

## REFER OR RELAX: RETINA

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

## Disclosures

- Alcon
- B&L
- Centervue
- Genentech
- Maculogix
- Optovue
- Regeneron
- Science Based Health

## INTRODUCTION

- Various retinal cases will be presented
- Question is should the case be referred to a retina specialist OR can you monitor it yourself
- There are no right or wrong answers, just differences of opinion
- JUST KIDDING, THERE ARE WRONG ANSWERS!

## What if?

- Pt states he does MMA “ for fun”?
- Pt is -6.50 D Myope?
- Had an RD in other eye?
- Is monocular for any reason?
- Is a lawyer?
- Is going to have cataract surgery?
- It just looks bad!

## Lattice Degeneration

- 5-10% in General Population
- Found in 30% of all RD cases
- But, less than 1% of all lattice results in RD!!
  - Byer NE. OPTH 1989. 0.7% over 10 years

## Lattice Degeneration

- Circumferential oval lesions often with thin white blood vessels
- Pigment can vary
- Vitreous adhesion at borders
- Syneretic vitreous overlying the lesion itself
- Can have atrophic round holes without operculum typically towards end of lesions
  - Occur up to 30% of the time

### Lattice Degeneration

- Most common in Superior and inferior retina
  - 2/3 cases from 5-7 or 11-1 o'clock
- Typical lesion size
  - ½ to 2.5 DD in width
  - 1-4 DD in length
- Average numbers of lesion per eye: 2
  - Range: 1-19
- Bilateral in >>50% of cases

### Lattice degeneration

- Most new cases discovered from 10-20 years of age
- May have hereditary component
- No apparent gender or race bias

### Risk Factors

- Myopia > 3D, especially if < 30.
- Myopia > 6 D at any age
- Fellow eye has RD
- Family history of RD
- Symptoms
- Presence of traction
- High risk behavior

### Follow up

- Lattice as only sign/symptom
  - Scleral depression
  - Pt ed.
  - RTC 1 year
- Lattice with symptoms of flashes floaters
  - Reexamine q 6 mos
  - Repeat DFE/scleral depression
  - Pt ed

### Follow up

- Lattice with holes but no risk factors
  - Scleral depression
  - Pt ed
  - Rtc 6 mos
  - Sooner if young myope, myope > 5 D, inferior holes, or adhesion
- Lattice with risk factors for RD
  - Consider retinal consult
- Lattice with breaks at margin of lesion
  - Consider retinal consult

### Retinal Breaks

- Occur in 3 to 7% of adult population
- Usually asymptomatic
- 1-2% with breaks progress to detachment
- Risk factors include lattice degeneration, high myopia, atrophic holes, aphakia/pseudophakia, and trauma

## Horseshoe tears

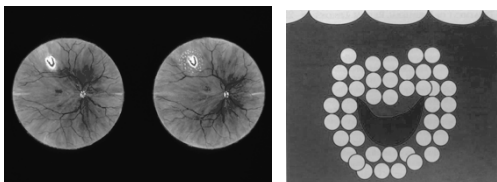
- Common locations
  - Near lattice
  - Near pigment clumps
  - Near chorioretinal scars
- Worst locations
  - Superior
  - Near equator
  - Close to posterior pole

## Treatment

- Laser treatment is used to seal the break by creating adhesion between the retinal tissue and underlying RPE
- Provides barrier to continued enlargement from vitreo-retinal traction and prevents accumulation of subretinal fluid
- Adhesion present 24 hours after surgery, and strengthens over several days

## Procedure

- Topical or retrobulbar anesthesia
- Entire lesion should be enclosed by at least 3 rows in a honeycomb pattern



## Follow-up

- RTC 1-2 weeks after laser for symptomatic tears
- 3-4 weeks for asymptomatic
- If large or superior, RTC even sooner
- If enlargement or new subretinal fluid, retreat with 1 week follow-up
- RTC 6-8 weeks after initial follow-up
- Yearly thereafter

## Complications

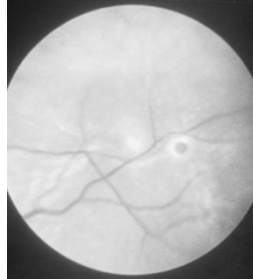
- Few complications
  - inadequate burn intensity, causing ineffective adhesion
  - possible CNVM
  - intraretinal hemorrhage
  - vitreous hemorrhage
  - ERM formation

## Operculated holes

- Round, red hole with overlying free operculum attached to vitreous
  - Operculum often appears smaller than hole
- Minimal risk as no traction
- Treatment sometimes
  - High myopia
  - Aphakia
  - h/o RD in the fellow eye
  - Other factors

### Atrophic Retinal Holes

- Small round, red hole w/o operculum
  - May have surrounding pigment
  - Occasional edema
- 2-3% of general population
- Most often in vitreous base
- Found in atrophic retina, perhaps 2° to vascular insufficiency



### Atrophic Retinal Holes

- No traction
  - Minimal risk of detachment
- Asymptomatic holes
  - Yearly
  - Pt ed
- Asymptomatic with surrounding edema
  - Follow more closely
- Symptomatic
  - Consider consult
- Other associated issues
  - As warranted
- Rarely treated

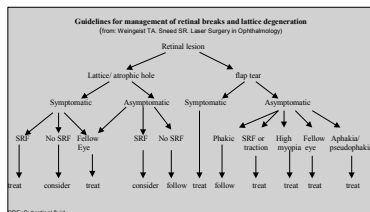
### Treatment of Asymptomatic Lesions

Lesion	Phakic	High Myopia	RD etc in other eye
Atrophic hole	No	No	Rarely
Operculated hole	No	Rarely	Rarely
Lattice with or without hole	No	Rarely	Sometimes
Flap tear	Sometimes	Sometimes	Usually

### Treatment of Symptomatic Lesions

- | Lesion               | Treat       |
|----------------------|-------------|
| • Horseshoe tears    | • Yes       |
| • Operculated holes  | • Rarely    |
| • Atrophic holes     | • No        |
| • Lattice w/o holes  | • No        |
| • Lattice with holes | • Sometimes |

### Basic Guidelines for Treatment

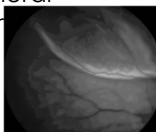


### RD

- Rule-of-thumb:
  - For macula off RD, want to get it repaired in same amount of time it has been off
  - So if off for 4 days, best to try repair within 4 days!
- Macula on RD is emergency!
  - Same day referral to retinal specialist
  - **Remind pt NPO until sees specialist in case same-day surgery**

## Retinal Detachments

- Rhegmatogenous RD occur when liquefied vitreous fluid enters the sub-retinal space through a full-thickness retinal break.
- Occurs in 1/100,000 per yr
- Treatment options include scleral buckle, pars planar vitrectomy, pneumatic retinopexy

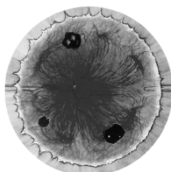


## Retinal Detachments

- Many factors go into selecting which procedure is best for patient
  - Phakic/pseudophakic
  - Location of tear
  - Size of tear
- Experience of retinal surgeon is essential!
  - Do your homework!

## CHRPE

- Unifocal lesion typically appear as flat, pigmented round lesions with distinct margins
- Color ranges from light brown to jet black, depending upon amount of melanin
- Often have areas of chorioretinal atrophy within the lesion that appear window like and allow a clear view choroid (lacunae)



Benign and Malignant Tumors Plate 12

## CHRPE

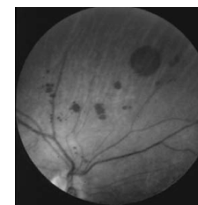
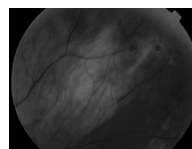
- Typical size is 2-6 mm, but may be smaller or as large as 14 DD (21 mm)
- Can be located anywhere within the fundus, but about 70% in temporal half of fundus
- No apparent racial predisposition, although reported more in Caucasians
- May be present at birth, with reports in as young as 3 months old

## CHRPE

- Lesions are almost always stable in size, but color may change.
  - Very rare instances of enlargement with time
- Typically asymptomatic, and found on routine exam, but large lesions have been shown to have VF defects

## CHRPE

- Can also appear as multifocal CHRPE
  - From 3 to 30 lesions, 0.1 to 3.0 mm in size
- Benign, stationary and unilateral in 85% of the cases
- Often called bear tracks



## Gardner's Syndrome

- Multifocal CHRPE have been associated with Gardner's Syndrome
  - AKA FAP: familial adenomatous polyposis
  - Familial condition of colonic polyps that may be precursor to colon cancer
  - However, these lesions are bilateral, have more irregular borders, and are often scattered throughout the fundus

## CHRPE

- Differential includes nevi and choroidal melanoma
  - Nevi: nevi are rarely 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

## 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

### TRADITIONAL

- Male > Female 10:1
- Age: Peak 20-45
- Type A personality
- Stress
- Pregnancy

### OTHERS

- Steroid use
  - Oral
  - Topical?
  - Inhaled?
  - Injection?
- Choroidal Thickness
- Sleep apnea?
- Genes?

## 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

## CSR

- **When to worry/refer**
  - If VA worse than 20/70
  - If pt demographics do not support
  - If does not resolve in 6 mos
  - If gets worse rather than better
  - FA/ OCT does not support diagnosis
  - “Just doesn’t feel right”
  - Pt is unable to accept vision/prognosis

## Treatment

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

### LMH

- Lamellar Macula Hole OS
  - Also called partial thickness macular hole
- Pt ed.
- Monitor in 3 mos.
- Repeat OCT
- Consider retina referral if worsens

### LMH

- Symptoms
  - mild metamorphopsia,
  - limited acuity loss
  - stable vision
- Surgery is controversial
  - 25% to 75% improved visual acuity
- Therefore, monitoring seems reasonable

### FTMH

- Definition: Full thickness macular hole that affects all macular layers from ILM to RPE
- Size
  - Small:  $\leq 250$   $\mu\text{m}$
  - Medium: 250 $\mu\text{m}$  to 400 $\mu\text{m}$
  - Large  $\geq 400$   $\mu\text{m}$
- Presence or absence of VMT
- By cause
  - Primary: Initiated by VMT (formerly idiopathic)
  - Secondary: from associated disease or trauma

### FTMH

- Small holes
  - Small rate of spontaneous closure
  - Very high surgical closure rate (almost 100%)
  - Best response to pharmacologic vitreolysis
- Medium holes
  - High surgical closure rate (>90%)
  - Decent response to pharmacologic vitreolysis
- Large holes
  - High surgical closure rate (75-90%)
  - No response to pharmacologic vitreolysis
  - $\frac{1}{2}$  of all holes are large at time of diagnosis

### CRVO/BRVO

- Refer if macula edema within 1 week
  - Laser vs. injection in BRVO
  - Injection CRVO
  - Steroids?
- Systemic workup recommended
  - DM
  - HTN
  - Cholesterol panel
  - Carotid Doppler
- Look for NV/NVI/NVA/NVG esp. in CRVO, esp. if ischemic