Subject: Ophthalmology
Unit: Conjunctiva
Topic: Conjunctiva

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CONJUNCTIVA

PARTS

1. **BULBAR CONJUNCTIVA** → covers the sclera but not the cornea
2. **PALPEBRA CONJUNCTIVA** → covers the upper & lower eyelids
3. **FORNICEAL CONJUNCTIVA** → Junction of bulbar & palpebral conjunctiva

→ Contains **GOBLET CELLS**
   → secretes mucus
   → mucin stabilizes the tear film
   → max. no. present at infero-nasal conjunctiva
   → deficiency leads to dry eye

**WHO CLASSIFICATION OF VITAMIN A DEFICIENCY [XEROPHTHALMIA]**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Ocular Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>XN</td>
<td>Night blindness</td>
</tr>
<tr>
<td>X1A</td>
<td>Conjunctival xerosis</td>
</tr>
<tr>
<td>X1B</td>
<td>Bitot's spots</td>
</tr>
<tr>
<td>X2</td>
<td>Corneal xerosis</td>
</tr>
<tr>
<td>X3A</td>
<td>Corneal ulceration-keratomalacia involving one-third or less of the cornea</td>
</tr>
<tr>
<td>X3B</td>
<td>Corneal ulceration-keratomalacia involving one-half or more of the cornea</td>
</tr>
<tr>
<td>XS</td>
<td>Corneal scar</td>
</tr>
<tr>
<td>XF</td>
<td>Xerophthalmic fundus</td>
</tr>
</tbody>
</table>

→ upto x2 (corneal xerosis), we can reverse it vitamin A

**TREATMENT**

→ **VITAMIN A SUPPLEMENTATION**
   → 2,00,000 IU for children above 1 year
   → at 0, 1, 14 days intervals
   → [0 → day of presentation]
   → 14 th day dose is for liver supplementation

CONJUNCTIVAL REACTIONS

1. **FOLLICLES**
   → collections of lymphocytes
   → seen in → viral infections
   → **Chlamydeal infections [trachoma]**
   → **Toxic conditions [BROMONIDINE THERAPY]**

2. **PAPILLAE**
   → elevation of conjunctiva & central vascular core
   → seen in → Allergic conditions [venal catarrh]
   → FB reaction
CONJUNCTIVITIS

→ inflammation of conjunctiva

CLINICAL FEATURES
→ Bright red eye
→ no pain
→ Discharge
  ① Purulent discharge → Bacterial etiology
  ② Serous discharge → viral etiology
  ③ Mucoid discharge → Allergic etiology

EPIDEMIC KERATO CONJUNCTIVITIS
→ caused by Adeno virus 8, 9, 37
→ highly infectious
→ aka ① PINK EYE
    ② MADRAS EYE
    ③ SHIPYARD EYE

ACUTE HEMORRHAGIC CONJUNCTIVITIS [AHC]
→ caused by Picorna virus
  → Enterovirus 70 [more common]
  → Coxsackie virus

→ highly infectious
→ Enterovirus aka APOLLO VIRUS XI
  → discovered on 1969
  → disease caused is → APOLLO DISEASE

OPHTHALMIA NEONATORUM
→ occurs in neonates [first 28 days]
  Tears do not form till 1st 28 days
  Tears in 1st month of birth → infectious

→ RED EYE IN
  → 1st day → chemical conjunctivitis
  → 2nd - 3rd day → Gonococcal Conjunctivitis [most dangerous]
  → > 1 week → chlamydia [mc cause]

→ Only conjunctivitis that causes blindness → Gonococcal conjunctivitis
→ can perforate cornea & causes blindness
→ CREED’S METHOD
  → instilling 3% AgNO₃ as soon as child birth
  → chemoprophylactic against gonococcus
→ but it is toxic → causes chemical conjunctivitis
→ DOC FOR PROPHYLAXIS → AZITHROMYCIN
KERATO CONJUNCTIVITIS

TRACHOMA / EGYPTIAN OPHTHALMIA
→ caused by chlamydia trachomatis - A, B, C
→ CHLAMYDIA TRACHOMATIS
  A, B, C → causes Trachoma
  D to K → causes Inclusion Conjunctivitis
  L₁, L₂, L₃ → causes Lymphogranuloma Venereum [LGV]

→ commonest infective cause of blindness [1-4%]
→ Geographical distribution
  North Africa → Egypt, Libya, Tunisia, Algeria, Ethiopia, Somalia
  South Asia → India, Pakistan, Bangladesh, Sri Lanka
  Middle East → Arab countries

Regions i high distribution in India [Endemic Trachoma]
  North India
    → Punjab
    → Haryana
    → Uttar Pradesh
    → Uttaranchal
    → Rajasthan
    → Gujarat

→ CLINICAL FEATURES
  → Lacrimation
  → Photophobia
  → Red eyes
  → Hall mark → SAGO GRAIN FOLLICLES
  → HERBET PITS Seen
  → ARLT'S LINE on upper palpebral conjunctiva seen
  → ARLT'S TRIANGLE seen in Anterior uveitis
  → PANNUS Seen [non specific sign]

→ SAFE STRATEGY by WHO
  S → Surgery for Trichiasis
  A → Antibiotics
    → oral → AZITHROMYCIN [DOC]
    → topical → TETRACYCLINE, ERYTHROMYCIN
  F → Facial Hygiene
  E → Environmental Sanitation

→ BLANKET/MASS THERAPY by WHO for Endemic areas
  → Intermittent Therapy
    → 1% Tetracycline Ointment OD X 10 days continuously | 1m X 6 months
    → 1% TETRACYCLINE Ointment OD X 5 days continuously | 1m X 6 months
→ mc affected → children
   and mc affected → women

OTHER FEATURES
→ TRICHIASIS → posterior misdirection of eye lashes
→ TYLOSIS → thickening of eye lid margin
→ MADAROSIS → loss of eye lashes
→ ENTROPION → inward turning of eye lid margin
→ CORNEAL OPACITIES
   → NEBULA → most superficial [max. discomfort]
   → MACULA → half thickness
   → LEUCOMA → Full thickness [max. loss of vision]

WHO GRADING → FISTO CLASSIFICATION
I → F → > 5 Follicles in upper palpebral conjunctiva
II → I → Intense inflammation [max infectivity]
III → S → Scaring [healing started]
IV → T → Trichiasis
V → O → Corneal Opacities

VISION 2020
→ Aim → 2020 by 2020 → 20 Feet = 6 metres by 2020

→ By eliminating
  ① Cataract → by Surgery
  ② Trachoma → by SAFE Strategy
  ③ Childhood blindness → by Vitamin A Supplementation
  ④ Refractive error → by Spectacle correction
  ⑤ Onchocerciasis → not a problem in India

In India, we consider instead of Onchocerciasis
  ⑥ Glaucoma
  ⑦ Diabetic Retinopathy

→ CSR → Cataract Surgical Rate
   → no. of cataract surgeries performed per million/year

→ GET 2020 → Global Eradication of Trachoma by 2020
SPRING CATARRH / VERNAL CATARRH / VERNAL KERATOCONJUNCTIVITIS (VKC)

→ Misnomer → Occurs in Summer, not in spring (from April to October)
→ occurs in children
→ Allergic conjunctivitis
→ Severe itching present
→ COBBLE STONE PAPILAE seen → Hallmark
→ Ropy discharge present
→ HORNER TRANTAS SPOTS seen
→ SHIELD ULCER seen
→ MAXWEL - LYON'S SIGN seen
  → on eversion of eye lid, pseudo-
    membrane formed by atmospheric heat

→ TREATMENT
  → DOC → SODIUM CROMOGLYCOLATE [Mast cell stabilizer]
  → OLOPATADINE