Osteopathic Physicians and Surgeons of Oregon

Winter Conference

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OPS Winter Conference 2015

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OPSO Winter Conference

• Disclosure: none
Select Ophthalmology Topics in the Primary Care Setting

• Red Eyes/Conjunctivitis
• Decrease of Vision
Red Eye/Conjunctivitis

- Bacterial (other than GC)
- Gonococcal
- Herpes Simplex
- Viral (usually Adenoviral)
- Allergic
Bacterial Conjunctivitis

- Conjunctival injection, swelling, hemorrhage, foreign body sensation, purulent discharge, corneal ulceration
- Staphylococcus, Pneumococcus, Haemophilus (children)
- Usually do not culture, unless immuno-compromised or severe purulent discharge
Bacterial Conjunctivitis

• Treat with broad-spectrum topical antibiotic: Tobramycin, Ofloxacin, Gatifloxacin, Bacitracin. No steroid.

• Treat blepharitis with warm compresses/lid wipes to eyelids

• No contact lens wear

• f/u 3-5 days, unless corneal ulcer
Bacterial Conjunctivitis

- Haemophilus: treat with Augmentin, because of occasional otitis media, pneumonia, and meningitis
bacterial conjunctivitis
Pseudomonas conjunctivitis
Staphylococcal blepharitis
Blepharitis
Meibomian gland inflammation
Staphylococcal marginal infiltrates
Rosacea
Rosacea
Hordeolum (stye)
chalazion
chalazion
Preseptal cellulitis
Orbital cellulitis
Gonococcal Conjunctivitis

- CDC 2010: 700,000 new cases of N. gonorrhoeae infections in the US annually
- Hyperacute, severely symptomatic within 12-24 hours
- Sexually transmitted, through direct contact
- Mother to baby, through vaginal delivery
Gonococcal Conjunctivitis

- Conjunctival injection, swelling, and copious purulent discharge. Eyelid swelling, preauricular lymphadenopathy, corneal ulceration, perforation
- Gram stain and culture
- Start treatment if gram neg intracellular diplococci or high suspicion
Gonococcal Conjunctivitis

- Ceftriaxone 1g IM urgently
- IV for corneal ulceration/perforation
- Topical antibiotic
- Eye irrigation with saline
- Dual treatment for chlamydia with TCN: coinfection seen in 1/3 of patients
- Treat sex partner(s)
Gonococcal conjunctivitis
Gonococcal conjunctivitis
GC: Corneal ulcer with perforation
Herpes Simplex Conjunctivitis

- Usually HSV-1
- Primary ocular HSV vs recurrent disease – clinically indistinguishable
- About 1/3 world population infected
- Bilateral disease seen in about 10%
- History of cold sores, red eye, skin vesicles
Herpes Simplex Conjunctivitis

- Triggers for viral reactivation: sun exposure, illness, surgery
- Red eye, fbs, pain, burning, tearing, skin vesicles, preauricular lymphadenopathy
- Clinical diagnosis, as tests (ELISA, PCR, culture) have low sensitivity and significant cost
Herpes Simplex Conjunctivitis

- Antiviral therapy: Viroptic (Trifluridine, 1% solution). 9 times a day
- Zirgan (Gancyclovir, 0.15% gel), 5 times a day
- Antibiotic ointment over affected skin
- Follow up 3-5 days
HSV vesicles
HSV vesicles and conjunctivitis
HSV vesicles and blepharoconjunctivitis
HSV skin ulcer and blepharitis
HSV corneal dendrites
HSV corneal dendrites
HSV geographic ulcer
HSV corneal scars
HSV corneal scars
HSV disciform keratitis
Necrotizing HSV keratitis
HSV geographic ulcer
HZV involving V-1
HSV vesicles and blepharoconjunctivitis
HZV dendrites/pseudodendrites
HSV dendrites
Viral Conjunctivitis/EKC

- Usually mild; red eye(s), itching, burning, fbs, watery mucous discharge, recent history of upper respiratory infection or contact with someone with a “pink eye”
- Usually starts in one eye, with the other eye affected a few days later
- Symptoms worst days 3-5 after onset; resolves in 1-2 weeks without treatment
Viral Conjunctivitis/EKC

• Supportive treatment: hand hygiene, preservative-free artificial tears every 1-2 hours, cool compresses, vasoconstrictor if itching severe (Acular)
• Very contagious, up to 2-3 weeks from onset
Conjunctival follicles in EKC; Adenoviral serotypes 8, 11, and 19
Pseudomembrane in EKC
Conjunctival scarring in EKC
Symblepharon
Sub-epithelial infiltrates in EKC
Allergic Conjunctivitis (Hayfever)

- History of allergies; itching, watery discharge, eyelid and conjunctival redness and edema
- Clinical diagnosis; unknown efficacy with allergy testing
Allergic Conjunctivitis (Hayfever)

- Eliminate/avoid inciting agent(s)
- Cool compresses
- Artificial tears
- Topical vasoconstrictor/antihistamine
- Topical steroid
- Oral antihistamine
- Follow up 1-2 weeks if not better
Allergic conjunctivitis – type I reaction
Papillary conjunctivitis
Giant papillary conjunctivitis
Giant papillary conjunctivitis
Other Causes of Red Eyes

• Trichiasis: eyelashes scraping cornea
• Entropion: eyelid turning in
• Ectropion: eyelid turning out
Trichiasis
Entropion and Trichiasis of the lower eyelid
Ectropion
Other Causes of Red Eyes

• Subconjunctival hemorrhage: valsalva, trauma, hypertension, bleeding disorder
• Inflamed pterygium: excessive UV exposure
• Inflamed pinguecula: excessive UV exposure
Pterygium
Pinguecula
Other Causes of Red Eyes

- Dry eye syndrome: symptoms usually better with rest and/or use of artificial tears; can have systemic association such as Sjögren’s
- Contact lens-related problems
- Corneal foreign body
- Trauma
Other Causes of Red Eyes

- Uveitis: intraocular inflammation, pain, photophobia, reduced vision
- Scleritis: 50% systemic association
- Drug side effects, including preservatives such as benzalkonium chloride
- Angle-closure glaucoma: pain, loss of vision, nausea/vomiting
Decrease of Vision

- Transient visual loss (vision returns to normal within 24 hours, usually within 1 hour):
  - papilledema (bilateral)
  - amaurosis fugax (unilateral)
  - vertebrobasilar insufficiency (bilateral)
  - Migraine (with or without headache)
Scleritis
Decrease of Vision

- **Transient visual loss:**
  - Impending central retinal vein occlusion, ischemic optic neuropathy, ocular ischemic syndrome (carotid occlusive disease), glaucoma, sudden change in blood pressure, giant cell arteritis, CNS lesion
Decrease of Vision

• Visual loss longer than 24 hours:
  ᵃ Retinal artery or vein occlusion
  ᵃ Ischemic optic neuropathy
  ᵃ Diabetic retinopathy/vitreous hemorrhage
  ᵃ Retinal detachment
  ᵃ Acute angle closure glaucoma
  ᵃ Optic neuritis
Decrease of Vision

• Visual loss longer than 24 hours:
  • Corneal hydrops (keratoconus), corneal dystrophy, uveitis, cataract, open-angle glaucoma, macular degeneration, retinal dystrophy, refractive error, sudden realization of unilateral visual loss
Papilledema

- Bilateral optic disc swelling due to increased intracranial pressure
- Episodic, transient, bilateral visual loss lasting seconds, visual field defects, headache, usually triggered by change in posture; double vision from 6th nerve palsy
- Visual acuity usually unchanged
Papilledema

- Etiology: brain tumors, hydrocephalus, intracranial hemorrhage, intracranial infections, pseudotumor cerebri
Pseudotumor Cerebri

- Idiopathic, usually in obese women, but can be seen in pregnancy, medications (oral contraceptives, tetracycline, nalidixic acid, vitamin A, steroid withdrawal)
- Bilateral optic disc swelling
- High opening pressure with LP (normal is 200-250 mm H2O)
Pseudotumor Cerebri

• Normal brain MRI
• Normal CSF composition
• Visual field test: any pattern of defect, but frequently enlarged blind spot and generalized constriction
• Diplopia due to nonlocalized cranial nerve involvement, frequently the 6th nerve
Pseudotumor Cerebri

- Treatment:
- Weight loss
- Diamox up to 500 mg qid (monitor potassium)
- Optic nerve sheath decompression if vision is threatened
- Lumboperitoneal shunt if intractable headache
Normal optic disc
Optic disc edema
Optic disc edema
Optic disc edema and splinter hemorrhage
Amaurosis Fugax

• Monocular visual loss, usually lasting minutes, but may be up to 1-2 hours, before returning to baseline
• Retinal exam may show an embolus within an arteriole
Amaurosis Fugax

• Most common etiology is embolus from the carotid artery (Hollenhorst plaque); but also from the heart or aorta; vascular insufficiency of any cause, hypercoagulable state
Amaurosis Fugax

- Immediate ESR and CRP when GCA is suspected
- Carotid and cardiac work-up
Amaurosis Fugax

- Treatment:
  - Aspirin
  - Address all vascular risk factors
  - Carotid Endarterectomy
Branch retinal artery occlusion
Branch retinal artery occlusion

- Due to embolization (more common; cholesterol, platelet-fibrin, calcific emboli) and thrombosis
- Related to vascular risk factors
- No effective treatment
Central retinal artery occlusion
Central Retinal Artery Occlusion

- Atherosclerosis-related thrombosis
- Emboli can be seen in 20%
- No effective treatment
- Giant cell arteritis accounts for 1-2% of CRAO; if suspected, prompt steroid therapy because the other eye can become affected within hours to days
- Poor prognosis
Branch retinal vein occlusion

- Commonly occurs at an A-V crossing: thickening of the arterial wall compresses the vein, resulting in turbulent blood flow, endothelial damage, and thrombosis
- Degree of visual impairment varies
- Risk factors: hypertension, diabetes, arteriosclerosis, smoking
- 50-60% have driving vision after 1 year
Branch retinal vein occlusion
Central retinal vein occlusion
Central retinal vein occlusion

• thrombosis of CRV due to impingement of an atherosclerotic CRA
• Main risk factors similar to BRVO; oral contraceptives and diuretics implicated in younger patients
• Visual recovery depends on presenting visual acuity and level of capillary nonperfusion
Central retinal vein occlusion
Diabetic retinopathy

- DCCT and WESDR studies showed intensive glycemic control reduces incidence and progression of retinopathy in IDDM and NIDDM patients
- Prevalence of retinopathy increases with duration of diabetes: after 20 years of DM, 99% of IDDM patients and 60% of NIDDM patients have retinopathy
Incidence of diabetic retinopathy increases over time
Onset of retinopathy precedes diagnosis of type 2 diabetes
Normal retinal fundus
Non-proliferative diabetic retinopathy
Non-proliferative diabetic retinopathy
Diabetic papillitis and retinopathy
Proliferative diabetic retinopathy
Proliferative diabetic retinopathy
Vitreous hemorrhage
Traction retinal detachment in proliferative diabetic retinopathy
Traction retinal detachment in proliferative diabetic retinopathy
<table>
<thead>
<tr>
<th>AGE OF ONSET OF DM</th>
<th>RECOMMENDED TIME OF FIRST EYE EXAM</th>
<th>ROUTINE MINIMUM FOLLOW-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–30</td>
<td>Within 5 years of diagnosis</td>
<td>Annually</td>
</tr>
<tr>
<td>31 and older</td>
<td>Upon diagnosis</td>
<td>Annually</td>
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<tr>
<td>Pregnancy</td>
<td>Before conception or early in first trimester</td>
<td>Every 3 months or at discretion of ophthalmologist</td>
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References

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