NEW Technology Showcase: West Coast Challenge
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Introduction: Discuss New Technology and impact on profession. Highlight the Challenge

CASE 1 SF

1. Horse shoe tear
    a. 3-7% of adult population
    b. Typically asymptomatic
        i. 30-50% of Symptomatic HST progress to detachment if untreated
        ii. 5% of asymptomatic will progress
    c. Treatment
        i. Prompt treatments reduces risk of RD to <5%
        ii. Laser to seal of tear
        iii. Topical anesthesia only typically needed
        iv. Safe within 24 hrs
            1. Few complications
        v. Recommended Follow up after treatment
            1. 1-2 weeks
            2. 4-6 weeks
            3. 3-6 mos
            4. Annually
    d. 5-14% of pts with initial break will develop additional breaks in future, so must be monitored closely

CASE 2 NL

1) 23 year old female presents to emergency room with red painful swollen eyelid
    a) Present for 3 days
    b) No pain on eye movements
    c) VA = 20/30
    d) (-) proptosis, EOM restrictions, APD, fever, pain on eye movements
    e) Differential diagnosis:
        i) Orbital Cellulitis
        ii) Preseptal Cellulitis

iii) Eyelid abscess

iv) Dacryoadenitis

v) Dacrycystitis

f) Diagnosic tests:

i) CT scan

ii) Temperature reading

iii) Clinical exam

iv) Case history

v) Etiology

vi) Clinical Manifestations

g) Treatment Options

(1) Oral Ab's

(2) IV antibiotics

(3) Drainage of Abscess

h) Take home points

i) Degree of swelling does not indicate orbital vs preseptal cellulitis

ii) Oral antibiotic options

iii) Imaging is key in some cases

CASE 3 MD

1 **Jeff: mid-50's Attorney, High Myopia**
Hx of RD Repair in both eyes: RE: 1985 LE 1989

- Never recovers vision in the RE
- He is followed through the 90's with a progressive NS and declining Va ~ 20/70

- 1 eyed patient and reluctant to have CE
- Eventually has CE/IOL 90's-early 2000's and does well
  - VA 20/25 low refractive error

2 **Myopic Macular Schisis**

- Also known as myopic foveoschisis, myopic traction maculopathy (MTM) or myopic macular schisis
- Seen in 8-34% of highly myopic eyes with posterior staphyloma
- Results from perifoveal and tangential traction on the macula
- Factors that may contribute:
  - Rigidity of ILM that induces traction from the vitreous
  - Stiff retinal vasculature

3 **Myopic Macular Schisis**

- Progression in up to 30-43% of eyes
  - Up to 50% progress to macular hole formation or macular detachment within 2 years
- Often necessitates PPV with membrane peel
- Indications for surgery
  - Macular hole or retinal detachment
  - VA worse than 20/50
-
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4 **MTM Staging**

- Stage 1: inner/outer maculoschisis
- Stage 2: predominantly outer maculoschisis
- Stage 3: maculoschisis/macular detachment
- Stage 4: macular detachment

5

Arising from the Vitreomacular Interface (VMI):
One Finding: 5 Diseases

- Vitreomacular traction (VMT)
- Full Thickness macular hole (FTMH)
- Lamellar macular hole
- Epiretinal membrane (ERM)
- Myopic macular schisis

Case 4 JR

1. Silicone oil remains the primary choice for intraocular tamponade in complicated retinal detachment surgery cases.
2. Despite the efficacy of this treatment, complications may occur, including emulsification of the silicone oil in the anterior chamber.
3. After retinal detachment surgery, the recurrence of a peripheral retinal detachment or development of proliferative vitreoretinopathy places an eye at risk for ocular neovascularization involving the iris and intraocular lens.

Case Report: An 81-year-old,
pseudophakic female presented with a chief complaint of poor vision in her right eye that started after retinal reattachment surgery, which was complicated by proliferative vitreoretinopathy. The repair was performed with pars plana vitrectomy (PPV) with silicone oil. The silicone oil migrated into the anterior chamber via a compromised posterior capsular implant. She subsequently developed iris and intralenticular neovascularization

Case 5 JS

- 23 year old female
    - -8.00DS OD and OS
        - BCVA 20/20
    - Asymptomatic lattice degeneration OD and OS
    - Asymptomatic retinal hole
        - Ultrawide field images
            - Pre-treatment
            - Post-treatment (48 hours, 6 weeks)
    - Symptomatic retinal detachment
        - Demarcated within barrier laser (near-infrared imaging)
            - Status of the vitreous (OCT)
            - Progression of subretinal fluid (near-infrared imaging)
        - Is the macula on or off?
            - BCVA/20/20 OD and OS
        - What is happening in the vitreous?
    - Pars plana vitrectomy
        - Proliferative vitreoretinopathy (ultrawide field image)
            - Anterior segment image
            - OCT
    - Silicone oil tamponade
        - OCT
        - Vitreous debris vs. white blood cells

- Intravitreal injections (bevacizumab and triamcinolone acetonide)
  - Immediate IOP spike-treatment option? Anterior chamber paracentesis
- Hypotony (BCVA HM)
  - Near infrared imaging
  - OCT-macula and optic disc
  - Positive Seidel sign
    - Mud cracking
- Time to resolution-difluprednate 0.05% 4-6 times daily
  - 6 days

Case 6 MM

Case Example: The Mystery of the Unilateral Red Eye: A Case
By: Mahnia Madan OD, FAAO

47 YOWM - presents with a persistent red right eye.
Review patient symptoms
Pertinent patient ocular and medical history
Pertinent Testing:

- What do you test for?
- Necessities
  - Slit lamp microscope, NaFl strip (versus Fluress)
  - Look, Lift, Push Pull
  - Evaluate blink dynamics and correlation with lid positioning
  - Validated symptom questionnaire
- Other considerations:
  - Meibography imaging
  - Anterior segment imaging
  - Tear film evaluation: Tear Osmolarity, Inflammadry MMP-9

Differential diagnosis

- Consider causes of unilateral red eye: ocular surgery, trauma, infections, medications, lid abnormalities, life style
- Understanding the underlying contributors
- Aqueous deficiency, meibomian gland dysfunction vs lid closure

Determining a treatment plan - creating a plan for the patient and your staff

- Order of operation – which treatment first?
- Treating what you see
- Saying goodbye to classifications
- Short term vs long term
- Signs vs symptoms

Case 7 MR

I. Case
   a. 63 Y/O AfAm-F Referred to rule out macula off retinal detachment.
   b. Complaint seeing floaters for 8 months
   c. Preliminary findings

II. Fundus Examination
   a. Large partly pigmented elevated lesion superior temporal retina extends to the macula
   b. Fundus Imaging findings shown and described
   c. Fluorescein Angiography findings exhibited and described
   d. OCT findings exhibited and discussed

III. Diagnosis
   a. Peripheral CNV and Hemorrhagic pigment epithelial detachment

IV. Possible Etiologies and Associated Risk Factors
   a. Choroidal Vasculopathies
   b. Pachychoroid
   c. Polypoidal Choroidal Vasculopathy
   d. Peripheral Drusen
   e. (AMD)

V. Differential Diagnosis
   a. Neoplasm (MM, Mets)
   b. Vasoproliferative Tumor
   c. Hemangiomatous lesions
   d. Retinal Arterial Macroaneurysm (RAM)
   e. Coat's Disease,
   f. Familial Exudative Vitreoretinopathy (FEVR)
   g. Peripheral Exudative Hemorrhagic Chorioretinopathy (PEHCR)

VI. Demography, Pathophysiology, Clinical Significance and Relative Importance to Optometric Practice

VII. Treatment