The Eye in Dermatologic Disease

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Course Goals
- To provide clinically relevant information on dermatologic disease, emphasizing those frequently seen in optometry.
- Understanding rosacea
- Infectious Derm
- Neoplastic Derm
- Case examples

Skin is...
- A barrier to protect the body from the environment
- A temperature regulator
- An immune organ to prevent and combat infections
- A sensory organ to detect temperature, touch, pain, vibration, etc.
- Working to renew itself every second

Layers of Skin
- Epidermis
  - Outermost layer
  - Consists of 2 main cell types: keratinocytes and melanocytes
  - Produced in the basal layer
- Protective outer layer called the stratum corneum
- Contains no blood vessels

Skin is a

Layers of Skin

- Epidermis
- Stratum Corneum
- Dermis
- Subcutaneous tissue

Skin is a barrier to protect the body from the environment, a temperature regulator, an immune organ to prevent and combat infections, a sensory organ to detect temperature, touch, pain, vibration, etc., and working to renew itself every second.
Epidermis

- Protects
- Produces K-cytes and M-cytes

Layers of Skin

- **Dermis**
  - Thicker layer of fibrous connective tissue
  - Supports and binds the epidermis to the subcutaneous tissue
  - Produces substances that lend structure and support:
    - collagen
    - elastin
    - reticulin

Dermis

- The dermis provides nutrition to itself and the epidermis
- The dermis contains:
  - Nerves
  - Blood
  - lymph vessels
  - Sebaceous glands

Layers of Skin

- **Hypodermis**
  - Subcutaneous layer
  - Comprised of loose connective tissue
  - Contains variable amounts of adipose

Glossary of Dermatology Terms

- **Cyst**
  - Liquid inside epithelial wall
- **Papule**
  - Small, solid elevated skin
- **Pustule**
  - Elevated, pus-filled lesion
- **Plaque**
  - Palpable, plateau-like lesion

Glossary of Dermatology Terms

- **Scale**
  - Flaking of keratin
- **Ulcer**
  - Skin loss that involves dermis
- **Vesicle**
  - Blistar-like elevation w/clear fluid
Case: 54-year-old White Male

- 3-week history of irritation and redness at lid margins OU. Medical history was positive for rosacea, diagnosed 3 years earlier.
- He was using topical metronidazole gel for associated skin lesions.
- VA was 20/20 OD and OS.
- Biomicroscopy revealed mild blepharitis and significant meibomian gland dysfunction (meibomitis) OU. Palpebral conjunctival hyperemia was also present OU.
- Grade 1 punctate epithelial keratopathy (PEK) was present on the inferior aspect of each cornea, without infiltrate or neovascularization.

What is your assessment?

Plan?

Introduction to Rosacea

- What is Rosacea?
  - A chronic dermatologic condition that affects the convexities of the central aspect of the face, including ocular tissues.
  - Characterized by symptoms of **facial flushing** and a spectrum of clinical signs, including erythema, telangiectasia, coarseness of skin, and an inflammatory papulopustular eruption resembling acne.

54-year-old White Male

Photo Courtesy of A. Kabat

Rosacea Review

- Goals
  - Review symptoms, signs, pathophysiology, and stages of rosacea.
  - Discuss diagnosis and management.
  - Discuss symptoms, signs, pathophysiology, diagnosis, and management of ocular rosacea.
  - Highlight new research in the areas of rosacea triggers, classification, and treatments.

Symptoms and Signs

Facial flushing

Bumps (papules) and/or pimples (pustules)

Phyma=excess tissue (rhinophyma)

Rosacea.org
Background

- Rosacea is characterized by exacerbations and remissions.
- Treatment of rosacea empirically targets signs and symptoms because investigators do not precisely understand its pathophysiology.
- Long-term therapy is usually required in order to control signs and symptoms.

Who Gets Rosacea?

- Range of occurrence
  - In U.S., 1 in 20 adults exhibits dermatologic features
    - Of these, up to 60% experience ocular complications.
  - 14 million Americans
  - More common in fair-skinned, under-reported in races with increased skin pigmentation.
  - Peak incidence in 4th to 7th decades.

Will your children get rosacea?

- Once thought to be rare, rosacea in childhood and adolescence is being recognized more frequently.
- Doan reported 80 subject case series.
- 3:1 F:M
- Heredity a factor.
- Ocular rosacea in children may be particularly aggressive.
- Childhood hordeola associated w/adult rosacea.
What causes rosacea?

Potential Causes of Rosacea
- Precise pathophysiology is unknown
- 2 primary etiologic components:
  - Vascular
  - Inflammatory
- Vascular Component
  - Early signs are cutaneous vascular dilatations
    - *Sunlight is a major trigger* for small vessel damage
    - May explain low incidence in darker races

Etiology of Rosacea
- Inflammatory Component
  - Later stages include papules, pustules, rhinophyma (bulbous nose), ocular rosacea
  - Fundamental abnormality in the *sebaceous glands*
  - Type-4 hypersensitivity, Demodex mites, H. pylori have all been hypothesized as inflammatory causes.

Inflammation
- Proposed inflammatory model

Recent Research Findings
- Cathelicidins are anti-microbial molecules produced as part of immune system.
  - More abundant in rosacea patients.
  - May cause inflammatory papules and pustules as well flushing and telangiectasia.

Recognizing Rosacea: Stages

Prerosacea
- Flushing
- Recurrent episodes of facial redness
- Commonly triggered by sunlight, alcohol, tobacco, spicy or hot food/beverages, stress
- Erythema
- Persistent midfacial redness
  - Nose, chin, cheeks, central forehead

Stage 1
- Prerosacea plus:
  - Telangiectasias – permanent dilation of small BVs
  - Prominent sebaceous glands

Stage 2
- Stage 1 plus:
  - Edema
  - Papules/Pustules
  - Enlarged pores

Stage 3
- Stage 2 plus:
  - Tissue hyperplasia (phymas)
  - Rhinophyma-hypertrophy of sebaceous glands of the nose

Recognizing Rosacea

Early signs are vascular
- Flushing, erythema, and telangiectasias
- Occur in an axial facial distribution (forehead, cheeks, nose, chin)
  - “butterfly” pattern similar to SLE
- An overall oily appearance to the skin

Stage 1
- Prerosacea
  - Flushing
  - Commonly triggered by sunlight, alcohol, tobacco, spicy or hot food/beverages, stress
  - Erythema
  - Persistent midfacial redness
    - Nose, chin, cheeks, central forehead

Making the Diagnosis

Rosacea is a clinical diagnosis that does not require labs or pathology specimens
Differential Diagnoses
- Acne vulgaris
- Adult
- Drug-induced
- Contact dermatitis
- Seborrheic dermatitis
- Eczema
- Sarcoidosis
- Lupus: SLE, subacute, chronic
- Perioral dermatitis
- Drug-induced photosensitivity reaction (Tetracyclines)

Questions and Comments?
Rosacea “Scorecard” for Clinicians

Order at http://www.rosacea.org/physicians/scoreindex.html

Subtypes of Rosacea

- There are 4 different subtypes:
  - Erythematotelangiectatic rosacea
  - Papulopustular rosacea
  - Phymatous rosacea
  - Ocular rosacea

- Many patients have characteristics of more than one subtype!

Ocular Rosacea

- Ocular signs and symptoms may occur before skin manifestations in up to 20%!
- Main symptoms are foreign-body sensation, burning and stinging.
- Etiology is inflammation from Staphlococcus exotoxins.
- Eye signs are secondary to the inflammatory skin condition.
National Rosacea Society Survey
- 1,780 rosacea patients reporting ocular symptoms
- 95% said eyes felt dry, gritty, or irritated.
- Of these, only 28% reported being formally diagnosed with ocular rosacea.

Ocular Surface Inflammatory Disease is the main complication *
- Signs include dry eye, telangiectasia of lid margins, conjunctivitis, blepharitis, recurrent chalazia and hordeola, meibomitis (MGD), keratitis.

Meibomitis
- Inflammation of the meibomian orifices
- When severe, presents as a thick, viscous plugging of material "toothpaste"
- Increases tear evaporation
- Increases tear osmolarity

In Rosacea, MGD is often chronic and unrelenting.
**Mixed Ant. Blepharitis and MGD**

- Local infection of meibomian glands or glands of Zeiss or Moll
- Inflamed, painful area
- A localized, external lesion or a deeper, less-circumscribed internal
- Staph species are usual suspects
- Chalazia also common in rosacea

**Hordeola**

- Local infection of meibomian glands or glands of Zeiss or Moll
- Inflamed, painful area
- A localized, external lesion or a deeper, less-circumscribed internal
- Staph species are usual suspects
- Chalazia also common in rosacea

**Ocular Rosacea**

- Conjunctivitis
- Usually chronic, bacterial
- Diffuse hyperemia, lid signs of bleph/MGD
- **Pseudomembrane** or even true membrane
  - Fibrinous inflammatory exudate
  - Secreted by invading microorganisms or ocular tissues
  - Permeates the superficial layers of conjunctival epithelium
- Severe, active rosacea blepharo-keratoconjunctivitis
- Note lid inflammation, interpalpebral conj. hyperemia, corneal vascularization and infiltrates.
- Conjunctival pseudomembrane

**Ocular Rosacea**

- Corneal findings:
  - Early
    - PEK in inferior 1/3
  - Moderate
    - Marginal infiltrate (usually sterile)
  - Advanced
  - Neovascularization → opacification ↔
  - Thinning → ulceration → perforation

**Chronic Rosacea Keratopathy**

- Punctate corneal epithelial breakdown and macro-ulceration.
- Neovascularization → opacification
Managing the Symptoms and Emotions of Rosacea

- Therapeutic strategy depends upon Subtype and Stage (severity) of disease.
- Medical therapy
  - Tetracyclines: decrease bacterial lipase to improve solubility of sebaceous gland secretions
  - Doxycycline 100 mg bid x 6 wk, then qd

Tetracyclines

- When longer-term therapy is needed:
  - Periostat (doxycycline hyclate)
    - 20 mg tab
    - Qd or bid
    - Initially developed for periodontitis
    - Now available as generic!
  - Oracea (doxycycline monohydrate)

Oracea

- FDA approved in 4/2006 Oracea (doxycycline, CollaGenex Pharmaceuticals) to treat inflammatory rosacea in adults.
  - 1st drug approved for Papulopustular Rosacea only
  - Contains 30 mg of immediate-release medication and 10 mg delayed-release medication in capsule
  - Exhibits anti-inflammatory and not antimicrobial properties, so no drug resistance issues

Oracea: The Evidence

- Results of Phase 4 Study Evaluating Effects of Oracea in Combo w/ MetroGel(R) (metronidazole gel), 1%
  - Presented at Annual Meeting of the AAD
- Patients in the Oracea + MetroGel Group Experienced a Mean Reduction of 13.9 Inflammatory Lesions Compared to 8.5 in the Placebo + MetroGel Group
- Oracea has not yet been studied specifically for ocular rosacea.
Special Cautions

- When are tetracyclines contraindicated?
  - Children
  - Pregnant/nursing mothers
  - Poor kidney function
- Side effects/complications of tetracyclines
  - GI upset
  - Photosensitivity
  - Pseudotumor cerebri*
- Antacids, dairy make drug less effective
- Rx. Erythromycin as an alternative

SIDE EFFECTS

DOXYCYCLINE

- Side effects
  - Photosensitivity
  - Pseudotumor cerebri, blood dyscrasias
  - Decreased bone growth, teeth discoloration
- Contraindications
  - Under age 8
  - Pregnancy
  - Nursing
  - Liver dysfunction

DOXYCYCLINE

- Pregnancy / nursing
  - Category D
  - Positive evidence of risk to fetus
  - Does enter breast milk
- Children
  - Okay over age 8 (0.5-2 mg/kg/day up to 200 mg)
- Miscellaneous information
  - Take with or without meals
    - With food may reduce absorption by 20%
    - Without food may cause GI irritation
  - Oral contraceptives may not work
  - Take all that is prescribed even if feel better
  - Iron, multivitamins, Ca, antacids, laxatives within 2 hours may make less effective

DOXYCYCLINE

- ALTERNATIVES (CHECK DOSING / SIDE EFFECTS)
  - ERYTHROMYCIN
  - TETRACYCLINE / MINOCYCLINE
    - SAME MECHANISM, USE CAUTION

Questions and Comments?
**Medical Therapy**
- Metronidazole- antimicrobial, anti-inflammatory, and immunosuppressive properties
  - Oral and Topical forms (use on lids/adnexa?)
    - 75%-1% gel, cream
    - Effective for inflammatory lesions, not telangiectasias
- Corticosteroid lotion, such as Desonide
- Retinoids- Vitamin A derivatives, suppress sebum production
  - For severe or recurrent rosacea
    - isotretinoin 0.5-1 mg/kg/day (Accutane)
- H-2 Antagonists- combat H. pylori

**AzA Gel**
- 15% azelaic acid gel
- Apply bid for moderate papulopustular form.

**Treatment of Rosacea**
- Surgical therapy
  - Pulsed-dye laser for Subtype 1 (pictured below)
  - Surgical Ablation
  - Electrocautery
  - CO-2 laser (removes hypertrophied tissue to reshape nose)

**Photodynamic Therapy**
- Step 1: Application of Levulan Kerastick Topical Solution (5-aminolevulinic acid, 20%)
- Step 2: BLU-U Blue Light Photodynamic Therapy Illuminator (BLU-U)

**Photodynamic Therapy**
- Intense Pulsed Light
  - High-intensity pulses of a broad wavelength (515-1200 nm) of light deliver energy to the skin.
  - Off-label, used to treat dispigmentation.
  - Constricts BVs, generates heat
  - Liquifies meibomian secretions
New Therapy: Intense Pulsed Light (IPL)

Treating the Person
- Educate and Counsel
  - Avoid trigger foods, sunlight, sunscreen
  - Reassurance, self-esteem
  - Depression
  - Anxiety
  - Stress management

Ocular Rosacea Treatments

Treatment may include:
- Lid hygiene
  - baby shampoo or pre-moistened pads
  - hot compress
  - saline soaks
- Lubricate: AT 1 gt qid-q2h (Soothe XP, Systane Bal)
- Topical meds
  - "light" steroids: beware of rebound
  - AB, AB/Steroid combos
  - Restasis® (cyclosporine ophthalmic emulsion 0.05%)

Ocular Rosacea Management

Treatment may include:
- Omega-3 supplements
- Systemic meds: doxycycline
- Co-management w/PCP
- Dermatology consult for systemic management
- Surgical treatment for severe corneal complications
**Combination Therapy**

- **Clearvue-M Kit**
  - 50mg minocycline tabs
  - SteriLid
  - Sterile and tea tree oil kill Demodex

**Meibomitis (MGD)**
- Mild-moderate
  - Warm compress, saline scrubs, in-office expression
- Moderate
  - Add Topical AB/steroid
  - 1gt qid x 1-2 wk
- Severe
  - Add po Doxycycline
  - 100 mg po bid x 4-6 wks, then taper slowly as you would a steroid b/c this is inflammatory Dx.
  - May need maintenance dose (20-50 mg qd) long-term

**Ocular Rosacea Treatment**

- **AzaSite** modifies MG secretions
  - Azithromycin 1% sol
  - 17 patients
  - qd dosing x 4 wks
  - Structure and behavior of MG secretions altered toward that of normal secretions
  - Avg TBUT improved from 6.0 to 10.27 sec
  - Subjective improvement
  - Foulks, 2009
  - In MGD, AzaSite + WC outperformed WC alone.

**Meibomian Disease**
- Altered MG secretions cause abnormal tear film lipids.
- This results in inflammation, irritation.

**Ophthalmic Azithromycin**
- Azithromycin 1% sol
- Macrolide AB
- Broad-spectrum
- Anti-inflammatory
- Bid dosing
- Approved for children >1 y/o
- Approved for bact conj
- In trials for MGD, DES outperformed WC alone.

**MILD-MODERATE INFLAMMATION**
- Loteprednol etabonate 0.5% (Lotemax)
  - Ophthalmic suspension
  - Effective against moderate ocular inflammation
  - Effective in treating post-operative inflammation
  - Relatively small tendency to increase IOP
  - Frequently used “off-label” in DES
  - Short-term therapy in ocular rosacea
New Steroid

- Difluprednate 0.05% emulsion
- No shaking
- Less frequent dosing
- Derived from prednisolone
- FDA indication for post-Sx. inflammation, pain

Steroid-Antibiotic Combinations

- These medications are steroids and therefore cause the same side effects
- Primary use is for control of inflammation
- Provides antibacterial prophylaxis while treating the ocular inflammation
- Examples:
  - Adenoviral KC w/sig. epi staining
  - Marginal K infiltrate

Ocular Rosacea Treatment

- Blepharitis
  - Mild-moderate
    - Amenable to warm compress, saline scrubs
    - Baby shampoo scrubs
    - 2-3 wks max
  - Moderate
    - Add topical AB/steroid Ung
    - hs x 1-2 wk
  - Severe
    - Increase AB/steroid Ung to bid
    - Add po Doxycycline
    - 100 mg po bid x 4wks, then taper

Ocular Rosacea Treatment

- External Hordeolum
  - Warm compress, saline scrubs, in-office expression
  - Topical AB or AB/steroid
    - 1gt qid x 1-2 wk
- Internal Hordeolum
  - Add broad-spectrum po AB
    - Effective against staph/strep
    - Doxycycline
    - 100 mg po bid x 7-10 days
    - Or, Cephalexin
    - 250 mg po qid x 7-10 days

Ocular Rosacea Treatment

- Bacterial Conjunctivitis
  - Topical AB or AB/steroid
    - 1gt qid x 7-10 days
    - AB/steroid combo best if marked inflammation present
    - Tobradex (tobramycin/dexameth) or Zylet (tobramycin/dipropionate)
  - Moderate/severe presentation may require topical fluoroquinolone 1gt q1-2h for 2-3 days, then, reduce to qid.
    - Moxifloxacin (Vigamox) or gatifloxacin (Zymar)

Ophthalmic Azithromycin:

- AzaSite® pairs DuraSite® drug delivery vehicle with azithromycin (1%)
  - Enhances bioavailability
- Has both antibiotic and anti-inflammatory properties
**New Fluorquinolone**
- Besifloxacin .6% susp
- FDA indication for bact. conj.
- Durasite vehicle
  - Lengthens ocular surface contact time

**54-year-old White Male**

**Back to our case...**
- 54-year-old White Male
- Based upon medical history and appearance, a diagnosis of ocular rosacea was established.
- We initiated treatment with warm compresses, non-preserved artificial tears and oral doxycycline (100 mg BID for six weeks, then slowly tapered).
- The patient was counseled on avoiding triggers, such as sunlight, spicy foods, hot beverages and stress.

**Ocular Rosacea Management**

**Back to our case...**
- A follow-up examination 8 weeks later showed near-complete resolution of signs and symptoms.
- The patient has regular dermatology visits and remains on Oracea and topical skin therapy.

**What’s New?**
- **TobraDex ST** (tobramycin/dexamethasone ophthalmic suspension) 0.3%/0.05%.
- Indicated for inflammatory ocular conditions for which a corticosteroid is indicated and where bacterial infection or risk for infection exists.
- Formulated with a new vehicle to enhance bioavailability to targeted tissues.
- Useful for blepharitis/MGD
Dry conditions on ocular surface stimulate sensory nerves, innervating cornea and conjunctiva. These stimulate secretomotor nerves, which trigger tear secretion by lacrimal glands. This feedback system maintains a stable, refreshed tear film over the ocular surface.

Theories for Pathogenesis of DES in Rosacea
- Evaporative loss from MGD
- Increased IL-1 alpha concentration in tears of rosacea patients
- Greater matrix metalloproteinase activity
- Tetracyclines have an inhibitory effect on both of these factors (IL-1, MPP)
DES in Rosacea

- Refractive Surgery may trigger or exacerbate DES in Rosacea patients.

Dry Eye Therapy in Rosacea

- Is there a strategy?
  - Address blepharitis, meibomitis if also present
  - Supportive therapy for mild symptoms/signs
    - Humidifier at home or in work environment
    - Ocular surface treatment with tear supplements up to q2h
  - Nutritional Support
    - Omega-3 fatty acids (salmon, sardines)
    - Flaxseed oil
    - Water intake

Soothe XP Emollient

- Restoryl
  - Meta-stable emulsion
  - Increases lipid layer
  - Highly purified mineral oils
    - Drakeol-15
    - Drakeol-35
  - Polymethylacrylamidoguanide-preserved

WHAT’S NEW?

- Systane Balance (Alcon)
  - For evaporative dry eye secondary to MGD
  - Enhancement of lipid layer
  - Propylene Glycol 0.6%
  - Mineral oils
  - Oil in water emulsion
  - LipiTech System and demulcent

Omega-3s

- Decrease inflammation
- Decrease apoptosis
- Increase tear secretion
**Dry Eye Therapy in Rosacea**

- For moderate symptoms/signs (or if no improvement w/supportive Tx.)
  - Add topical anti-inflammatory therapy
    - Restasis® (cyclosporine 0.05% ophthalmic emulsion)
    - “light” topical steroids trial
      - Flarex (FML)
      - Lotemax
      - Pred-mild

**Dry Eye Treatment**

- Cyclosporine 0.05% (Restasis)
  - Ophthalmic emulsion
  - Provides anti-inflammatory effects for ocular surface tissues and lacrimal glands
  - Requires 3-4 months of continuous use to reach clinically significant effects and up to 6 months to achieve full therapeutic effects

**Lissamine Green Staining**

**Dry Eye Therapy in Rosacea**

- If no improvement after adding topical anti-inflammatory agents:
  - **po Tetracyclines prescribed**
    - Earlier than for non-rosacea DES*
  - Dosage and duration similar to that for other subtypes
  - Remember to taper or switch to Oracea
  - Lacrimal/punctal occlusion
    - Only after inflammation is controlled (usually 4 wks after starting anti-inflammatory therapy)
    - Plugs or cautery

**Dry Eye Therapy in Rosacea**

- If still no improvement or patient initially presents with severe symptoms/signs (4+ PEK, erosions, conjunctival scarring):
  - **po Tetracyclines**
  - Corneal subspecialty consult
    - **po Cyclosporine**
    - Tarsorrhaphy
    - Amniotic membrane Tx

**Review of Key Points**

- Skin is a protective, regulatory, immune, and sensory organ.
- Rosacea is a chronic condition with exacerbations and remissions.
  - A number of exogenous factors can trigger an acute episode.
- Ocular Rosacea is a distinct subtype with **surface inflammatory disease** as its most common clinical feature.
Now what?

- The Challenge:
- Effectively diagnose and manage/co-manage acute and chronic features of rosacea.
- Effectively diagnose and treat ocular rosacea.
- Communicate and coordinate care with the appropriate physician (primary care and/or dermatologist) in a timely and effective manner, resulting in improved patient outcomes.

Questions and Comments?

Resources for Patients and Doctors

- National Rosacea Society http://www.rosacea.org/
- Pizzimenti JJ, Pellino CJ. Soothe the burn of ocular rosacea. Review of Optometry, 2009

The Lid and Adnexa

Types of Dermatologic Dx.

- Allergic: contact dermatitis
- Inflammatory: rosacea
- Infectious: HSV, HZV
- Neoplastic
  - Benign
  - Pre-malignant
  - Malignant

Identifying Signs of Lid and Adnexa Disease

- Signs of allergic disease
- Signs of atopic disease
- Signs of other disease
  - Infectious
  - Inflammatory
  - Structural
**Case: History**

- A healthy 38 y/o WF presented with a tender patch of small vesicles on the lower left eyelid and surrounding skin.
- Itch, redness
- Sudden onset, 2 day duration
- May have rubbed lids after yard work.

**Subjective**

- Ocular History: unremarkable
- Medical History: unremarkable
- Family Ocular History: + AMD (mother)
- Allergies: none known
- Topical Meds: artificial tears

**Objective Findings**

- VA: c Rx OD 20/25 OS 20/30 PH 20/25
- Pupils: (-)APD, PERRLA
- EOMS: Smooth / Full
- IOP: 12 mm Hg OD, 14 mmHg OS
- CF: Full OD/OS
- **Anterior Chamber, Lens, Vitreous**: Clear OD/OS

**Day 1**

**Biomicroscopy**

- Diffuse pustules with erythemous base on inferior lid OS
- Grade 1 follicles lower palpebral conjunctiva OU
- Cornea uninvolved

**Assessment**

**Differential Diagnosis**

- Atopic Contact Blepharitis/Dermatitis
- Herpes Simplex Blepharitis/Dermatitis
- Herpes Zoster
**Differential Diagnosis**

- Atopic Contact Dermatitis
- Herpes Zoster

**Nail Varnish Allergy**

**Differential Diagnosis**

- Herpes Simplex Blepharitis/Dermatitis

**Initial Management**

- Tobradex
  - tobramycin 0.3%/dexamethasone 0.1% ophthalmic ointment
  - Apply lightly to affected tissues bid
- Benadryl (diphenhydramine) at bedtime
- Cool compresses prn
- Recheck in 2 days

**Day 3- Initial Follow-up**

- Preseptal Cellulitis
- 2+ Follicular Conjunctivitis
**Re-assessment**
- Herpes Simplex
- Blepharodermatitis
- Conjunctivitis
- Associated Preseptal Cellulitis
- Cornea uninvolved

**New Plan**
- D/C Tobradex ung
- Start Viroptic ( trifluridine 1%) 1 gt OS 5X/d
- Oral Antiviral
  - Acyclovir
    - 400mg 5x/d x 1wk

**Initial HSV Course**
- **Day 4**
  - Pustular Blepharitis

**Initial HSV Course**
- **Day 7**
- **Day 15**

**Day 21- Resolution**

**3 Months Later …**
- Recurrent Vesicular Blepharitis
  - **Day 1**
Fool me once ...

- Assessment
  - Recurrent HSV blepharitis and dermatitis
  - Test for immunocompromise (HIV)?
- Plan
  - Treatment of skin lesions with topical Denavir (penciclovir) cream.
  - Trifluridine (Viroptic) 1% gtt qid to protect cornea.

S/P Treatment With Penciclovir

Day 5

Pharmacology

- Penciclovir 1%
- Used to treat recurrent herpes simplex infections of the face and lips in adults with healthy immune systems.
- Prevents viral replication by interfering with activity of enzymes in DNA synthesis.

Penciclovir

C10H15N5O3

Dosage And Administration

- Apply Denavir every 2 hours while awake for 4 days.
- Start treatment during HSV p __________ or when lesions first appear. **
- Not to be used on mucous membranes.
- Our patient was instructed to use Denavir on skin only, not on lid margins or in eye.

Drug Efficacy

- Penciclovir cream has not been directly compared to acyclovir ung in controlled studies.
- Controlled studies have shown penciclovir but not acyclovir ung to be more effective than a placebo for recurrent HSV skin lesions.
Brief Discussion of HSV

- The most common virus in humans**
  - O________ infection: generally HSV-1
  - Genital infection: generally HSV-2
- Transmission occurs by d____ c______
  - Saliva or mouth contact
  - Contact with active lesions
- 1 week incubation period

Recurrent Infection

- Occurs in 20-25% of HSV infections
- Recurrence risk increases after 2 or more presentations
- Site of recurrence may be different than the site of primary infection.
  - e.g. initial keratitis re-occurs as blepharitis
  - e.g. initial cold sore re-occurs as keratitis

Recurrent Infection

- Re-activating factors:
  ______________________
  ______________________
  ______________________
  ______________________
  ______________________
  ______________________
  ______________________

Herpetic Eye Disease Quiz

- HEDS II investigators found that low-dose oral acyclovir:
  a. was ineffective in preventing recurrent HSV eye infection
  b. reduced by 74% the probability that any form of HSV eye dx. would return
  c. reduced by 41% the probability that any form of HSV eye dx. would return
Take Home Points

- HSV blepharitis can masquerade as other atopic and infectious entities.
- Clinicians are able to offer a new therapeutic option that may hasten symptomatic relief.

CASE #2

- History
  - A 64 y/o white female presented w/complaints of a slow-growing “bump” on medial aspect of LL OS.
  - Recent ulceration and bleeding of lesion.
  - Patient is a FL native, loves sailing.
  - Burns easily, tans poorly

Ulcerated Nodule

- OS Lower lid

Assessment

- Differential Diagnoses
  - Basal Cell Carcinoma (BCC) *
  - Squamous Cell Carcinoma (SCC)
  - Keratoacanthoma
  - Actinic Keratosis

Nodular-ulcerative BCC

- “Pearly” borders, ulcerated center

Squamous Cell Carcinoma

- Note NV pattern
  - Fast-changing, irregular, destroys lashes
  - More likely to Mets than BCC
SCC with Anterior Orbit Invasion

Conjunctiva Squamous Cell

Keratoacanthoma

- Clinical features:
  - Abrupt onset
  - Dome shape
  - Ulcerated w/keratin
  - Rapid growth (wks-months)
  - Spontaneous involution (4-6 mon)
  - Can resemble BCC
    - pearly borders

Actinic Keratosis

- Pre-cancerous (malignant)
- Note flat, scaly, brown/gray appearance
- Slow-changing, r/o SCC, Melanoma
- Tx by excision or Efudex (5-fluorouracil)

Actinic Keratosis

Plan

- Photograph and measure
- Treated as nodular-ulcerative BCC
- Referral to oculoplastics for excisional biopsy
- A diagnosis of BCC was confirmed
- RTC q 3 mon
- Limit sun exposure: visor, UV shield
Discussion

- BCC
  - 80-90% of all malignant lid tumors
  - Most common form of skin CA
  - Lower lid–medial aspect
  - Slow-growing, unlikely to metastasize
  - Risk factor: chronic sun exposure
  - May present as: nodular, nodular-ulcerative, superficial, or sclerosing forms

Basal Cell Carcinoma

- Superficial Pigmented BCC
- Nodular BCC

Advanced Basal Cell

- Sclerosing BCC
- BCC of Eyebrow

The Lid Margin

Treatment of BCC

- Excision
- Mohs' surgery
  - Micrographic tumor excision
  - Computer assisted “map”
  - Wide margin excision, frozen sections
  - High cure rate w/minimal normal tissue loss
  - Large, nodular BCC, SCC
- Cryotherapy
- Cautery

Mohs Micrographic Surgery

- Step 1: Curettage
  - Curette away any friable tumor.
- Step 2: Initial Excision
  - Make first excision with the blade beveled at a 45 degree angle to the skin, just outside of the curetted area.
  - Round the edges of the excision.
- Step Three: Tissue Dividing
  - Divide the tissue into quarters.
- Step Four: Tumor excision
  - Color ink tissue for orientation, mount in a slide in the cryostat and horizontal knife.
  - Prepare and read microscopic slides of each tumor section.
  - Return to circle the same tissue, until we are cancer free lateral and deep margins.
Treatment of BCC

- Cryotherapy
- Cautery
- Medical
  - Imiquad topical cream: Aldara (3M)
  - Approved for superficial BCC
  - Not for use on face

ABCDE's of Tumors

- A = Asymmetry
- B = Borders
  - Bleeding
- C = Color changes
  - Circulation from intrinsic vascularity
- D = Diameter
- E = Elevation

Periorbital Tumors

- Syringomas-benign
  - Adnexal neoplasm formed by well-differentiated ductal elements

Hidrocystoma

- Cystic lesion of either the apocrine or eccrine sweat glands
Insect Infestation

Questions and comments?

The Last Word

“If at first you don’t succeed, try again. Then quit. There’s no use being foolish about it.”

Thanks for spending your precious time with me!

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