
Not mandated but you need to mechanically open the eyelids

Intravitreal injection
- Measure 3mm (phakic) or 4 mm (not phakic) from limbus
- Inject slowly with 32 G or 30 G needle
- Place cotton tip on entry site after needle removed

Choice of needle
- Filter needle to draw up drug
- 30 g needle or smaller

Intravitreal Injection

Anterior Chamber Paracentesis
Not routinely needed or recommended
- Check vision immediately after intravitreal injection (hand motions or not)
- If no light perception:
  - Remove fluid from AC with 30 G needle to relieve high eye pressure

Antibiotic eye drops
- No evidence that their use, either before or after injection, reduces the risk of endophthalmitis
- No longer used at Mayo

Post-op
- Patch not necessary
- Ointment is optional
- Some patients prefer ointment and patch to minimize discomfort

Follow-up
- Post-op monitoring or phone call not necessary
- Follow-up at next injection appointment

2004-2014: What’s changed?
- Dilation
- Mask
- Gloves
- Drape
- Antibiotics
**Intravitreal steroid implants:**
Preparation as for injections.
Add subconjunctival lidocaine 2% in area of injection; wait 5 minutes for it to take effect.

**Dexamethasone implant (Ozurdex)**
Releases dexamethasone into vitreous cavity over 3-4 months
Biodegradable
FDA-Approved for diabetic macular edema, uveitis, retinal vein occlusion
http://www.ozurdex.com/What-To-Expect
For administration video:
http://www.ozurdexprecisionprogram.com/

**Fluocinolone implant (Iluvien)**
Releases fluocinolone into vitreous for 3 years
Approved for diabetic macular edema
Not biodegradable; implant stays in eye after drug dissolved; may add more implants.
For administration video and practice resources:
http://iluvien.com/hcp/practice-resources/

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