Pathology of the Conjunctiva and Eyelid

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Disclosures

• I have no relevant financial relationships to disclose
Learning objectives

• Distinguish pathology diagnoses involving the conjunctiva.

• Distinguish pathology diagnoses involving the eyelid.

• Categorize a range of common and uncommon lesions involving the conjunctiva and eyelids.
Conjunctiva

• The conjunctiva is a mucous membrane (it is not skin), and lines the:
  – Posterior surface of the eyelids (palpebral conjunctiva);
  – Pericorneal surface of the anterior globe (epibulbar conjunctiva);
  – Fornices (forniceal conjunctiva)
Conjunctiva

- Stratified non-keratinizing squamous epithelium
- Goblet cells: tear film mucin layer
- Permits the eyelids to move over the surface of the cornea without damage to the cornea
Conjunctiva

Sclera
Conjunctiva goblet cells
Conjunctiva

• Congenital Anomalies
  – Limbal dermoid
• Degenerations
  – Pterygium
• Inflammatory/Infectious
  – Herpes Simplex Virus
• Neoplasia
  – Epithelial lesions (squamous cell neoplasia)
  – Subepithelial lesions (lymphoid)
  – Melanocytic lesions
• Others
  – Hereditary Benign Intraepithelial Dyskeratosis
Congenital: Limbal Dermoid
Limbal Dermoid
(vs. dermolipoma, complex choristoma)
Degenerations: Pingueculum
Degenerations: Pterygium
Pterygium  Gk: *pteron*, wing
Pterygium: Actinic Elastosis
Pterygium: Actinic elastosis in peripheral corneal stroma
One other degeneration: Conjunctiva Amyloidosis
Inflammatory/Infectious

• HIV +

• Pain, decreased vision O.S. x 2 months

• Acyclovir-resistant HSV skin lesions

• Bilateral corneal scarring at age 9
  – Diagnosed with HSV Keratitis
Clinical differential diagnosis:

- Infectious
- Lymphoma
- Kaposi’s sarcoma
- Squamous cell carcinoma
- Retro-orbital vascular congestion
Herpes Simplex Virus
Treatment

• 6 weeks Foscarnet (Foscavir ®)
• Indications:
  – CMV retinitis
  – Mucocutaneous Acyclovir-resistant HSV infection
• Va 20/80
HSV Discussion

• Herpes
  – Lat. < Gk. *Herpes < herpein*, “to creep”

• Major cause of blindness in the developed world

• Lifetime latent infection in trigeminal ganglia

• ~400,000 in US with ocular HSV disease
  – Cornea, conjunctiva, eyelid
  – Stromal keratitis, epithelial keratitis, conjunctivitis, blepharitis, uveitis
Conjunctiva

• Neoplasia
  – Epithelial lesions
  – Subepithelial lesions
  – Melanocytic lesions
Conjunctiva Squamous Lesions

- Cornea / Conjunctiva Intraepithelial Neoplasia (CCIN)
  - Differential diagnosis: mucoepidermoid carcinoma/adenosquamous carcinoma
- Squamous papilloma
Ocular Surface Squamous Neoplasia
Ocular Surface Squamous Neoplasia

- Dysplasia: mild, moderate, severe
- Squamous cell carcinoma in situ
- Invasive squamous cell carcinoma
Ocular Surface Squamous Neoplasia
Ocular Surface Squamous Neoplasia (CCIN associated with pterygium)
CCIN involving the cornea

Bowman’s layer
Ocular Surface Squamous Neoplasia
(Invasive squamous cell carcinoma)
Ocular Surface Squamous Neoplasia (Invasive squamous cell carcinoma)
Ocular Surface Squamous Neoplasia
(Invasive squamous cell carcinoma)
Invasive squamous cell carcinoma with intraocular extension: ciliary body
Invasive squamous cell carcinoma with intraocular extension to optic nerve
Hereditary Benign Intraepithelial Dyskeratosis
Hereditary Benign Intraepithelial Dyskeratosis
Hereditary Benign Intraepithelial Dyskeratosis
Salmon patch – Lymphoma
Mantle cell Lymphoma
Mantle cell Lymphoma
Mantle cell Lymphoma

Cyclin D1
Conjunctiva Melanocytic Lesions

- **Melanosis**
  - Complexion-associated melanosis
  - Ephelis (freckle)

- **Conjunctival Nevi**

- **Conjunctival Melanocytic Intraepithelial Neoplasia (C-MIN) // Primary Acquired Melanosis (PAM)**
  - Without atypia
  - With atypia
  - Malignant melanoma in situ

- **Invasive malignant melanoma**
Complexion-Associated Melanosis
Cystic Compound Nevus
Conjunctival Cystic Compound Nevus
Conjunctival Cystic Compound Nevus
-- epithelium, goblet cells
Conjunctival Melanocytic Intraepithelial Neoplasia (C-MIN)
Primary Acquired Melanosis (PAM)
PAM with mild atypia
PAM with severe atypia
(malignant melanoma in situ)
Malignant Melanoma
Eyelids

• The eyelids are skin: Dermatopathology
• Everyday dermatologic processes involve the eyelid:
  – Actinic keratosis, seborrheic keratosis, nevi
• Posteriorly the eyelids are lined by the palpebral conjunctiva mucous membrane
• The eyelids are vital for corneal health and transparency:
  – facial paralysis and failure to close eyelids with resultant corneal ulceration
Eyelid (Exenteration)
Chalazion: Lipogranuloma of the Eyelid
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Chalazion: Lipogranuloma of the Eyelid
Sebaceous Carcinoma

- Sebaceous carcinoma accounts for 5% of malignant eyelid tumors:
  - Basal cell carcinoma
  - Squamous cell carcinoma
  - Sebaceous carcinoma
  - Merkel cell carcinoma
  - Microcystic adnexal carcinoma
  - Metastases
  - Malignant melanoma
  - Signet ring cell / histiocytoid carcinoma
Sebaceous Carcinoma

• Usually in older adults
• Sebaceous glands of ocular adnexa
  – Meibomian glands (tarsal plate)
  – Zeis glands (lash follicles)
  – Upper eyelid more common (more glands)
• Caruncle, conjunctiva, lacrimal gland - rare
Sebaceous Carcinoma

- Madarosis: Loss of eyelashes
- Eyelid nodule // can resemble a chalazion
- Diffuse eyelid thickening
- Persistent keratoconjunctivitis // blepharitis
- Caruncular mass
Sebaceous Cell Carcinoma
Sebaceous Carcinoma
Sebaceous Carcinoma

Pagetoid // Intraepithelial spread
Periadnexal spread
Sebaceous Carcinoma Metastatic to Lung
Sebaceous lesions

- Sebaceous hyperplasia
- Sebaceoma
- Sebaceous adenoma
  - Muir-Torre Syndrome: cutaneous sebaceous neoplasm + visceral malignancy
- Sebaceous carcinoma
  - sebaceous cell / sebaceous gland carcinoma
Sebaceous Adenoma
Granulomatous lymphangitis
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- Intralymphatic/perilymphatic granulomatous inflammation
- Lymphangiectasia // lymphedema
- D2-40 immunostain confirms lymphatics
- Melkersson-Rosenthal Syndrome:
  - Recurrent facial paralysis
  - Chronic edema of the face and lips
  - Tongue hypertrophy // fissuring (lingua plicata)
Eyelid Granulomas: Actinic Granuloma
Eyelid Granulomas: Sarcoidosis
Phakomatous Choristoma
Phakomatous Choristoma
Phakomatous Choristoma
Tuberous sclerosis: Angiofibroma
Tuberous sclerosis: Angiofibroma
Tuberous sclerosis: Angiofibroma
Tuberous sclerosis: Angiofibroma
Syringoma
Syringoma
Xanthelasma
Neurofibroma
Neurofibroma
Neurofibroma
<table>
<thead>
<tr>
<th></th>
<th>You remain more likely to receive a biopsy of hereditary benign intraepithelial dyskeratosis in which geographic location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Pacific Northwest</td>
</tr>
<tr>
<td>b.</td>
<td>North Carolina</td>
</tr>
<tr>
<td>c.</td>
<td>Northeast</td>
</tr>
<tr>
<td>d.</td>
<td>Southwest</td>
</tr>
<tr>
<td>e.</td>
<td>Nevada</td>
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</tbody>
</table>
Correct answer and rationale: B

Hereditary benign intraepithelial dyskeratosis has a strong association with the Haliwa-Saponi tribe located in North Carolina.
### Question 2

<table>
<thead>
<tr>
<th></th>
<th>Limbal dermoid:</th>
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<tbody>
<tr>
<td>A</td>
<td>Histologically is identical to a dermoid cyst</td>
</tr>
<tr>
<td>B</td>
<td>Is a component of malignant teratoma</td>
</tr>
<tr>
<td>C</td>
<td>Is a congenital choristomatous lesion composed of epithelium, collagen bundles and epidermal appendages</td>
</tr>
<tr>
<td>D</td>
<td>Frequently metastasizes</td>
</tr>
<tr>
<td>E</td>
<td>Anatomically involves the superiorlateral orbit</td>
</tr>
</tbody>
</table>
Correct answer and rationale: C

- Limbal dermoid is a congenital choristomatous lesion composed of epithelium, collagen bundles and epidermal appendages. It is benign and does not involve the orbit.
**Question 3**

When a patient presents with a “recurrent or atypical chalazion” a biopsy is submitted to evaluate for:

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>a.</td>
<td>Ocular cicatricial pemphigoid</td>
</tr>
<tr>
<td>b.</td>
<td>Parasitic infection</td>
</tr>
<tr>
<td>c.</td>
<td>Sebaceous carcinoma</td>
</tr>
<tr>
<td>d.</td>
<td>Basal cell carcinoma</td>
</tr>
<tr>
<td>e.</td>
<td>Malignant melanoma</td>
</tr>
</tbody>
</table>
Correct answer and rationale: C

• “Recurrent or atypical chalazia” are concerning for the possibility of sebaceous carcinoma. The other choices do not typically present clinically as “chalazia.”
The End