Ocular Surface Inflammation and Allergy

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Case Scenario Links

Ocular Surface Inflammation and Allergy

• Watery eye in an infant (Oph03)
• Itching child (Derm01)
• Facial swelling and itchy rash (Derm04)
# The Acute Red Eye

<table>
<thead>
<tr>
<th>Subconj</th>
<th>Vision</th>
<th>Redness</th>
<th>Discharge</th>
<th>Cornea</th>
<th>Pupil</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Normal</td>
<td>Localised dense</td>
<td>Nil</td>
<td>Clear</td>
<td>Reg</td>
<td>Normal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conj</th>
<th>Vision</th>
<th>Redness</th>
<th>Discharge</th>
<th>Cornea</th>
<th>Pupil</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Normal</td>
<td>Forniceal</td>
<td>Mucoid serous purulent</td>
<td>Clear</td>
<td>Reg</td>
<td>Normal</td>
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</table>

<table>
<thead>
<tr>
<th>Keratitis</th>
<th>Vision</th>
<th>Redness</th>
<th>Discharge</th>
<th>Cornea</th>
<th>Pupil</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharp</td>
<td>? reduced</td>
<td>Circumcorneal</td>
<td>Watery</td>
<td>Pathology</td>
<td>Reg</td>
<td>Normal</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Uveitis</th>
<th>Vision</th>
<th>Redness</th>
<th>Discharge</th>
<th>Cornea</th>
<th>Pupil</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aching</td>
<td>? reduced</td>
<td>Circumcorneal</td>
<td>Nil</td>
<td>Clear</td>
<td>Small irreg</td>
<td>Normal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACG</th>
<th>Vision</th>
<th>Redness</th>
<th>Discharge</th>
<th>Cornea</th>
<th>Pupil</th>
<th>IOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe</td>
<td>Very poor</td>
<td>Diffuse</td>
<td>Nil</td>
<td>Oedema</td>
<td>Mid non reactive</td>
<td>High</td>
</tr>
</tbody>
</table>

Also refer to the UOA acute red eye tutorial
Papillae versus Follicles

**Papillae**
- Chronic inflammation
- Allergy
- C/L, sutures, prosthesis
- Cobblestones
- Central vascularity

**Follicles**
- Acute inflammation
- Viral
- Chlamydial
- Toxic
- Pale lesions
- Surrounding vessels injected
Conjunctival Papillae
Conjunctival Follicles
Allergic Conjunctivitis: acute to chronic

- Acute hayfever conjunctivitis
- Seasonal allergic conjunctivitis
- Perennial allergic conjunctivitis
- Vernal keratoconjunctivitis
- Atopic keratoconjunctivitis
Allergic conjunctivitis: papillae
Conjunctival Giant Papillae

Vernal Contact lens
Vernal Keratoconjunctivitis

- Age 9 to 19 years
- Boys typically > Girls
- Warm dry climates
- Symptoms: itching, mucus, photophobia
- Signs: superior tarsal or limbal papillae
- Pseudogerontoxon
- Peripheral fibrovascular pannus
- Shield ulcer
Corneal Shield Ulcer

- Persistent Epithelial defect
- Physical trauma from papillae, rubbing
- Chemical trauma from inflammatory mediators
- Mucous plaque formation
Atopic Keratoconjunctivitis

- Adult onset
- Symptoms: itch, photophobia, watering
- Signs: redness
- Fine papillary reaction
- Periorbital atopic eczema
- Microbial keratitis esp. opportunistic
- Deep corneal vessels and scarring
Pathophysiology: Mast Cells

Mast cell degranulation in response to:

- Allergens and IgE
- Physical trauma (rubbing)
- UV exposure
- Increased ocular surface temperature
- Bacterial lipopolysaccharides
Therapeutic options: I
(for milder disease)

- Avoidance of allergens and rubbing
- Cold compresses
- Topical antihistamines: rapid onset
- Systemic antihistamines: slower onset
- Mast cell stabilisers: preventative use
- Topical NSAIDs: Acular has some effect
- Dual action agents: best current therapy e.g. Patanol
Therapeutic options II
(for vision threatening disease)

- **Topical corticosteroids**
  - Introduce at high frequency, tail off rapidly
- **Topical cyclosporine 2% ointment**
- **Systemic immunosuppression**
- **Surgery:**
  - Excision of papillae
  - Superficial keratectomy
Marginal keratitis: hypersensitivity reaction to staph. toxins
Marginal Keratitis
Rosacea, blepharitis, C/L wear
Adenovirus Keratoconjunctivitis
Adenovirus Keratoconjunctivitis
Pseudomembranous conjunctivitis
Adenovirus Keratoconjunctivitis

Corneal subepithelial infiltrates
Herpes simplex blepharo-conjunctivitis

50% develop keratitis
Herpes Simplex: Dendritic Ulcer

- 50% will heal without Rx
- Acyclovir 95% heal within 2 weeks
- 25% risk recurrence within 5 years
Herpes Simplex: Amoeboid Ulcer
Herpes Simplex: Disciform Keratitis
HSV: Anaesthetic (denervated), Scarred, Vascularised Cornea
Failed Corneal transplantation
The End

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