Conjunctiva

**Conjunctiva**: is a thin transparent vascularised mucus membrane that covers the sclera and inner sides of the lids.

**Composed of three layers:**
- **Epithelium**: nonkeratinized stratified columnar epithelium with goblet cells.
- **The stroma** (substantia propria): richly vascularized loose connective tissue.
- **Conjunctiva associated lymphoid tissue**: initiation and regulation of immune response.

**Divided into three parts:**
- **Palpebral** or tarsal conjunctiva: Lines the eyelids
- **Bulbar** or ocular conjunctiva: Covers the eyeball, over the anterior sclera, **tightly bound** to the underlying sclera by tenons capsule and moves with the eyeball movements.
- **Fornix** conjunctiva: Forms the junction between the bulbar and palpebral conjunctivas, it’s **loose and flexible**, allowing the free movement of the lids and eyeball.
Disorders of the conjunctiva are common causes of signs and symptoms. The ocular surface is regularly exposed to the external environment and vulnerable to harm and disorders like:
  - trauma
  - infection
  - allergic reactions
  - Degenerative and structural abnormalities (account for a minority of problems).

**Symptoms:**

- **Pain and irritation:** Conjunctivitis alone is seldom associated with anything more than mild discomfort. Pain signifies something more serious such as corneal injury or infection. This symptom helps differentiate conjunctivitis from corneal disease.

- **Redness:** usually diffuse in conjunctivitis while if circumciliary we should suspect keratitis, uveitis and angle closure glaucoma.

- **Discharge:** purulent (bacterial), watery (viral), mucoid (allergic).
Signs:
- **Conjunctival injection** (dilated vessels)
- **Subconjunctival hemorrhage** (usually bright).
- **Follicles.**
- **Papillae.**

**Follicles:** Oval pale lesions, one mm in diameter represent lymphoid tissue. More specific to viral and chlamydial infection. Usually in the lower tarsal conjunctiva & upper tarsal border, occasionally at the limbus.

**Papillae:** raised lesions on the upper tarsal conjunctiva, one or more mm in diameter with central vascular core. They are non-specific sign of chronic inflammation (result from inflammatory infiltrate constrained by septa), giant papillae in allergic condition. They are also seen as a reaction to contact lens wear.
## Conjunctival disorders

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Bacterial conjunctivitis

Most commonly caused by: staphylococcus, streptococcus, haemophilus.
Clinical picture: redness, irritation, discharge (purulent).
Diagnosis: conjunctival swab for culture might be indicated especially if the condition did not resolve.
Treatment: usually self limited 10-14 days but antibiotics may be needed.
Sometimes severe infections like those by gonococci can cause blindness.
Neonatal conjunctivitis (Ophthalmia neonatorum)

Conjunctivitis in first 28 days of life.

Require urgent treatment with topical antibiotics. Conunctival swab to determine the causative microbe are mandatory.

The commonest causative agents are:

- Bacterial conjunctivitis (usually Gram- positive).
- Chlamydia: M.C (maternal vaginal infection as baby passes through the birth canal).
- Neisseria gonorrhoeae.
- Herpes simplex.
Chlamydial infection

It is an obligate intracellular organism.

Two types of ocular infections:

A. Inclusion keratoconjunctivitis.
B. Trachoma.
A-Inclusion Keratoconjunctivitis

Clinical picture:
1. Chronic red eye
2. Mucopurulent discharge
3. Hyperemia
4. Follicular reaction on the tarsal conjunctiva
5. Micropannus (corneal opacities, superficial peripheral vascularization and subepithelial scarring) in late stages
6. STD; usually associated with cervicitis and urethritis.

Diagnosis:
1. Immunofluorescence to detect chlamydial antigens
2. Inclusion body identification by Giemsa stain

Treatment: azithromycin, erythromycin.
B-Trachoma
Used to be the commonest infective causing blindness in the past. Transmitted by housefly.

Risk factors:
poor hygiene, overcrowding, hot and dry climate.

Complications:
Keratitis and Trichiasis,
Recurrent subconjunctival fibrosis (due to re-infection),
Corneal scaring (blindness)

Treatment:
Tetracycline, erythromycin
Surgery for trichiasis and entropion.
Viral conjunctivitis

Generally; viral conjunctivitis is part of viral infection course, usually respiratory tract infection that leads to viremia, and eventually conjunctivitis. Associated with periauricular lymphadenopathy.

Can be unilateral or bilateral and last 1-2 weeks.

The most common cause is Adenovirus, & to a lesser extent Coxsackie & picornavirus.

Differ from bacterial by:

• watery discharge
• increased lacrimation
• lid edema
• conjunctival follicles.
Adenovirus conjunctivitis

Self-limited but highly contagious and frequently occurs in epidemics.

Adenoviruses can also cause a conjunctivitis associated with the formation of a pseudomembrane across the conjunctiva.

Treatment:

• Good hygiene (separate towels)
• Symptomatic treatment for irritation
• AB if bacterial conjunctivitis is over
• Topical steroid may be used if cornea involvement.
• Patients need sick leave to limit the spread of the infection.
Allergic Conjunctivitis

**Acute** (hay fever or seasonal): **acute IgE mediated reaction** to mostly airborne allergens.

**Presentation:**

- Itching.
- Conjunctival injection and swelling.
- Lacrimation.
- Rhinitis.
Allergic Conjunctivitis

**Vernal** (spring catarrh)

IgE mediated reaction, seasonal and may present all year long and become chronic.

Male patient with history of atopy (asthma, eczema, etc).

Complex immune reaction with raised IgE levels in the tears and serum, and mast cells and eosinophils in the conjunctival epithelium.

**Symptoms:**
- itching
- lacrimation
- photophobia

**Signs:**
- papillary conjunctivitis
- giant papillary reaction (cobblestones)
- limbal follicles, punctate corneal lesions
- opaque oval plaques on the upper cornea.
Treatment:

- Antihistamines
- Mast cell stabilizers (Na chrmolin, nedochromil, lodoxamide)
- Topical steroids
- Mucolytics (to dissolve corneal plaques)
- May need surgery.

The appearance of giant (cobblestone) papillae in vernal conjunctivitis
Conjunctival degenerations

Cysts are common in the conjunctiva due to prolonged exposure to UV light which leads to the alteration of collagen structure. Two types: pingueculae and pterygia.
1-Pingueculum

• Small benign elevated yellowish paralimbal Lesions
• never impinge on the cornea.
2-Pterygium

Wing shaped with the apex towards the cornea where it extends. May cause irritation and may encroach onto the visual axes. Hallmark (vascularised, encroach onto cornea).

Treatment:

steroids (if inflamed).
surgical excision (if affect vision), but may recur.

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THANK YOU