

REFER OR RELAX: macula

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

1

Disclosures

- I serve on the speaker bureau or advisory board for the following companies
 - Apellis
 - Genentech
 - I-care
 - Iveric
 - Notal Vision
 - Novartis
 - Regeneron
 - Science Based Health
 - Visible Genomics

2

INTRODUCTION

- Various macula 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!

3

Viagra and CSR

- Retina 2008: Fraunfelder and Fraunfelder
- 11 reported cases of CSR in men taking Viagra
 - In 8/11, pts stopped taking Viagra
 - In 6/8, vision improved with cessation
 - In 3 cases, CSR returned when started med again
 - 2 pts continued to have CSR after cessation
- Might consider recommending cessation of Viagra if active CSR, but relationship is unknown at this time

4

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

5

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

6

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

7

CSR: Risk Factors

- | | |
|---|--|
| <p>TRADITIONAL</p> <ul style="list-style-type: none"> • Male > Female 10:1 • Age: Peak 20-45 • Type A personality • Stress • Pregnancy | <p>OTHERS</p> <ul style="list-style-type: none"> • Steroid use <ul style="list-style-type: none"> – Oral – Topical? – Inhaled? – Injection? • Choroidal Thickness • Sleep apnea? • Genes? • Viagra? |
|---|--|

8

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

9

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

10

Treatment

- | | |
|---|--|
| <ul style="list-style-type: none"> • Observation • PDT • Anti-VEGF • Anti-corticosteroids <ul style="list-style-type: none"> – Rifampin – Mifepristone – Ketoconazole – Spironolactone/eplerenone – Finasteride | <ul style="list-style-type: none"> • Acetazolamide • Aspirin • Metoprolol • H.pylori treatment • Methotrexate • Behavior Modification! |
|---|--|

11

LMH

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

12

Macular Hole

- Present as a circular to oval depression of varying degrees in the avascular area of the macula
 - May have surrounding cuff of edema
- Most common cause is idiopathic
 - other causes include blunt trauma, severe myopia, solar retinopathy, CME
- Highest incidence in 7th decade of life
- Women 2x as often as men

13

Macular Hole

- Vision typically 20/80 to 20/200 with full-thickness hole
- If pt has macular hole in one eye, 28-44% chance of macular hole in other eye w/o a PVD
 - If PVD already, very little chance
- Watzke-Allen sign useful to differentiate true hole from similar appearance
- OCT very useful

14

FTMH

- Definition: Full thickness macular hole that affects all macular layers from ILM to RPE
- Size
 - Small: ≤ 250 μm
 - Medium: 250 μm to 400 μm
 - Large ≥ 400 μm
- Presence or absence of VMT
- By cause
 - Primary: Initiated by VMT (formerly idiopathic)
 - Secondary: from associated disease or trauma

15

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

16

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

17

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

18

ERM

AGE	INCIDENCE
< 60	1.7%
60-69	7.2%
70-79	11.6%
80+	9.3%

BLUE MOUNTAIN EYE STUDY, AUSTRALIA

19

ERM

- Consider surgery if:
 - VA 20/40-ish or worse
 - Symptomatic
 - Visual need of patient
- Make sure you have an experienced surgeon!!

20

VMT: Vitreomacular Traction

- VMT syndrome is characterized by a partial detachment of the posterior vitreous 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

21

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

22

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

23

VMA vs. VMT: Duker

VMA

- Evidence of vitreous cortex detachment from retinal service
- Attachment of vitreous within 3 mm of fovea
- **No detectable change in foveal contour or underlying tissues**
- Focal: <1500 um
- Broad: >1500 um

VMT

- Evidence of vitreous cortex detachment from retinal service
- Attachment of vitreous within 3 mm of fovea
- **Distortion of foveal surface, intraretinal structural changes, and/or elevation of fovea, but no full thickness interruption of retinal layers**

24

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!!!!**

25

VMT

- Natural progression of disease is rather variable
 - Slow progression possible with near normal acuity
 - Approx 10% will have spontaneous PVD and resolution after 1 mos
 - Almost 30% by 3 mos
- Therefore, close monitoring may be advised for some patients

26

VMT

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

27

BRVO/CRVO

- Management includes diagnosis and management of underlying etiology
- Most often associated with DM and HTN
- However many other possible etiologies
 - Carotid artery disease
 - Hyperlipidemia/hypercholesterolemia
 - Altered platelet function
 - Coats disease
 - Von-Hippel Lindau
 - Eales' disease
 - Trauma

28

BRVO/CRVO

- | | |
|---|--|
| <ul style="list-style-type: none"> • At minimum, should have <ul style="list-style-type: none"> – BP evaluated – Fasting Blood sugars (FBS)/A1c – CBC – Lipid profile | <ul style="list-style-type: none"> • Additional tests might include <ul style="list-style-type: none"> – Carotid artery evaluation – Cardiac evaluation – Additional blood tests <ul style="list-style-type: none"> • ANA • RF • FTA/ABS • ESR |
|---|--|

29

Anti-VEGF:Lucentis

- CRUISE (CRVO) Study:
 - Vision improved > 15 letters in almost 50% of patients vs. 17% with sham at 6 mos
 - mean VA gain of almost 15 letters
- BRAVO (BRVO) Study:
 - Vision improved > 15 letters in over 60% of patients vs. 28% with sham
 - Mean VA gain of approx 18 letters
- Few side effects in either group

30

Anti-VEGF: Eylea® (afilbercept)

- FDA approved Sept, 2012 for treatment of macula edema secondary to CRVO
- COPERNICUS and GALILEO studies:
 - % of pts gaining 15 letters or more of BCVA
 - Injection q 2 mos for 24 weeks
- COPERNICUS:
 - 56% vs. 12% with sham
 - 17.3 letters gained vs. 4.0 lost with sham
- GALILEO:
 - 60% vs. 22% with sham
 - 18.0 letters gained vs. 3.3 lost with sham

31

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

32

antiVEGF

- Lucentis, Avastin, Eylea
- Shown in multiple studies to be beneficial for DME
 - RISE
 - 18.1% of pts in sham gained \geq 15 letters vs. 44.8% (0.3 mg) or 39.2% (0.5 mg)
 - 2.6 letters gained in sham vs. 12.5 (0.3mg) or 11.9 (0.5mg)
 - READ
 - VISTA
 - VIVID

33

Protocol V

- 702 pts with CI-DME with VA 20/25 or better
- 3 treatment groups
 - Eylea
 - FML
 - Observation
- At end of 2 years, rate of loss of 5 letters or more similar in all 3 groups
- Avg acuity in all 3 groups was 20/20
- Bottom line: pts with CI-DME and good VA can be observed

34

DM/DME

- Refer if center involved DME/CSME evident on OCT in 1-2 weeks
- If not center involved, follow closely in 3- 6 mos
- Pt ed re role of BS/BP control
- Treatment: FML vs. serial anti-VEGF

35