The conjunctiva
Anatomy and Physiology

Swiss Eye Week 2017

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1. Anatomy

Palpebral / tarsal conjunctiva
- Covers the inner surface of the lids, firm adherence
- Transparent, strongly vascularised

Fornical conjunctiva
- At the junction of bulbar and palpebral conjunctiva
- Relatively loose to allow for movements
- Connects to fibrous expansions of Müller muscle and inferior tarsal muscle (lower lid)

Bulbar / ocular conjunctiva
- Movable, fuses with Tenon's capsule

Delimitations

Conjunctival epithelium continuous with corneal epithelium (cornea) and with skin (lid margin)

Substance propria rich in lymphoid tissue and immunocompetent cells (mast cells, eosinophils, plasma cells)

Conjunctival sac
- Volume is 7 µl

Blood supply
- Palpebral / tarsal conjunctiva: marginal arcades of the lids
- Bulbar / ocular conjunctiva: anterior ciliary arteries

Innervation
- Ophthalmic division, trigeminus

Histology

- Nonkeratinized squamous epithelium, 2 to 5 layers
- Lymphoid layer consisting of intraepithelial lymphocytes, subepithelial lymphoid follicles and adjacent lymphatics and blood vessels
- Goblet cells: monocellular mucous glands, tear film, concentrated near the caruncle and the inferior conjunctiva
- Glands of Krause and Wolfring: accessory lacrimal glands, sympathetic control, baseline tear production
Lubrication

• Goblet cells: mucinous part of tear film
• Accessory lacrimal glands: baseline tear production

Prevents entrance of microbes

• Antimicrobial peptides (AMPs)
• Broad-spectrum activity against bacteria, fungi and viruses

Immune surveillance

• CALT: conjunctiva-associated lymphoid tissue, analogy to MALT
• Antigen processing cells
• Protection of the ocular surface by performing antigen uptake, processing and initiating immune responses
• Biomicroscopically = follicles

Biomicroscopic examination

Biomicroscopy of the Tarsal Conjunctiva

A Means for the Diagnosis of External Disease