Vitreo-Retinal Surgery in Uveitis Patients

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Before we start ask yourself

- Why in my right mind would I operate on uveitis patients?
  - Tend to be difficult cases
  - Tend to be long cases
  - Tend to be on difficult personalities
  - Tend to be on poorly insured patients
  - Tend to have poor outcomes
  - "Recipe for success"

Vitreo-retinal Surgery in the Uveitis Patient

- Diagnostic
  - Vitreous biopsy
  - Subretinal Biopsy

- Therapeutic
  - Drug Delivery Implant
  - Vitrectomy for Opacity, Intermediate Uveitis

- Management of Complications
  - Retinal Detachment
  - Hypotony
**Diagnostic Procedures**

- **Tips**
  - Prior to procedure – know who is receiving the sample
  - Recognize you have limited sample – choose your test wisely
  - Be prepared for the unexpected...

- **When to perform**
  - When the clinical situation does not respond as expected
  - There is tissue to biopsy
  - Malignancy and/or infection is of concern

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**Case Presentation #1**

- 49-year-old male with decreased vision in both eyes (OD>OS) for 1-2 months with increased floaters in both eyes
- Denies photophobia, red eye, pain
- Diagnosed with idiopathic intermediate uveitis in both eyes 2 years ago
- Continued inflammation in both eyes

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**Case Presentation #1 (Cont’d)**

- VAcc: 20/70 OD, 20/40 OS
- SLE: PCIOL, OD; otherwise WNL
- Anterior vitreous: 2+ cell OD, 1+ cell OS

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**Fundus Photos**

- 7/2007
- 2+ Vitreous Haze
  - C/D=0.3
  - M/V/P=WNL

- Trace Vitreous Haze
  - C/D=0.3
  - M/V/P=WNL
Case Presentation #1 (Cont’d)

- **Plan**
  - PO Prednisone 50 mg × 2 weeks, then 40 mg × 2 weeks
  - Re-check ACE, CXR, RPR
- Over next several months received multiple periocular injections of triamcinolone
- No improvement in disease

What to do next?

- On prednisone
  - Expect control of disease – not occurring
  - Expect improvement – not occurring
  - Tissue to biopsy? – Yes, vitreous
- What to send for?
  - Cytology
- How to do it…

Vitreous Biopsy

- Undiluted specimen
  - Important for cytology, pathology, PCR
  - If going to cytology – need to get it to the lab quickly
  - May need to place medium into sample
- Diluted specimen
  - Important for cytology, cell block, flow cytometry
  - Can be used for PCR, microbiology
**Ok now to the procedure**

- Not yet
- Call your lab/pathologist before you are in the eye
- Know how you are going to transport the specimen
- Ensure the orders are done so the specimen can travel
- Decide if it is going during the case or after.
- Know where the lab is.

**Sometimes you have to draw a map for the fellow**

**Now the biopsy**

- Material
  - 3 ml syringe
  - 10 ml syringe
  - Stopcock
  - Transport media (if needed)

**Video**
Be Aware of this Potential

The tools we have

- Use the tools in our retina toolbox when needed
  - Diagnostic Vitrectomy
  - Anterior Chamber Paracentesis
  - Retinal Biopsy
- Especially when concerned about infectious, masquerades
- Lots of literature to support its utility
- BUT – make sure you have a good pathologist/lab

Case Presentation

- 75 year old female
- Chronic posterior uveitis OU x 1 year
- Suspicious for lymphoma
- Vitreous biopsy negative in right eye
- Presents for biopsy in the left eye

Case Presentation #1 (Cont’d)
Biopsy performed – atypical, 4 months later

Subretinal biopsy

- Tools
  - Green tip soft tip cannula
  - 3 ml syringe
  - Tubing
  - Transport Media
- Also can perform with 25 gauge vitrectomy only
**Technique One**

![Image](image1)

![Image](image2)

**Technique two**

![Image](image3)

![Image](image4)
Technique three

Therapeutic Vitreo-Retinal Surgery

- Drug Delivery Implants
  - Vitrasert
  - Retisert
- Replacement of Implants
- Pars Plana Vitrectomy for Intermediate Uveitis

Fluocinonole Acetonide intravitreal implant

- Fluocinolone Acetonide
- 0.59 mg total
- Release rate initially 0.6 μg/day, then 0.3 - 0.4 μg/day
- Lasts approximately 2.5-3 years

Retisert
**Retisert Tips**

- Double arm 8-0 prolene suture – tie off implant prior to implantation
- Check site for implantation
- Good hemostasis
- In previously vitrectomized eyes, place infusion line
- 3.5 mm sclerotomy
- Vitrectomy over sclerotomy
- Most important suture is initial anchoring suture
- Use as many 9-0 prolenes as needed to close

**What about long-term?**

- Average time to recurrence around 3 years
- What happens at 3 years?
- Average time to reimplantation – 45-46 months from original implant
- Re-implantation at original site (or new site)
- Visual acuity post second implantation generally stable or improved
- Few complications

**Retisert tips**

- Exchange
  - Infusion line
  - If implant has been eye for greater than 4 years prepare for implant disassociation
  - 25 gauge vitrectomy
  - Create a larger wound and open it wide
  - If pellet separates, treat as IOFB, grab with soft tip or forceps
  - Consider different site if scleral is thin

**Exchange take 2**

- Average time to recurrence around 3 years
- What happens at 3 years?
- Average time to reimplantation – 45-46 months from original implant
- Re-implantation at original site (or new site)
- Visual acuity post second implantation generally stable or improved
- Few complications
Pars plana vitrectomy for intermediate uveitis

- Multiple series of possible benefit
  - Reduction in inflammation
  - Improvement in vision
  - Theoretically removal of inflammatory mediators
  - Treatment of peripheral ischemic pathology
- But....
- Some with intermediate uveitis will have recurrence
- Once you remove the vitreous – lose the vitreous depot
Management of Complications

- Retinal Detachment
  - Viral Retinitis
  - Endophthalmitis
  - Infectious Retinitis/Choroiditis

- Hypotony
  - Chronic Uveitis
  - Poor Visual Outcomes

Retinal Detachment in Uveitis

- 3-7% of patients with uveitis develop RD
- Infectious Retinitis more likely to develop RD
- Rates are high in ARN patients, patients with CMV Retinitis with large areas of retinitis
- Visual outcomes poor
- 10% NLP

Why so poor?

- Co-morbidities
- Difficult surgery
- Younger patients – attached hyaloid
- Large areas of necrosis
- Posterior involvement
- Inflammation plus blood = PVR soup

Tips/Tricks

- Scleral Buckle when extensive peripheral pathology
- Check for persistent pre-retinal membranes
- Retinitis = fibrosis at level of retina/preretinal/subretinal
- Choroiditis = fibrosis at level of choroid and anterior
- Retinectomy when needed
- Oil
- Treat inflammation/infection
Case Presentation

- 13 year old female with 3 month history of vision loss in both eyes
- Vision poor OS x 3 months, OD just went out
- Dx with panuveitis and exudative RD possible VKH
- On 60 mg prednisone – no improvement
- Work-up negative

External: Normal

Ant Seg: Normal epithelium, stroma, endothelium, and tear film. Anterior Chamber Deep + trace cells +1 flare, Clear lens

DFE: see photo
What you can’t see

- Peripheral pigmentary changes 360 with retinal thinning, holes and atrophy
- Imp: RRD? Possible infectious
- Plan
- Diagnostic PPV, SB/PPV/repair RD
Case Presentation

- 52 year old female
- Metastatic Colon Cancer
- Chemotherapy
- On chronic steroids
- New sudden vision loss OU
- VA 20/60 OU
**Treatment**

- ARN/PORN
- Treatment?
- Laser?
  - Foscarnet 2 mg OU x 3
  - Valtrex 1 gram TID

3 days

[Images of eyes showing retinal changes before and after treatment]
**Case presentation**

- Calls with new vision loss
- Bilateral RD
- LP OU

**Surgical technique**

**Retinal Detachment in Uveitis**

- **Tips**
  - Identify hyaloid (triamcinolone, stain)
  - Check and check and check again (forceps, DDMS, lighted pick)
  - Release fibrosis and traction
  - Identify location of traction (subretinal/preretinal)
  - Retinectomy when needed
  - Oil
  - Treat inflammation
Other surgery

- Hypotony management
  - PPV with dissection of anterior membranes with silicon oil placement
  - Use of UBM to identify pathology

Summary

- Tips to remember
  - Diagnostic
    - Know what you want, where to send it to
    - Be prepared for unexpected
  - Therapeutic
    - Retisert implantation can provide control for many patients
    - RD repair requires careful identification of membranes
    - Control inflammation/infection