Conjunctiva
Lecture 1

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Subdivision of Lectures

APPLIED ANATOMY
- Parts
- Structure
- Glands

SYMPTOMATIC CONDITIONS
- Hyperaemia
- Chemosis
- Ecchymosis
- Xerosis
- Discoloration

DEGENERATIVE CONDITIONS
- Pinguecula
- Pterygium
- Concretions

INFLAMMATIONS OF CONJUNCTIVA
- Infective conjunctivitis
  - Bacterial
  - Chlamydial
  - Viral
- Allergic conjunctivitis
- Granulomatous conjunctivitis

CYSTS AND TUMOURS
**Conjoin: to join**..... has been given to this mucous membrane owing to the fact that it joins the eyeball to the lids.
Palpebral conjunctiva

**Marginal conjunctiva** extends from the lid margin to about 2 mm on the back of lid up to a shallow groove, the *sulcus subtarsalis*.

**Tarsal conjunctiva** is firmly adherent to the whole tarsal plate in the upper lid. In the lower lid, it is adherent only to half width of the tarsus.

**Orbital part of palpebral conjunctiva** lies loose between the tarsal plate and fornix.
Bulbar conjunctiva

- Lies loose over the underlying structures and thus can be moved easily.
- It is separated from the anterior sclera by episcleral tissue and Tenon's capsule.
- A 3-mm ridge of bulbar conjunctiva around the cornea is called *limbal conjunctiva*.
- *In the area of limbus, the conjunctiva*, Tenon's capsule and the episcleral tissue are fused into a dense tissue which is strongly adherent to the underlying corneoscleral junction.
- At the limbus, the epithelium of conjunctiva becomes continuous with that of cornea.
Forniceal Conjunctiva:

- Joins the bulbar conjunctiva with the palpebral conjunctiva.
- It can be subdivided into superior, inferior, medial and lateral fornices.

Caruncle:

- Small (5 x 3 mm) fleshy nodular prominence in nasal portion of interpalpebral fissure between skin and conjunctiva
- lined by conjunctival epithelium and nonkeratinized squamous epithelium; contains cutaneous adnexal structures, accessory lacrimal gland tissue
Histologically

Three layers
(1) epithelium, (2) adenoid layer, and (3) fibrous layer
Blood supply of conjunctiva
**Venous drainage:**

Drain into the venous plexus of eyelids and some around the cornea into the anterior ciliary veins.
Nerve supply of conjunctiva

- A circumcorneal zone of conjunctiva is supplied by the branches from long ciliary nerves which supply the cornea.
- Rest of the conjunctiva is supplied by the branches from lacrimal, infratrochlear, supratrochlear, supraorbital and frontal nerves.
Injection

- Dilation of the conjunctival vasculature
Chemosis
Papillae

- Non-specific and less diagnostic
- Conjunctival epithelial hyperplasia
- Central vascular core, Surrounded edema and inflammatory cells
- Fibrous septa
- GPC
Follicles

- Raised, gelatinous, oval lesions about 1 mm in diameter found usually in the lower tarsal conjunctiva and upper tarsal border, and occasionally at the limbus.
- Each follicle represents a lymphoid collection with its own germinal centre.
- Unlike papillae, the causes of follicles are more specific (e.g. viral and chlamydial infections).
Conjunctival concretions:

- Epithelial inclusion cysts
- Filled with epithelial and keratin debris,
- Common in elderly
- In cases of chronic conjunctivitis,
- Remove if there is irritation
Pterygium

- Greek word *pterygion* meaning "wing".
- Elastoid degeneration
- Causes: Sun (uv light), wind
- Usually nasal side
- Also called as “Surfer’s eye”
- Rx:
  - Surgery: Excision with conjunctival autograft
  - When to consider surgery?
    - Corneal astigmatism, visual axis involvement and cosmetic reasons
Kissing Pterygium

Basophilic degenerations
Staging of Pterygium:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>Stage I</td>
<td>Minimum invasion, thin translucent growth, thin vessels</td>
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<tr>
<td>Stage II</td>
<td>Moderately thick pannus, deep vessels not visible, significant invasion of cornea</td>
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<tr>
<td>Stage III</td>
<td>Thick fleshy growth covering pupil, dense vascularisation</td>
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Pinguecula

- Benign
- Composed of collagen and elastin
Subconjunctival hemorrhage

Causes:

- spontaneous, or
- rubbing of the eye,
- vomiting,
- coughing,
- elevated blood pressure,
- or, rarely, bleeding disorders.

Recommend no rubbing, and no exercise or bearing down.
Subconjunctival haemorrhage

- Bright red in colour because it is fully oxygenated by the ambient air, through the conjunctiva.
Conjunctival membrane:
Foreign body
FOREIGN BODIES IN THE EYE

Everting the eyelid

Single eversion

Double eversion
Conjunctival Xerosis:
• Vitamin A plays a role in mucin and keratin expression
• Def of Vit A leads to altered mucin expression in goblet cells and hence keratinisation of conjunctival epithelium