Posterior Segment Case Challenges

Steven Ferrucci, OD, FAAO  
Chief, Optometry Sepulveda VA  
Professor, SCCO/MBKU

<table>
<thead>
<tr>
<th>CHRPE</th>
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<tbody>
<tr>
<td>• Unifocal lesion typically appear as flat, pigmented round lesions with distinct margins</td>
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<td>• Color ranges from light brown to jet black, depending upon amount of melanin</td>
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<td>• Often have areas of chorioretinal atrophy within the lesion that appear window like and allow a clear view of the underlying choroid (lacunae)</td>
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<td>• Typical size is 2-6 mm, but may be smaller or as large as 14 DD (21 mm)</td>
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<td>• Can be located anywhere within the fundus, but about 70% in temporal half of fundus</td>
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<td>• No apparent racial predisposition, although reported more in Caucasians</td>
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<td>• May be present at birth, with reports in as young as 3 months old</td>
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<td>• Lesions are almost always stable in size, but color may change.</td>
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<td></td>
<td>– Very rare instances of enlargement with time</td>
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<td>• Typically asymptomatic, and found on routine exam, but large lesions have been shown to have VF defects</td>
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<tr>
<td>• Can also appear as multifocal CHRPE</td>
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<td>– From 3 to 30 lesions, 0.1 to 3.0 mm in size</td>
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<td>• Benign, stationary and unilateral in 85% of the cases</td>
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<td>• Often called bear tracks</td>
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<tr>
<th>Gardner’s Syndrome</th>
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<td>• Multifocal CHRPE have been associated with Gardner’s Syndrome</td>
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<td>– Familial condition of colonic polyps that may be precursor to colon cancer</td>
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<td>– However, these lesions are bilateral, have more irregular borders, and are often scattered throughout the fundus</td>
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CHRPE
- Deferral includes nevi and choroidal melanoma
  - Nevi: rare, jet black and tend to have more indistinct borders
  - Melanomas tend to be greater than 2mm in thickness, where CHRPE are flat
- B-scan, serial photos and frequent monitoring of assistance

Nevus
- Common, benign tumor of the posterior fundus
- Typically slate-gray or brown in color, with somewhat indistinct borders
  - Often have overlying drusen, which signify chronicity of lesion
- Vary in size from 1/3 DD to as much as 7 DD
  - Flat or minimally elevated, < 2mm

Nevus
- Very common, with prevalence ranging from 0.2% up to 32% of patients
- More common in Caucasian population
- Asymptomatic, and usually found on routine exams
- Management consists of serial photography and frequent follow-up, with ultrasound if needed for more suspicious lesions

Nevus
- TFSOM: To Find Small Ocular Melanomas
  - T: Thickness lesions > 2 mm
  - F: Fluid: any subretinal fluid suggestive of RD
  - S: Symptoms of photopsia or vision loss
  - O: Orange pigment overlying the lesion
  - M: Margin touching the optic nerve head
    - No factor: 3% risk of converting to melanoma in 5 yrs
    - 1 factor: 8% risk
    - 2 or more factors: 50% risk

Update
- Arch Ophthalmol Aug 2009: Shields and Shields
  - Suggests adding two new features that are predictive for growth of nevi to melanoma
    - UH: Ultrasonic Hollowness
      - 26% with hollowness progressed vs. 4% w/o
    - H: Halo absence
      - 7% w/o halo progressed vs 2% w/halo
- To Find Small Ocular Melanomas Using Helpful Hints

VMT: Vitreomacular Traction
- VMT syndrome is characterized by a partial detachment of the posterior detachment with persistent adherence to the macula
  - Can lead to CME, ERM, and macular hole formation
- Once thought to be relatively rare, with advent of OCT now being seen more and more
  - In one study, 8% of pts were thought to have VMT by clinical observation only, but 30% by OCT
VAST STUDY

- 2,179 eyes, 1,120 asymptomatic pts > 40 years of age
  - Mean age 59
  - 57% female
  - 57% hyperopes, 35% myopes, 8% emmetropes
- VMA in 31% of eyes
  - Peak age 50-59
  - Less common in AA and HA

VMA vs. VMT: Duker

<table>
<thead>
<tr>
<th>VMA</th>
<th>VMT</th>
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<tr>
<td>Evidence of vitreous cortex detachment from retinal service</td>
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</tr>
<tr>
<td>Attachment of vitreous within 3 mm of fovea</td>
<td>Attachment of vitreous within 3 mm of fovea</td>
</tr>
<tr>
<td>No detectable change in foveal contour or underlying tissues</td>
<td>No detectable change in foveal contour or underlying tissues</td>
</tr>
<tr>
<td>Focal: &lt; 1500 um</td>
<td>Broad: &gt; 1500 um</td>
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VMT

- More commonly encountered in older women
  - Can occur in either sex, and age, no apparent racial predilection
- Aphakia and pseudophakia are protective, as these patient typically have a complete PVD
- Pts may report decreased vision, metamorphopsia and photopsia

VMT

- Clinically, very hard to diagnose
  - PVD with adherence to macular area
  - Can present as macular surface wrinkling/striae, similar to ERM, or loss of foveal reflex
  - May also note a thickened posterior hyaloid membrane
  - Retinal blood vessel distortion straightening may be present
  - Retinal thickening/macular edema may be associated
  - OCT IS THE KEY!!!!

VMT

- Natural progression of disease is rather variable
  - Slow progression possible with near normal acuity
  - Approx 10% will have spontaneous PVD and resolution
- Therefore, close monitoring my be advised for some patients

VMT

- In patients with poor vision, or symptomatic, a pars planar vitrectomy (PPV) may be considered
  - Duration, severity should also be considered
- Literature repots up to a 75% success rate and improvement of vision following PPV
Jetrea (Ocriplasmin)

- Intravitreal injection of thrombolytic agent that causes lysis of vitreous
  - Pharmacologic vitrectomy
- FDA approved October 2012 for treatment of symptomatic vitreomacular adhesion
- Two phase 3 trials
  - 26.5% of pts had resolution of VMA vs. 10.1% with placebo
  - Minimal adverse effects
  - 0.125 mg (0.1 ml) injection
- Available January 2013
- Cost?

Epi-retinal Membrane

- AKA macular pucker, cellophane maculopathy
- Can be secondary to peripheral retinal disease, such as detachment or tear; a retinal vascular disease such as BRVO; inflammation; trauma or idiopathic
- Idiopathic tend to be more mild and non-progressive vs. those after retinal tear

Epi-retinal Membrane

- VA can range from 20/20 to 20/200 or worse
  - Studies show > 5% have worse than 20/200
- Often metamorphopsia is only complaint with idiopathic ERM
- Fewer than 20% of cases are bilateral
- Surgical removal is considered if severe vision loss or distortion

Central Serous Retinopathy

- Common disorder of unknown etiology which typically affects men between age 20 and 45
  - Males to females 10:1
- Serous detachment of neurosensory retina due to leakage from small defect in RPE

Central Serous Retinopathy

- Pt typically presents with fairly recent onset of blurred VA in one eye with a scotoma, micropsia, or metamorphopsia
  - VA typically 20/30-20/70
  - Often correctable with low hyperopic RX
  - Unilateral in 70% of cases
### Central Serous Retinopathy

- Appears as a shallow round or oval elevation of the sensory retina often outlined by a glistening reflex
- FA is helpful in providing definitive diagnosis
  - Classic Smoke stack appearance (occasionally)
  - Ink-blot appearance
- OCT shows marked elevation

### CSR: Risk Factors

- **Male > Female 10:1**
- **Age:** Peak 20-45
- **Type A personality**
- **Stress**
- **Pregnancy**
- **Steroid use**
  - Oral
  - Topical?
  - Injection?
- **Choroidal Thickness?**
- **Genetics?**
- **Viagra?**

### Central Serous Retinopathy

- 80-90% of pts will undergo spontaneous resolution and return to normal (or near normal) VA within 1-6 mos.
  - >60% resolve back to 20/20
  - Rare to have vision remain < 20/40
- Approx 40% will get recurrence
- CNVM is VERY rare occurrence, but possible

### Central Serous Retinopathy

- No known medical therapy has been proven effective
  - Topical steroids, NSAIDs etc
- Localized photocoagulation may be of some benefit, but only if
  - Duration at least 4 months
  - VA in other eye is reduced from other attacks
  - Recurrent CSR has already reduced VA in that eye
  - Pt is intolerant of vision and willing to take risk
- PDT suggested in some cases
- Avastin?
- Behavior modification?

### Treatment

- Observation
- PDT
- Anti-VEGF
- Anti-corticosteroids
  - Rifampin
  - Mifepristone
  - Ketoconazole
  - Spironolactone/eplerenone
  - Finasteride
- Acetazolamide
- Aspirin
- Metoprolol
- H.pylori treatment
- Methotrexate
- Behavior Modification!

### PVD

- Floaters are typically most common symptom
  - Cobwebs
  - Flies
  - Hairs
- Flashes
  - Indicative of traction on retina, but not necessarily a tear or break
The Vitreous Humor

• Vitreous attached most firmly at
  – Macula
  – VMT
  – Vitreous base
  – Around optic nerve head
  – Weiss’ Ring
  – Also, some traction on blood vessels
  • Vit heme

Physiologic Changes

• With age, liquifaction due to reduction in hyaluronic acid causes loss of support.
  • This process is referred to as synchesis.

Physiologic Changes

• Vitreous shrinkage, contraction and collapse can cause traction.
  • This process is referred to as syneresis.

Incidence of PVD

<table>
<thead>
<tr>
<th>Age</th>
<th>Incidence</th>
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<tbody>
<tr>
<td>&gt;80</td>
<td>RARE</td>
</tr>
<tr>
<td>60-69</td>
<td>27%</td>
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<tr>
<td>70</td>
<td>63%</td>
</tr>
<tr>
<td>&gt;80</td>
<td>75%</td>
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• 65%>65 HAVE A PVD

Incidence of PVD

• Incidence may be accelerated by
  – Myopia
  – Trauma
  – Prior vitreoretinal disease
  – Surgery
  – Inflammation
  – Symmetrical 90% of the time
  • Happens to second eye with 1-2 years

PVDs

• Good News:
  – Retinal Tears/Breaks Relatively uncommon
  • One study: only 7-15% of symptomatic PVDs have a retinal break

• Bad news:
  – 7-15% have a retinal break
Risk Factors

- Pigment
  - Schaeffer’s Sign
  - Indicates break is possible
- Hemorrhage
  - 90% have break
- Inflammatory cells

Take Home

- DFE WITH scleral Depression!
- Council patient on signs and symptoms of RD
  - Increase in floaters
  - Increase in flashes
  - Sudden loss of vision/curtain over eye
- RTC 4-6 weeks as long as FLASHES are present
  - Sooner if heme or high risk
- 6 months to 1 year after
- DOCUMENT! DOCUMENT! DOCUMENT!