Grand rounds: A string of pearls

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Case #1

Recurrent Corneal Erosions (RCE’s)

• Tendency for minor trauma to cause significant corneal epithelial disturbances
• Pathophysiology
  – Abnormally weak attachment between the basal cells of the corneal epithelium and their basement membrane
• Most common causes of the weak attachment
  – Mechanical trauma**
  – Corneal dystrophy**
  – Corneal surgery

Recurrent Corneal Erosions

• Sx’s:
  – Acute, severe pain**
  – Photophobia **
  – Redness
  – Blepharospasm
  – Tearing

***Usually sx’s present first thing in the morning upon opening the eyes.***
And often this is recurrent

Recurrent Corneal Erosions

• Signs:
  – Epithelial defect may be present, usually in the inferior interpalpebral area

Recurrent Corneal Erosions

• Signs:
  – If no defect is present, look for loose, irregular epithelium
    (pooling of NaFl, rapid TBUT)
  – Signs of corneal dystrophies (will be bilateral)
Recurrent Corneal Erosions

• Tx:
  – Acutely:
    • Lubrication**
    • Topical Ab (Polytrim QID, erythro or bacitracin ung)
    • Pain control:
      – Cycloplegic (Homatropine BID)
      • Muro 128 drops or ung
    • Bandage lens???
      – Alleviates pain, does not improve healing
  – After the epithelium heals (recalcitrant RCE’s):
    • Fresh Kote TID (15ml bottle $25)
    • Muro 128 ung qhs (3.5g tube $10)
    • Lotemax QID X 2 weeks, BID X 6 weeks
    • Doxycycline 20-50mg BID
      – Azasite BID (2.5ml bottle $78)

**Avoid chronic long-term AT ung**

Recurrent Corneal Erosions

• Surgical Tx:
  – Anterior stromal micropuncture
  – Debridement of epithelium with polishing of Bowman’s membrane with a diamond burr or excimer laser (PTK)

Eyelid abscess vs. Preseptal Cellulitis vs. Orbital Cellulitis

• Preseptal Cellulitis
  – Usually upper eyelid swelling
  – Pain, tenderness, redness
  – Usually caused by adjacent infection (hordeolum, dacryocystitis)

• Orbital Cellulitis
  – All the same signs of preseptal with
  – Proptosis
  – EOM restrictions/pain with eye movements
  – Pupillary involvement
  – Usually an extension from an ethmoid sinusitis

Case #2

Eyelid abscess vs. Preseptal Cellulitis vs. Orbital Cellulitis

• Preseptal Cellulitis
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• Orbital Cellulitis
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Case #3

Acanthamoeba keratitis
- History of CL wear w/ poor lens hygiene
- Often a history of hot tub/swimming pool/swimming in the river
- Symptoms:
  - Severe pain out of proportion to clinical picture
  - Redness & photophobia
  - All over the course of several weeks
- Signs:
  - Early -> Pseudodendrites
  - Late -> Ring-shaped stromal infiltrate

Fungal keratitis
- Often a history of vegetative trauma, CL wear
- H/O poor response to topical Ab’s
- Symptoms:
  - Pain, photophobia, tearing, FB sensation
    - Pain often less than what the clinical picture would indicate
- Signs:
  - Stromal infiltrate w/ a feathery border
  - Satellite lesions surrounding the primary infiltrate

Case #4

Scleritis
- Rare disorder of inflammation & necrosis centered on the sclera
- 30-60 year olds, female > male
- Bilateral 40-80% of time
- Pathophysiology is poorly understood
- Etiology
  - 50% of cases are idiopathic
  - 50% of cases are associated with systemic disease
    - Connective tissue diseases
      - RA most common
    - Infections
      - HSV, HSK, syphilis

Scleritis
- Types of Scleritis
  1. Diffuse anterior scleritis
  2. Nodular anterior scleritis
  3. Necrotizing anterior scleritis w/ inflammation
  4. Necrotizing anterior scleritis w/o inflammation (scleral malacia perforans)
  5. Posterior scleritis
Scleritis

• Symptoms
  – Severe, boring, deep eye pain*** (80%)
  – Can radiate to the forehead, brow, jaw
  – May awaken pt from sleep
  – Diffuse red eye
  – Photophobia
  – Tearing

• Signs
  – Sectoral or diffuse inflammation of conj, episcleral, and scleral vessels
  – Scleral vessels do not move at all and do not blanch w/ phenyl
  – Bluish hue to sclera***
  – Scleral nodules
  – Corneal changes (peripheral infiltrates/keratitis)

• Differential Diagnosis
  – Episcleritis
  – Uveitis

• Diagnosis
  – Clinical picture
  – If underlying systemic disease is not known, systemic workup is indicated (refer to PCP or internist)***
    • CBC
    • ANA/RF/HLA-B27
    • ESR
    • RPR/FTA-ABS
    • Fasting blood sugar
    • ACE
    • C-ANCA, P-ANCA

• Treatment – depends on severity and type
  – Oral NSAIDs
    • Indomethacin 25-50 mg TID
    • Ibuprofen 400-600 mg QID
    • Naproxen 250-500 mg BID
  – Oral Steroids
    • Prednisone 60-100 mg QD X 1 week with taper down to 20 mg QD over next 2-3 weeks, slow taper after that as well
  – Immunosuppressive therapy
    • Cyclophosphamide, methotrexate, cyclosporin

Case #5
Central Serous Chorioretinopathy (CSR)

- Demographics
  - 25-50 year old men, stressed/Type A personalities

- Symptoms
  - Unilateral, blurred vision
    - VA -> usually 20/20 – 20/80
  - Metamorphopsia

- Signs
  - Localized serous detachment of the neurosensory retina in the macula

Central Serous Chorioretinopathy

- DDx:
  - Optic disc pit
  - CNVM

Central Serous Chorioretinopathy

- Med associations:
  - Steroids
    - Nasal sprays, steroid creams, oral, injectable
  - Ephedra
    - Ephedrine & pseudoephedrine

- Treatment:
  - Observation/lifestyle change
  - D/C steroid if possible
  - Possible laser therapy

Case #6
**Plaquenil Toxicity**

- **Antimalerials:**
  - Chloroquine
  - Hydroxychloroquine (Plaquenil)
- **Now used for RA, SLE, Sjogren’s, etc.**

- **Toxicity risk is low, but…**
- **Lots of different screening recommendations have been proposed**

**Risk Factors:**
- **Cumulative dose**
  - 1000 gram cumulative dose for Plaquenil
  - 6.85 years to reach that
- **Daily dose**
- **Age**
- **Liver or kidney dysfunction**
- **Pre-existing retinal disease or maculopathy**

**Symptoms:**
- Asymptomatic early
- Paracentral visual field defects affecting reading
- Color vision changes

**Signs:**

**Progression of Plaquenil maculopathy - early**

**Progression of Plaquenil maculopathy - moderate**

**Progression of Plaquenil maculopathy - advanced**
Plaquenil Toxicity

• Recommended Screening Guidelines:
  1. Baseline exam within the first year of starting Plaquenil
     • Biomicroscopy exam, 10-2 VF, Fundus photos

     – After 5 years, annual screening exams
       • SD-OCT or
       • mfERG or
       • Fundus autofluorescence

Case #6

Fundus Autofluorescence & mfERG
Plaquenil Toxicity

- Tests not recommended for screening
  - Fundus photography
  - Time-domain OCT
  - FA
  - Full-field ERG
  - EOG
  - Color vision testing
  - Amsler grid

Plaquenil Toxicity

- Treatment:
  - No medical therapy is available to treat/cure the toxicity
  - D/C the med if possible
    - Work with the PCP

Pseudotumor Cerebri

- AKA
  - Idiopathic intracranial hypertension
- Elevated intracranial pressure
  - Not caused by tumor, infection, or obstruction of the ventricular system
  - Increased production vs. decreased absorption
- Etiology:
  - Idiopathic (young, obese females)
  - Medications
    - Oral contraceptives, Tetracyclines, too much vitamin A
  - Trauma

Pseudotumor Cerebri

- Symptoms:
  - HA’s (90%)
  - Visual disturbances (72%)
    - Transient visual obscurations (TVO’s)
  - Tinnitus (60%)
  - Diplopia (20%)
  - Blurred vision
  - Abnormal color vision
  - N&V

Pseudotumor Cerebri

- Signs
  - Papilledema – hallmark sign of PTC
    - Increased intracranial pressure -> slowing axonal transport -> accumulation of axonal contents in the NFL -> elevated ONH’s
    - Bilateral disc edema
    - Blurred disc margins
    - Obscurcation of blood vessels*
    - Hyperemia of the disc
    - Venous dilation
    - Peripapillary hemorrhages & CWS

Case #7

Pseudotumor Cerebri
Pseudotumor Cerebri

- Other signs
  - Enlarged blind spot
  - 6th nerve palsy
    - Tends to subside as treatment is effective

Pseudotumor Cerebri

- Diagnosis:
  - Clean MRI/MRV
  - Lumbar puncture
    - Elevated ICP > 250mmHg in an obese pt
      > 200mmHg in a non-obese pt
    - Normal CSF composition
  - No other neurological findings
    - Exception -> 6th nerve palsy
    - SVP
      - Yes -> not Pseudotumor
      - No -> ????

Pseudotumor Cerebri

- Treatment:
  - Weight Loss*
    - Papilledema resolution with weight loss of 6% of total body weight
  - Diamox (acetazolamide)
    - 500 mg Sequels BID-QID
    - Taper as the sx's stabilize
  - Lumbar-peritoneal shunt
  - Optic nerve sheath decompression

Case #8

Macular hole

- Unilateral, decreased vision
  - Often in 60-80 year old women
  - Anyone w/ a history of trauma
- Symptoms:
  - Decreased vision, metamorphopsia
    - 20/200 for full thickness holes
- Signs:
  - Red hole in the macula
  - (+) Watzke-Allen sign

Macular hole

- Stages
  - Stage 1a -> impending hole. Normal foveal depression with yellow spot/dot in fovea.
  - Stage 1b -> Abnormal foveal depression with yellow ring.
Macular hole

- Stages
  - Stage 2 -> Small full-thickness hole. 20/80 - 20/400.
  - Stage 3 -> Full-thickness hole w/ cuff of SRF. No PVD
  - Stage 4 -> Full-thickness hole with cuff of SRF, with complete PVD.

Macular Hole

- Treatment:
  - Stage 2 holes or beyond
  - Vision 20/40 or worse
  - How long has the hole been there???
  - Vitrectomy & membrane peel
  - Face down???

- Prognosis:
  - 20/40 or better in up to 65% of cases

Lamellar Macular hole

- “Partial thickness macular holes”
- Aborted macular holes

- “Upside down anvil” “anvil-like”
- VA -> usually 20/40 or better
- 4 characteristics
  1. Irregular foveal contour
  2. Break in inner fovea
  3. Intraretinal split
  4. Intact foveal photoreceptors

Pseudohole

- “False hole”
- Simulates macular hole w/o actual tissue dehiscence
- Full thickness retinal tissue is still present
  - Not an anvil

- VA
  - Usually 20/20 – 20/30 unless significant ERM is present