ALLERGIC CONJUNCTIVITIS

- It is the inflammation of conjunctiva due to allergic or hypersensitivity reactions which may be immediate (humoral) or delayed (cellular). The conjunctiva is ten times more sensitive than the skin to allergens.

TYPES

- **Simple allergic conjunctivitis**
  - **Seasonal allergic conjunctivitis (SAC)**
  - **Perennial allergic conjunctivitis (PAC)**
- **Vernal keratoconjunctivitis (VKC)**
- **Atopic keratoconjunctivitis (AKC)**
- **Giant papillary conjunctivitis (GPC)**
- **Phlyctenular keratoconjunctivitis (PKC)**
- **Contact dermoconjunctivitis (CDC)**

VERNAL KERATOCONJUNCTIVITIS (VKC) OR SPRING CATARRH

- It is a recurrent, bilateral, interstitial, self-limiting, allergic inflammation of the conjunctiva having a periodic seasonal incidence
- It is considered a hypersensitivity reaction to some exogenous allergen, such as grass pollens.

Predisposing factors

- 1. Age and sex. 4-20 years; more common in boys than girls.
- 2. Season. More common in summer; hence the name spring catarrh looks a misnomer. Recently it is being labelled as 'Warm weather conjunctivitis'.
- 3. Climate. More prevalent in tropics, less in temperate zones and almost non-existent in cold climate.

PATHOLOGY

- 1. Conjunctival epithelium undergoes hyperplasia and sends downward projections into the subepithelial tissue.
- 2. Adenoid layer shows marked cellular infiltration by eosinophils, plasma cells, lymphocytes and histiocytes.
- 3. Fibrous layer shows proliferation which later on undergoes hyaline changes.
- 4. Conjunctival vessels also show proliferation, increased permeability and vasodilation.

SYMPTOMS

- Spring catarrh is characterised by marked burning and itching sensation which is usually intolerable and accentuated when patient comes in a warm humid atmosphere. Itching is more marked with palpebral form of disease. Other associated symptoms include: mild photophobia, lacrimation, stringy (ropy) discharge and heaviness of lids

Signs

- Signs of vernal keratoconjunctivitis can be described in following three clinical forms:

- 1. Palpebral form. Usually upper tarsal conjunctiva of both eyes is involved. The typical lesion is characterized by the presence of hard, flat topped, papillae arranged in a 'cobble-stone' or 'pavement stone', fashion .In severe cases, papillae may hypertrophy to produce cauliflower like excrescences of 'giant papillae'. Conjunctival changes are associated with white ropy discharge

- 2. Bulbar form. It is characterised by: (i) dusky red triangular congestion of bulbar conjunctiva in palpebral area; (ii) gelatinous thickened accumulation of tissue around the limbus; and (iii) presence of discrete whitish raised dots along the limbus (Tranta's spots)
- 3. Mixed form. It shows combined features of both palpebral and bulbar forms

Palpebral form of vernal keratoconjunctivitis.

Bulbar form of vernal keratoconjunctivitis.

Vernal corneal plaque.

Vernal keratopathy

- 1. Punctate epithelial keratitis
- 2. Ulcerative vernal keratitis (shield ulceration)
- 3. Vernal corneal plaques
- 4. Subepithelial scarring
- 5. Pseudogerontoxon

TREATMENT

- LOCAL THERAPY
- Topical steroids :Medrysone ,fluorometholone
- . Mast cell stabilizers such as sodium cromoglycate (2%)
- Topical antihistaminics
- Topical antihistaminics

Systemic therapy

- Oral antihistaminics
- Oral steroids for a short duration have been recommended for advanced, very severe, nonresponsive cases.

Treatment of large papillae. Very large (giant) papillae can be tackled either by :

- Supratarsal injection of long acting steroid or
- Cryo application
- Surgical excision is recommended for extraordinarily large papillae.

PHLYCTENULAR KERATOCONJUNCTIVITIS

- Phlyctenular keratoconjunctivitis is a characteristic nodular affection occurring as an allergic response of the conjunctival and corneal epithelium to some endogenous allergens to which they have become sensitized
- It is believed to be a delayed hypersensitivity (Type IV-cell mediated) response to endogenous microbial proteins.

CAUSTAIVE ALLERGENS

- 1. Tuberculous proteins were considered, previously, as the most common cause.
- 2. Staphylococcus proteins are now thought to account for most of the cases.
- 3. Other allergens may be proteins of Moraxella Axenfeld bacillius and certain parasites (worm infestation)

PATHOLOGY

- 1. Stage of nodule formation
- 2. Stage of ulceration
- 3. Stage of granulation.
- 4. Stage of healing

SYMPTOMS

- in simple phlyctenular conjunctivitis are few, like mild discomfort in the eye, irritation and reflex watering. However, usually there is associated mucopurulent conjunctivitis due to secondary bacterial infection

SIGNS

- The phlyctenular conjunctivitis can present in three forms: simple, necrotizing and miliary.

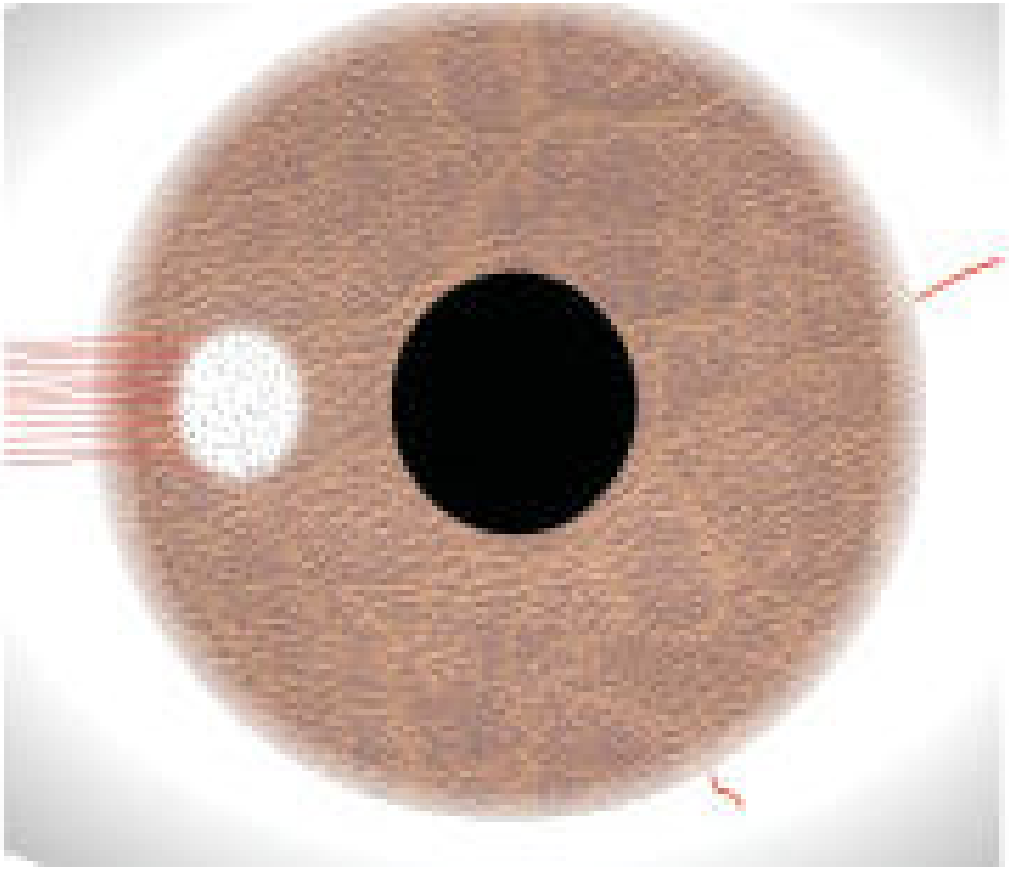
- Simple phylctenular conjunctivitis.

  It is the most commonly seen variety. It is characterised by the presence of a typical pinkish white nodule surrounded by hyperaemia on the bulbar conjunctiva, usually near the limbus. Most of the times there is solitary nodule but at times there may be two nodules (Fig. 4.25). In a few days the nodule ulcerates at apex which later on gets epithelised. Rest of the conjunctiva is normal.

- Necrotizing phlyctenular conjunctivitis is characterised by the presence of a very large phlycten with necrosis and ulceration leading to a severe pustular conjunctivitis.
- Miliary phlyctenular conjunctivitis is characterised by the presence of multiple phlyctens which may be arranged haphazardly or in the form of a ring around the limbus and may even form a ring ulcer

Phlyctenular keratitis

- Corneal involvement may occur secondarily from extension of conjunctival phlycten; or rarely as a primary disease. It may present in two forms: the 'ulcerative phlyctenular keratitis' or 'diffuse infiltrative keratitis‘
- A. Ulcerative phlyctenular keratitis may occur in the following three forms:
- Sacrofulous ulcer,Fascicular ulcer,Miliary ulcer



Fascicular corneal ulcer.

Phylctenular conjunctivitis.

- B. Diffuse infiltrative phlyctenular keratitis may appear in the form of central infiltration of cornea with characteristic rich vascularization from the periphery, all around the limbus. It may be superficial or deep.

- Clinical course is usually self-limiting and phlycten disappears in 8-10 days leaving no trace. However, recurrences are very common.

TREATMENT

- 1. Local therapy.
- i. Topical steroids, in the form of eye drops or ointment (dexamethasone or betamethasone) produce dramatic effect in phlyctenular keratoconjunctivitis.
- ii. Antibiotic drops and ointment should be added to take care of the associated secondary infection (mucopurulent conjunctivitis).
- iii. Atropine (1%) eye ointment should be applied once daily when cornea is involved

- 2. Specific therapy: Attempts must be made to search and eradicate the following causative conditions:
- i. Tuberculous infection should be excluded by Xrays chest, Mantoux test, TLC, DLC and ESR. In case, a tubercular focus is discovered, antitubercular treatment should be started to combat the infection.
- ii. Septic focus, in the form of tonsillitis, adenoiditis, or caries teeth, when present should be adequately treated by systemic antibotics and necessary surgical measures.
- iii. Parasitic infestation should be ruled out by repeated stool examination and when discovered should be adequately treated for complete eradication.