When to Refer and Why
Behind the MD Curtain: An Internist’s Perspective

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Objectives

• Provide information on referring to an MD
  – When to refer
  – What information to convey
• Provide insight on what goes on after a referral is made
  – Diagnostic workup
  – Acute and long-term management
• Demonstrate the importance of MD / OD collaboration
  – Ocular implications
  – Systemic implications

Disclosures

• Drs. Neal and Winton put together a rock band in 2012 with a couple other guys.
  – It lasted about 6 weeks.
  – No. of practices: 8
  – No. of shows: 0
• No other disclosures, financial or otherwise

Diabetes

• 65 year old white male
• CC: Cloudy vision right eye x 1 month. I think I need some stronger glasses.
• PMHx: Unremarkable “doesn’t like to go to the doctor”
• POHx: Spectacles since age 12

Diabetes

• BCVA: OD: 20/30 OS: 20/25
• CVF: FTFC OU
• IOP OD: 18 OS 19
• Anterior Segment: mild nuclear cataracts OD/OS
• Posterior Segment: see photo
Diabetes

• Presumed proliferative diabetic retinopathy OD/OS

• Plan
  – Refer to retinal specialist for evaluation
  – Systemic health?
  – How worried should I be here?
  – What should I do in the office today?

Assessment/Plan

Diabetes

• Fingerstick glucose & vital signs
  – 200-400, vitals OK, not acutely ill: don’t panic.
    Outpatient MD followup within one week.
  – 200-400, tachycardic OR hypotensive OR ill-
    appearing: need ER
  – >400: need ER

Now what?

Diabetes

• Why ER? What’s the emergency?
• What can kill your patient today?
  – Electrolyte abnormalities (pH, potassium, etc.)
  – Dehydration
  – Silent myocardial infarction

Diabetes

• “I can’t see right.”

Diabetes
Diabetes

- NOTICE: no mention of A1c to determine urgency
- BUT...A1c is still a GREAT test
  - Average blood glucose level over the past 3 months
  - A1c ≥ 6.5 = diabetes
  - A1c > 7.0 = uncontrolled diabetes
  - Accurate within 0.5 percentage points

Diabetes

- A1c is subject to misinterpretation!
  - Newly diagnosed diabetes (average glucose)
  - “Brittle” diabetes (glucose roller coaster)
  - Hemoglobinopathies (sickle cell, thalassemia, etc.)
  - Iron deficiency or recent blood transfusion
  - Liver or kidney failure
Diabetes

- What does the internist do?
  1. Decide why diabetic (type I vs. type II vs. pancreatic insufficiency)
  2. Further testing (lipids, lytes, TSH, urine protein)
  3. Therapy (pills only / pills + insulin / insulin only)
  4. EDUCATE / follow up
  5. Arrange annual eye screening

Hypertension

- 50 year old white female
- CC: I have been getting this headache for a while. I think I need stronger glasses.
- PMHx: unremarkable
- POHx: occasional contact lens wear, spectacles for many years

Hypertension

- BCVA: OD: 20/20 OS: 20/20
- CVF: FTFC OU  BP: 170/95
- Binocular testing yields no significant findings
- IOP: OD: 14 OS: 14
- Anterior segment: mild corneal neovascularization
- Posterior segment: see photo

Assessment/Plan

- Hypertensive retinopathy OD/OS

- Plan
  - Check Blood Pressure
  - Urgent/Emergent referral?
  - My vision is fine, why are you talking about my blood pressure?
Hypertension

• What Systolic BP is “too high”?
• What Diastolic BP is “too high”?
• Answer: whatever number scares you
• Better question: What is the context of the high blood pressure?
  – Symptoms?
  – Situation?
  – How was it measured?

Hypertension

• For high BP, consider:
  – Did a machine take the BP?
  – Was the cuff size appropriate?
  – Is the patient symptomatic?
    • Blood in urine, confusion, shortness of breath, chest pain, abdominal pain, etc.

Hypertension

• Flame hemorrhages OR papilledema in a patient with SBP > 160 and / or DBP > 110 needs emergent treatment for MALIGNANT HYPERTENSION
  – **THIS IS WHERE YOUR INPUT IS HELPFUL!!!
  – Electrolytes (looking for kidney disease)
  – CBC (looking for low platelets)
  – CT head (looking for intracranial hemorrhage)

Hypertension

What does the internist do?

• Consider secondary causes of hypertension
  – Hyperaldosteronism, endocrine disorders, kidney disease, etc.
• Initiate treatment
• DON’T LOWER TOO RAPIDLY!!!
  – (unless bleeding into brain)

Embolic Disease

• 72 yo AAM
• CC: A large part of my vision is missing. I just noticed it this morning.
• PMHx: HTN x 20 years, 2 heart stents 5 years ago
• POHx: Glasses x 30 years

Embolic Disease

• BCVA OD: 20/40 OS 20/25
• IOP OD: 18 OS: 17
• CVF: Extinction superior quadrants OD FTFC OS
• Anterior seg: unremarkable
• Posterior seg: see photo
Retinal Artery Occlusion

Assessment/Plan

• Branch retinal artery occlusion with visible embolus

• Plan
  – Breathe into a bag?
  – Referral for laser embolectomy?
  – Systemic workup?

Retinal Artery Occlusion

Workup

• Homocysteine - can reduce level, but not risk
• ANA - nonspecific, maybe later.
• CRP - will be elevated. Uninterpretable. Waste of $$. 
• ACE - elevated in ALL granulomatous disease.
• Lyme - only if traveled to or live in endemic area.
• Coagulopathy - never during acute embolic event.

Retinal Artery Occlusion

• CRAO / BRAO need workup to determine source
  – Imaging: carotid U/S or angiography, echo
  – Labs: CBC, Electrolytes, Lipids, RPR, HIV, ESR
  – NOTICE WHAT I DIDN’T AUTO-ORDER:
    • CRP, ANA, ACE, Lyme titers, coagulopathy panel, homocysteine

• Optocase RAO

Retinal Artery Occlusion

Other Vasculitidies:

• Behçet’s disease
• Systemic lupus erythematosus
• Giant cell arteritis
• Wegener granulomatosis
• Polyarteritis nodosa
• Multiple sclerosis
• Sarcoidosis
• HLA-B27 associated conditions
  – (BUT DON’T CHECK HLA-B27!!)
• Relapsing polychondritis
• Inflammatory bowel disease
  – Crohn disease
  – Ulcerative colitis
• Toxoplasmosis
• Tuberculosis
• Syphilis
• Whipple’s disease
**Nystagmus**

- 55 yo AAM
- CC: My eyes started jumping around
- PMHx: DM x 12 years, HTN x 10 yrs
- POHx: unremarkable

**Nystagmus**

- BCVA: OD 20/40 OS 20/40
- CVF: FTFC OU but poor fixation
- EOM: FROM OU with upbeat nystagmus
- IOP OD: 12 OS: 12
- Anterior segment: unremarkable
- Posterior segment: unremarkable

**Nystagmus**

- Don’t laugh! You might get this referral!
- ALWAYS REFER NYSTAGMUS TO AN INTERNIST OR NEUROLOGIST (preferably not the one who sent it to you)
- Information for referral:
  - Direction (up / down / left / right / rotational)
  - Timing (acute / chronic)
  - Associated symptoms (vertigo, tinnitus)

**Nystagmus - Workup**

- Differential Diagnosis:
  - Vestibular (Labyrinthitis, Otolith, Benign Positional Peripheral Vertigo)
  - Central (Stroke, tumor, demyelinating disease)
  - Metabolic (Medications, drugs, nutritional deficiency)
  - Thiamine deficiency (Wernicke encephalopathy)
- Workup: Imaging (unless obvious etiology, such as medication)

**Sarcoidosis**

- 40 yo AAF
- CC: My eyes are always red and watery. I have to wear shades at all times
- PMHx: unremarkable
- POHx: “pink eye” 4 times in the past 5 years

**Sarcoidosis**

- BCVA: OD 20/25 OS 20/25
- CVF FTFC OU, FROM OU
- IOP OD: 9 OS: 8
- Anterior seg: 3+ cells 2+ flare in the AC OD/OS
- Keratic precipitates OD/OS
- Post seg: unremarkable
**Sarcoidosis**

- **Assessment/Plan**
  - 1. Acute bilateral granulomatous anterior uveitis
  - Plan:
    - Begin Pred Forte q2h OD/OS, begin homatropine 5.0% BID OD/OS, monitor 4-7 days
    - Bloodwork? Imaging?

**Sarcoidosis - Workup**

- **Systemic granulomatous disease of unknown etiology**
  - Primarily manifests in lungs
  - Non-pulmonary sarcoid makes up 10% of disease
- **Labs:** Calcium, vitamin D, renal function, liver enzymes, PPD, sputum samples
  - *ACE level is neither sensitive nor specific
- **Differential diagnosis**
  - Multiple sclerosis, inflammatory bowel disease
  - Amyloidosis, lymphoma
  - Infection (TB, histoplasmosis, coccidioidomycosis)

**Sarcoidosis - Workup**

- Radiography: Chest XR
  - Bilateral hilar lymphadenopathy
  - Air trapping
  - CT of chest rarely contributes to diagnosis
- Other tests:
  - EKG
  - Pulmonary function testing

**Endophthalmitis**

- 44 yo WM
- **CC:** My vision in my right eye has been blurry and I have been feeling pretty sick since I was released from the hospital 2 weeks ago.
- **PMHx:** (+)HIV
- **POHx:** spectacle use since childhood
Endophthalmitis

- BCVA: OD: 20/400 OS: 20/20
- CVF: FTFC OU, FROM OU
- IOP OD: 8 OS: 16
- Anterior segment: 3+ injection along with 3+ cells and flare OD
- Posterior segment: see photo

Assessment/Plan

- Endophthalmitis OD
  - Refer to retinal specialist?
  - ER?
  - Emergent?

Endophthalmitis

- Setting: immunocompromised patients and/or recently hospitalized patients
- Always an emergency (i.e., requires inpatient management)!
- What you can do:
  - Describe lesion as retinal vs. vitreal – both will require systemic antifungals but vitreal disease requires vitrectomy + intra-ocular antifungals

Syphilis

- 38 yo WM
- CC: I would just like to get my eyes checked.
- PMHx: unremarkable
- POHx: Unremarkable

Syphilis

- BCVA: OD 20/20 OS 20/20
- CVF FTFC OU
- IOP: OD: 14 OS: 13
- Anterior segment: old keratic precipitates OD/OS & old synechiae and pigment on anterior lens, no active inflammation
- Posterior segment: see photos
Posterior Segment

Ocular Manifestations

- Ocular manifestations of syphilis:
  - Uveitis (anterior/intermediate/posterior)
  - Keratic Precipitates
  - Vitritis
  - Optic atrophy
  - Retinal pigment changes
  - Interstitial Keratitis
  - Episcleritis/Conjunctivitis
  - Retinitis
  - Vasculitis (ground glass)

Assessment/PLan

- Inactive bilateral anterior uveitis
- Chorioretinal scarring OD/OS
- Systemic inflammatory/infective workup
  - What lab tests?
  - Imaging?
  - Followup?

Syphilis

- “The great imitator”
- Can cause multiple systemic ailments
- Diagnosis, classification, and lab interpretation is confusing — but important because of treatment implications
- Don’t ever type “syphilis” into google images

Primary syphilis = genital chancre only
  - Duration: weeks
  - Treatment: one shot of penicillin
Secondary syphilis = rash
  - Multiple different types of rashes
  - Duration: weeks to months
  - Treatment: one shot of penicillin
Early latent syphilis = no symptoms; infection < 1 year
  - Very rarely caught unless patient has annual screening
  - Treatment: one shot of penicillin

Late latent syphilis = no symptoms; infection > 1 year or unknown duration
  - Much more commonly diagnosed than early latent
  - Treatment: 1 shot of penicillin weekly x3 total
Tertiary syphilis = late manifestations
  - Occurs years to decades after initial infection
  - Neurosyphilis, cardiac syphilis, gummatous syphilis
  - Treatment: IV penicillin 6 times / day for 2 weeks
Syphilis

- Laboratory interpretation: RPR
  - If non-reactive, no syphilis, you’re done
  - If weakly positive (1:8 or lower)
    - Check confirmatory FTA-ABS or treponemal antibody – if that
      is nonreactive, your RPR was a false positive
    - If confirmatory test reactive, check to see if RPR ever done in
      past (4-fold decrease from prior RPR = treated syphilis).
      Otherwise, it’s real, so determine which stage and treat
      accordingly.
  - If strongly positive (1:16 or higher)
    - It’s probably syphilis. You can check confirmatory test but it
      will be reactive. Determine stage and treat accordingly.

Other considerations
- RPR 1:32 or greater should probably be checked for
  neurosyphilis (i.e., CSF studies) even if asymptomatic
  - Exception: obvious primary or secondary syphilis.
- Any reactive RPR in an HIV patient should be
  presumed real with strong consideration for ruling out
  neurosyphilis
- CSF diagnosis of neurosyphilis is inexact
  - Multiple labs must be considered (CSF protein, CSF
    lymphocytes, CSF FTA-ABS, CSF VDRL)
  - When in doubt, treat as neurosyphilis.
- OCULAR SYPHILIS CAN OCCUR AT ANY STAGE

Optometric Medications with
Systemic Implications
(or, When the MD Calls the OD)

Topical beta blockers
- Can be absorbed systemically and are generally
  nonselective (block beta1 and beta2 receptors)
  - Can cause bradycardia leading to dizziness or syncope
    in the elderly and in patients with underlying heart
    disease
  - Use with care if already on systemic beta blocker
  - Can cause bronchospasm and wheezing in patients
    with chronic lung disease (asthma, sarcoidosis, COPD)
  - We may call you to let you know we’re changing your
    dorzolamide / timolol combo to single agent
dorzolamide

Antibiotics
- Always check allergies
  - *Penicillin allergy does NOT preclude cephalosporin
    use as long as the allergy is not anaphylactic shock
- Macrolides (erythromycin, azithromycin) should
  be given careful consideration!!
  - Can cause fatal arrhythmias, especially in combination
    with certain medications or medical conditions
- Clindamycin is losing ground and is hard to take
  (3-4 time / day dosing)

Antibiotics
- Sulfamethoxazole / trimethoprim works, but only
  for staphylococcal disease
  - Poor coverage for streptococcal disease
  - Must be weight-based
  - Can raise potassium and creatinine in patients with
    underlying kidney disease
  - Can cause bone marrow suppression
- Doxycycline and minocycline are great
  - Just remember to tell the patient to drink a full glass
    of water with it, don’t take it less than 1 hour prior to
    bedtime, and stay out of the sun