GOOD MORNING

July 22, 2014
A 5-year-old boy presents to the ER with a 5 day history of fever, bilateral conjunctivitis, cracked red lips, strawberry tongue, and swelling of the dorsal surfaces of his hands and feet. On exam, you identify unilateral non-tender cervical lymphadenopathy. Lab studies yield: elevated ESR and CRP with sterile pyuria.

Of the following, the MOST appropriate initial therapy for this child is:

A Dependent on presence or absence of coronary artery involvement

B High dose aspirin alone if coronary arteritis is absent

C IVIG and high dose aspirin irrespective of ECHO findings

D IVIG and low dose aspirin if ECHO shows absence of coronary arteritis

E IVIG if ECHO identifies dilated coronary arteries
OUR PATIENT’S COMPLAINT:
“LEFT EYE SWELLING”

What’s your differential?
CAUSES OF EYE SWELLING

**Noninfectious**
- Blunt trauma
- Tumor
- Local edema
- Allergies
- Insect bites
- Grave’s Disease

**Infectious**
- Localized
  - Conjunctivitis
  - Hordeolum
  - Chalazion
  - Dacryoadenitis
- Periorbital Infection
- Orbital Infection
- HSV
- Acute Sinusitis
- Abscess
- Cavernous sinus thrombosis
- Dental Abscess
OUR PATIENT’S HISTORY:
9YO FEMALE WITH LEFT EYE SWELLING

PMHx:
Asthma
Left Leg Fracture, 7yoa

Immunizations:
UTD

Mediations:
QVAR
Singular

Birth Hx:
Unknown

FamHx:
Negative
CAUSES OF EYE SWELLING

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PERIORBITAL VS ORBITAL INFECTIONS
ROUND 1: ANATOMY

Periorbital: Infection is **ANTERIOR** to orbital septum (eyelid and surrounding tissues)

Orbital: Infection is **POSTERIOR** to orbital septum
ROUND 2: EPIDEMIOLOGY

Periorbital Cellulitis
- Occurs in children <5 yo
- More common than orbital

Orbital Cellulitis
- Occurs in slightly older children (6-12 yr olds)
- Boys > Girls
ROUND 3: PATHOGENESIS

**Periorbital Cellulitis**

- Usually caused by extension of an external ocular infection or superficial break in skin
- Hematogenous dissemination from a portal of entry in the nasopharynx
- After local trauma, insect bites, animal bites, foreign bodies, viral URIs
- Bacteremic seeding is rare

**Orbital Cellulitis**

- Usually caused by extension of rhinosinusitis, URI, dental abscess, or hematogenous spread
- Can be due to post-op complications
- *Bacterial rhinosinusitis is most common cause*
## ROUND 4: MICROBIOLOGY

### Periorbital Cellulitis
- Hib (in those not fully immunized)
- Staph aureus
- Streptococcus pneumoniae
- Other Strep species
- Anaerobes

### Orbital Cellulitis
- Hib (in those not fully immunized)
- Staph aureus
- Strep pneumoniae
- Rhinosinusitis bugs: above, Moraxella,
ROUND 5: CLINICAL PRESENTATION

Periorbital Cellulitis
*Unilateral erythema, swelling, warmth, and tenderness of the eyelid

Orbital Cellulitis
*Unilateral erythema, swelling, warmth, and tenderness of the eyelid

Fever more common
OUR PATIENT’S EXAM:

Vitals: W 36.2kg T 101.3 P 115 R 26 BP 127/72

General: NAD, sitting comfortable

HEENT/Neuro: pupils equal and reactive to light bilaterally, EOMI intact with elicited pain, no proptosis/ptosis, TTP left eyelid, erythema, no drainage

CV: RRR

Resp: Clear Bilaterally

Abd: BSx4, soft, NTND

Ext: 2+ pulses x4, no edema

What does the patient have?
ROUND 6: EVALUATION

Periorbital Cellulitis

CLINICAL Diagnosis

+/- wound and blood cultures (if the patient appears toxic, has fever)

BUT...If in doubt...CT!

Orbital Cellulitis

CT: Shows diffuse fat infiltration, subperiostial abscess, and true orbital abscess

Blood Culture

Wound culture if possible
OUR PATIENT’S EVALUATION

13.2  80S13B1L3M
12.44  237  Blood Cx: NGx5 days
38.8  Resp Panel: Negative

Wound cx: light growth normal flora, no anaerobes
ROUND 7: TREATMENT

**Periorbital Cellulitis**
- Oral antibiotics if mild infection or nontoxic appearing
- IV antibiotics if toxic or failure of outpatient therapy
- Empiric coverage of Staph and Strep (PO-Augmentin, Clindamycin IV-Unasyn, Clindamycin)
- Improvement in 24-48 hours
- Length of treatment 7-10 days

**Orbital Cellulitis**
- First: IV antibiotics: good Gram + and – coverage (Clindamycin + 2nd or 3rd generation cephalosporin)
- Drainage/Surgery?
- Transition to oral after improvement (when ophthalmoplegia and blurry vision have resolved)
- Length of treatment 10-14 days
POTENTIAL COMPLICATIONS

- Recurrent periorbital infection - HSV/HIV, atypical mycobacteria
- Cavernous sinus thrombophlebitis
- Intracranial infections
- Subperiosteal abscess or orbital abscess*
- Brain abscess
- Optic Neuritis
- Retinal artery occlusion 2/2 pressure increase
- Loss of vision
• Recognize the difference between preseptal and orbital cellulitis
• Know the role that ethmoid sinus infections play in periorbital and orbital cellulitis
• Know the microbiology of orbital cellulitis
• Know the pathogenesis of orbital cellulitis
• Know the clinical manifestations of orbital cellulitis
• Know the laboratory tests for orbital cellulitis
• Know the treatment of orbital cellulitis
• Know the acute complications of orbital cellulitis
• Know the microbiology of periorbital (preseptal) cellulitis
• Know the pathogenesis of periorbital (preseptal) cellulitis
• Know the clinical manifestations of periorbital (preseptal) cellulitis
• Know the diagnostic approach for periorbital (preseptal) cellulitis
• Know the treatment of periorbital (preseptal) cellulitis
• Understand the role of imaging in distinguishing preseptal cellulitis from orbital cellulitis
HAVE A GREAT DAY!
NOON CONFERENCE:
DR. DESSELLE
“SHOCK”