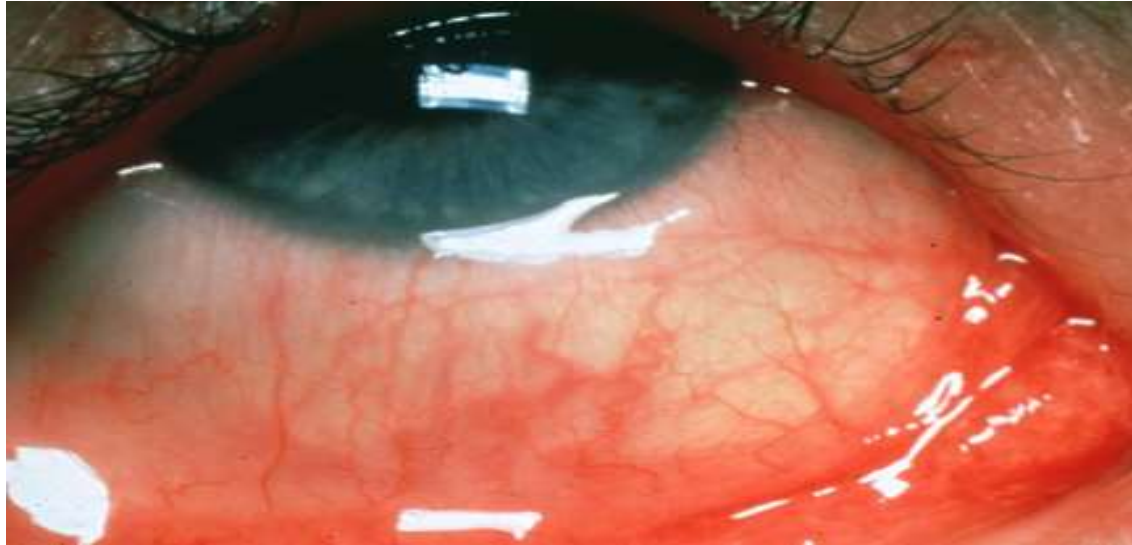


Allergic conjunctivitis



Syed Mohammed Didarul Alam

B.Optom, 3rd Year

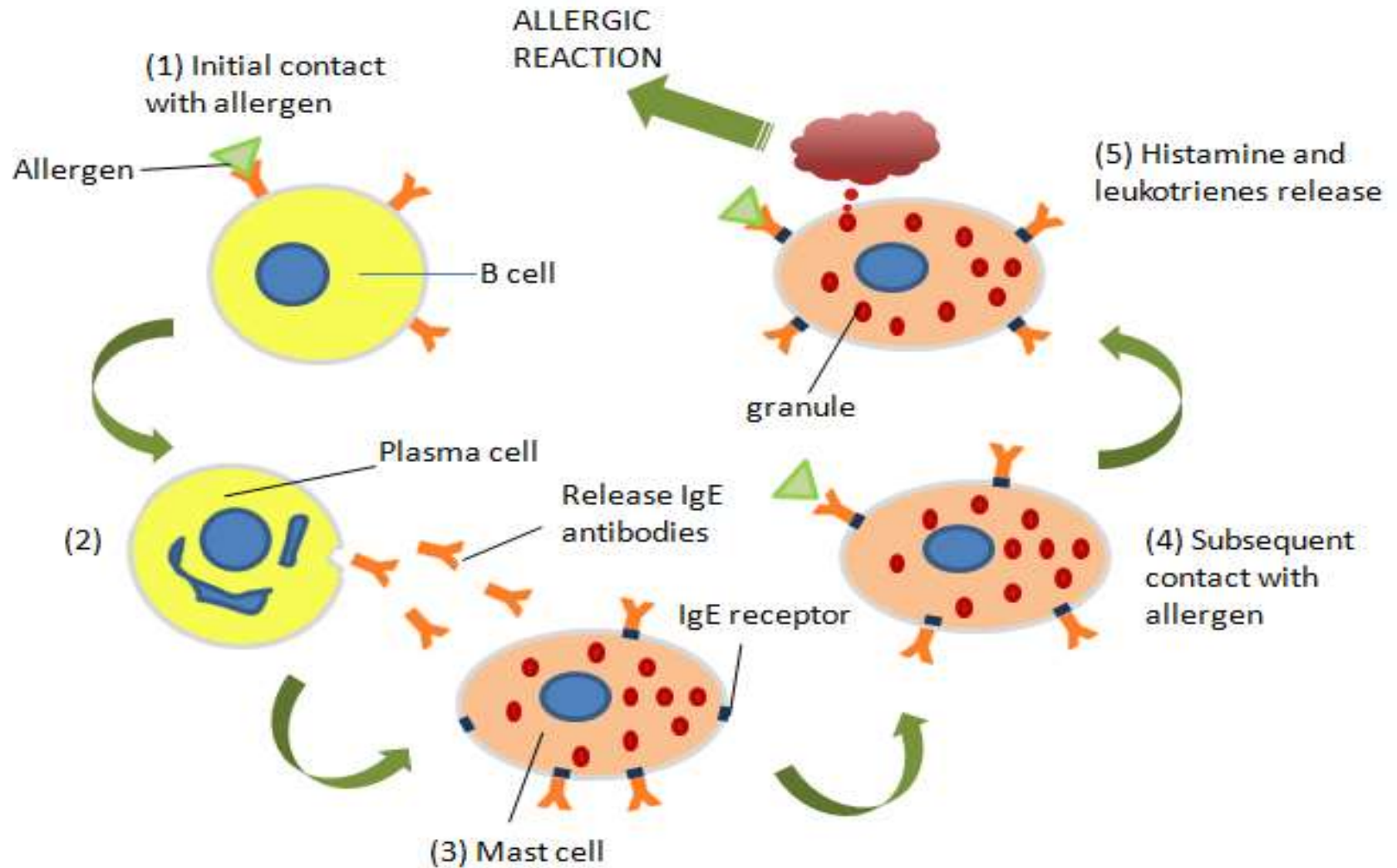
Institute of Community
Ophthalmology

University of Chittagong

Allergic conjunctivitis:

- *Inflammation of conjunctiva due to allergic or hypersensitive reaction which may be immediate (humoral) or delayed (cellular) to specific antigens*

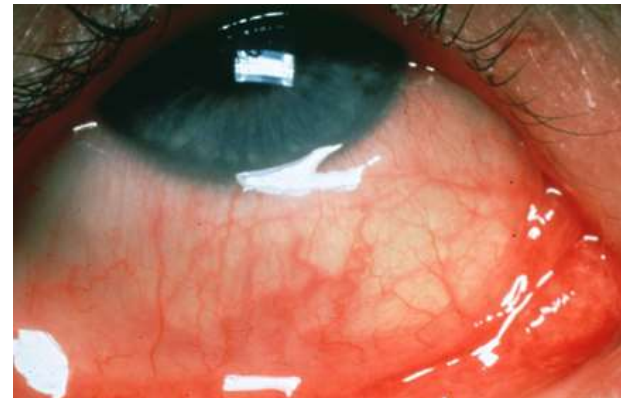
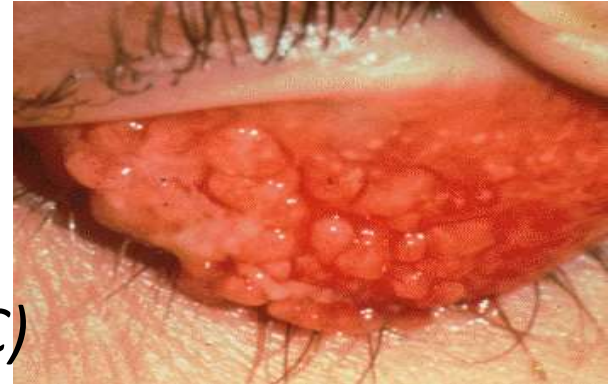
Allergic Reaction



Allergic conjunctivitis:

Types:

1. *Simple allergic conjunctivitis*
 - hay fever conjunctivitis
 - seasonal allergic conjunctivitis (SAC)
 - perennial allergic conjunctivitis(PAC)
2. *Vernal keratoconjunctivitis (VKC)*
3. *Atopic keratoconjunctivitis (AKC)*
4. *Giant papillary conjunctivitis (GPC)*
5. *Phlyctenular keratoconjunctivitis (PKC)*
6. *Contact dermoconjunctivitis (CDC)*



SIMPLE ALLERGIC CONJUNCTIVITIS

- Mild ,non specific IgE mediated Type I hypersensitivity reaction
- Etiology :
 - Hay fever conjunctivitis : associated with allergic rhinitis
 - Allergens : pollens , grass , animal dandruffs
 - SAC: common , d/t: grass pollens
 - PAC: not common , d/t: house dust and mites



Pathogenesis

Allergen enters tear film



Comes in contact with conjunctival mast cells that bear IgE antibodies.



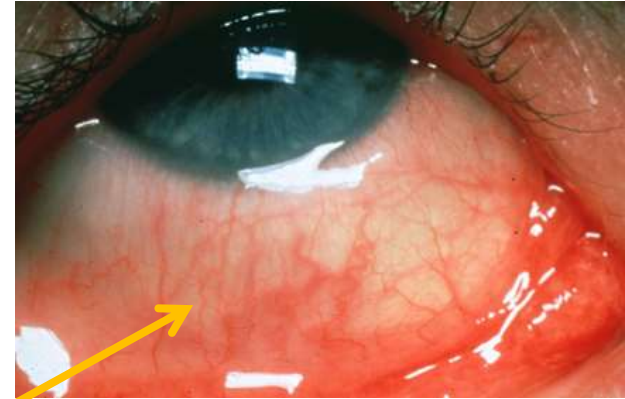
Degranulation of mast cells releases histamine



Histamine promotes vasodilatation & edema

- **Symptoms:** - itching
-Redness
-burning sensation
- watery discharge and
-mild photophobia

- **Signs :** -hyperemia and chemosis
-mild papillary reaction
-oedema of eyelids



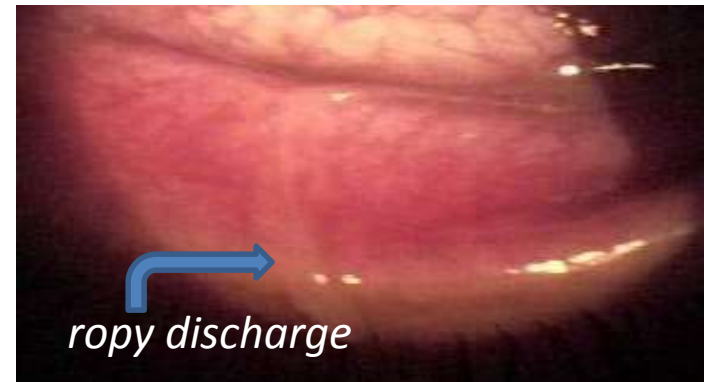
- *Treatment (severity dependent)*
 - *Elimination of allergens if possible*
 - *cold compresses*
 - *antihistamines oral/ topical (epinistine, fexofenadrine)*
 - *mast cell stabilizers (sodium cromoglycate, lodaximide)*
 - *Combination(ketotifen, patalon, azelastine)*
 - *topical corticosteroids*
 - *Immunosuppressant's (cyclosporin) for steroid resistant cases*

Vernal keratoconjunctivitis or spring catarrh

- Recurrent, Bilateral , self limiting allergic inflammation of the conjunctiva affecting children and young adults*
- more common in males*
- allergic disorder in which IgE and cell mediated immune mechanism play an important role*

- **Clinical features :**

- *98% bilateral, can be asymmetric*



- *Intense ocular itching, Lacrimation, Photophobia, blepharospasm, blurred vision, FB sensation , burning and difficulty opening eyes in the morning.*

- *Thick mucous ropy discharge , Pseudoptosis due to large papillae.*

- *Giant papillae on the superior Palpebral conjunctiva are the clinical hallmark.*

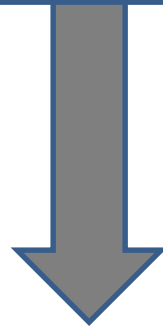
VKC Pathology:

Conjunctival epithelium : hyperplasia and downward projections into the sub epithelial tissue

Adenoid layer : cellular infiltration by eosinophil's , plasma cells , lymphocytes and histiocytes .

Fibrous layer : proliferation which later undergoes hyaline changes

- Conjunctival vessels: proliferation , increased permeability and vasodilation



ALL THESE LEADS TO MULTIPLE PAPILLAE
FORMATION IN UPPER TARSAL CONJUNCTIVA

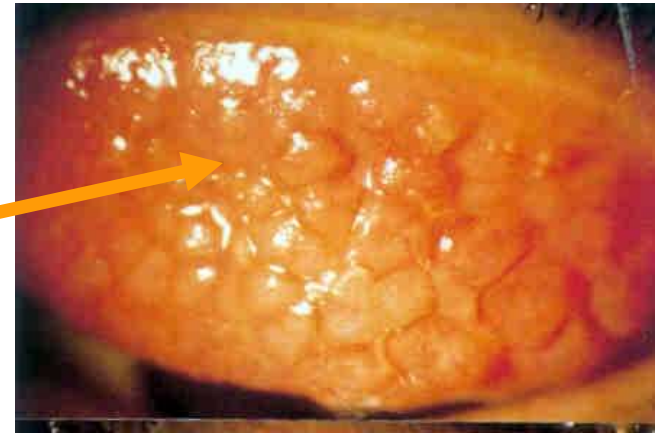


VKC Clinical Types

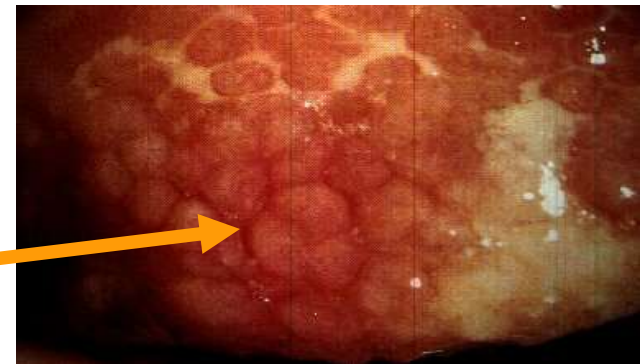
- palpebral
- bulbar
- mixed form

Palpebral form

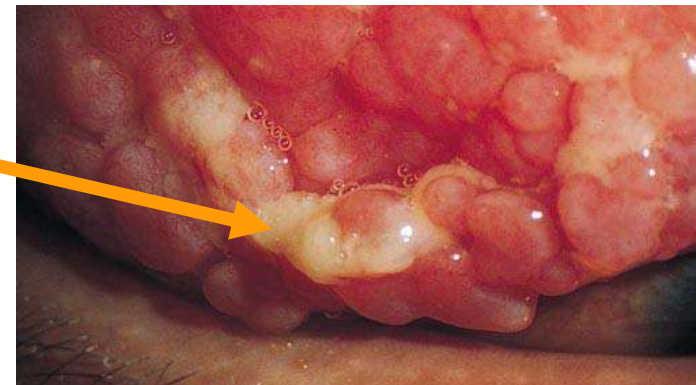
- Diffuse papillary hypertrophy, > on superior tarsus



- Papillae have a flat-topped polygonal appearance resembling COBBLESTONES

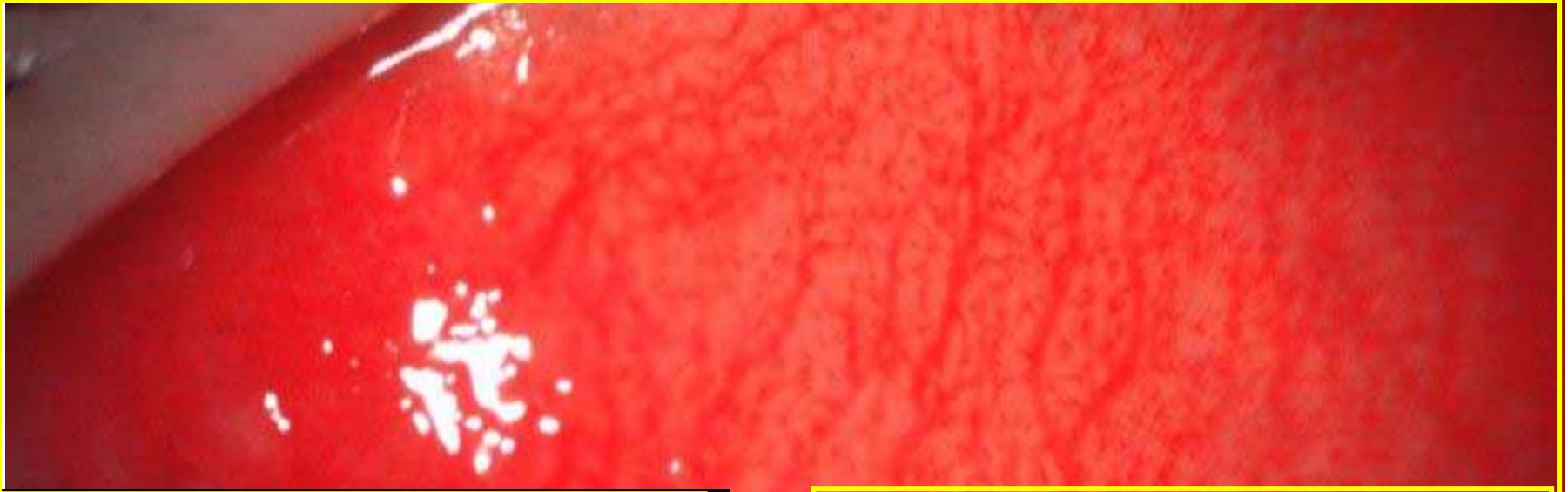


- Severe cases- Giant papillae, which may be coated with mucus



Progression of vernal conjunctivitis

Diffuse papillary hypertrophy, most marked on superior tarsus



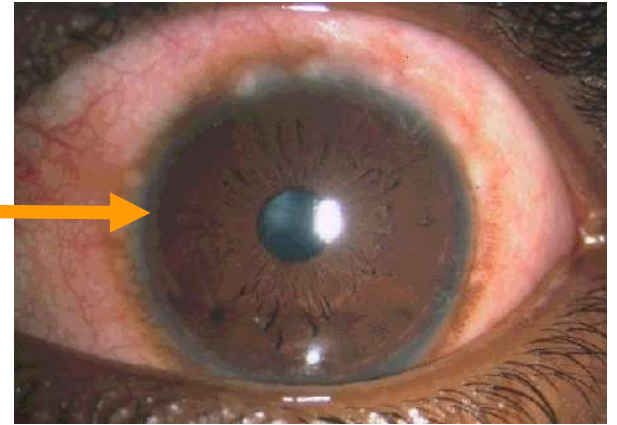
Formation of cobblestone papillae



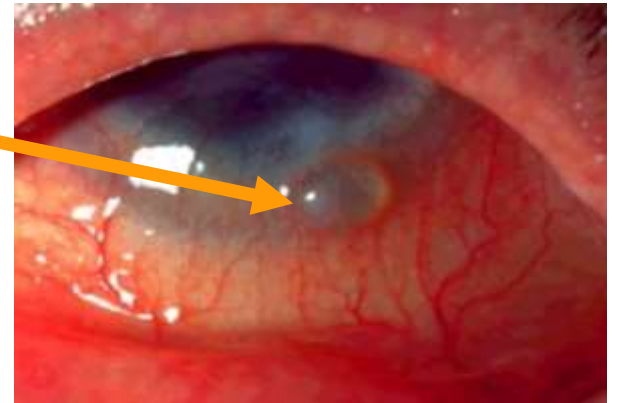
Rupture of septae -giant papillae

Limbal / Bulbar form

- May start as a thickening & opacification of limbus



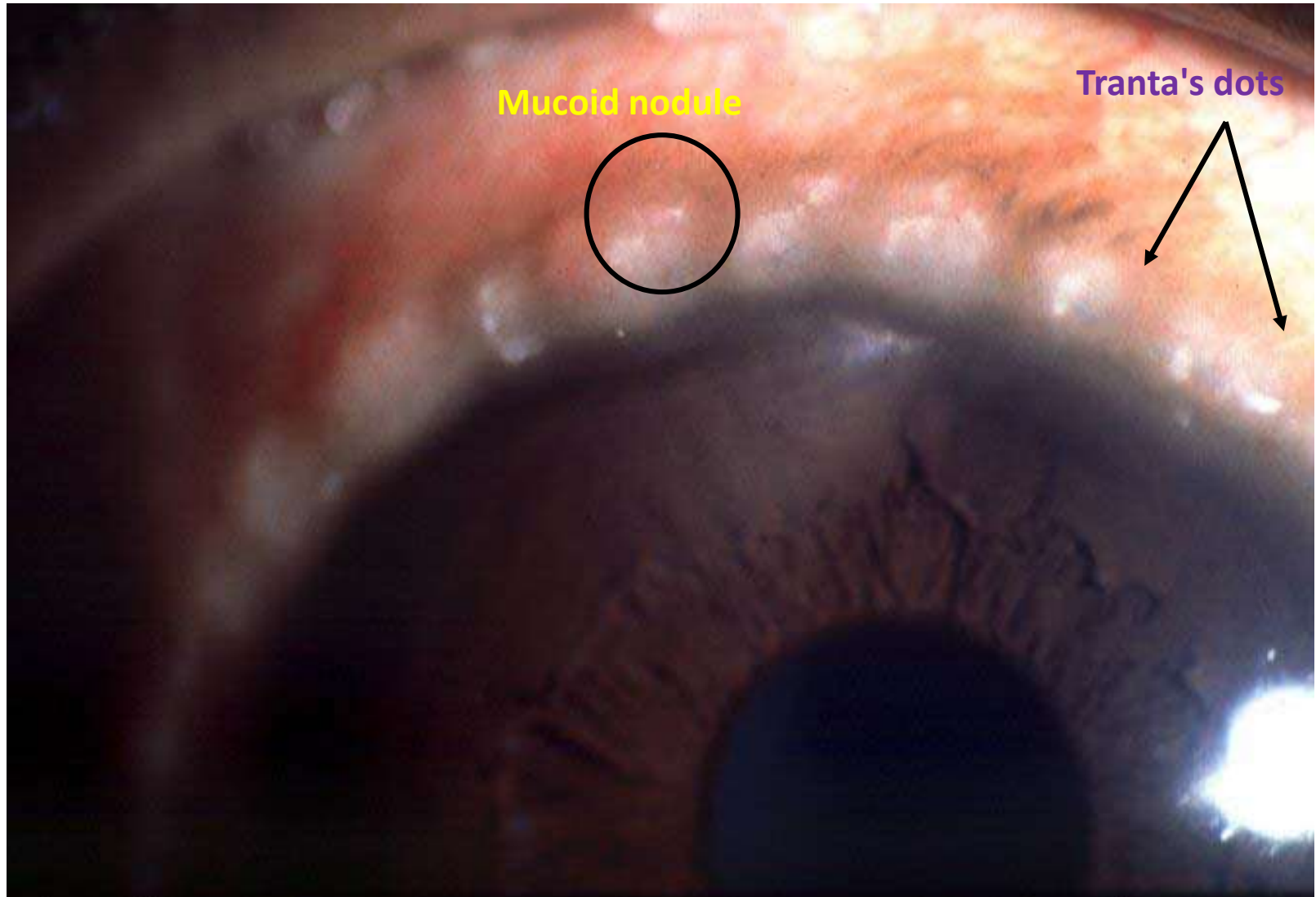
- Limbal nodules - Mucoïd nodules, which are gelatinous, elevated



- Horner-Trantas dots – composed mainly of eosinophils and epithelial debris (limbal apices)

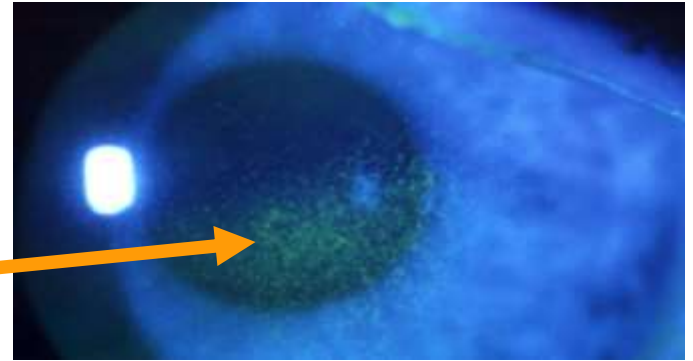


Limbal vernal

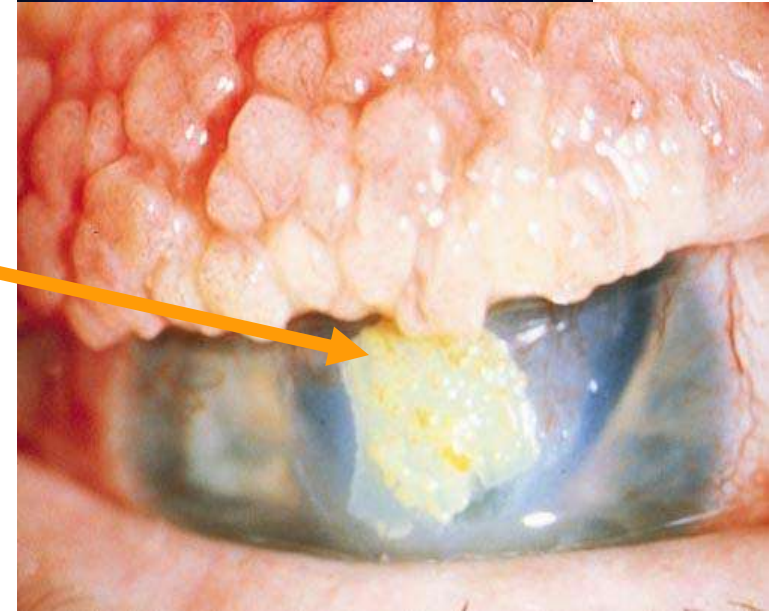


Vernal Keratopathy / Corneal involvement

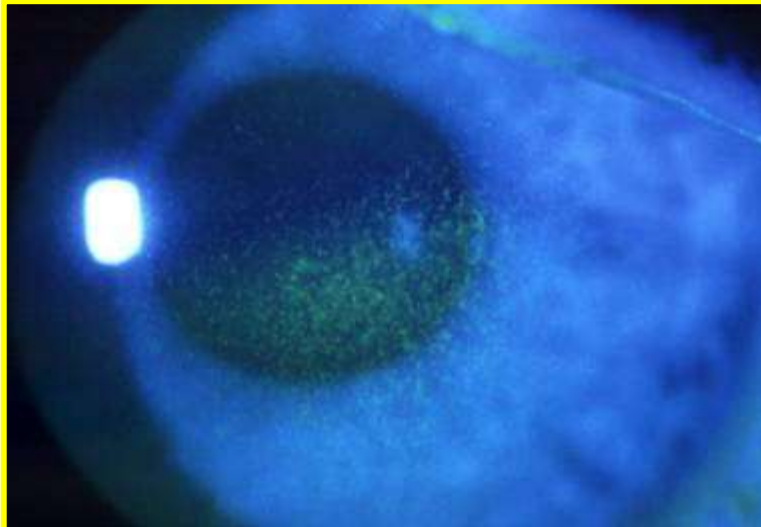
- Punctate epithelial erosions to macroerosions



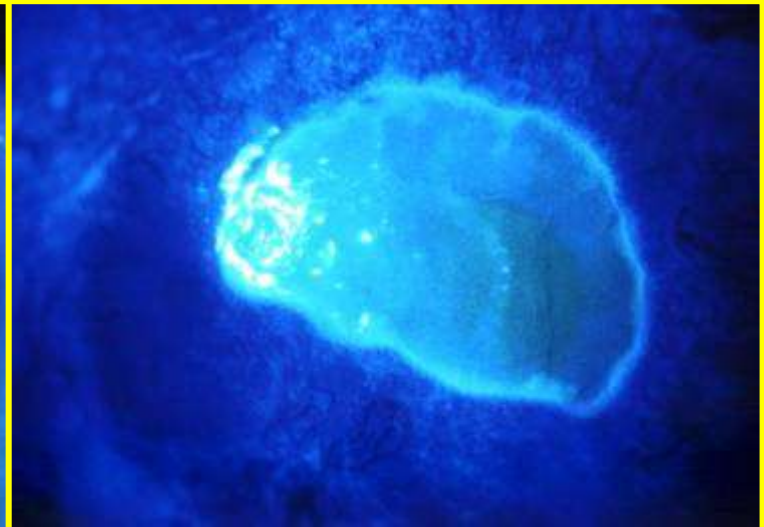
- Shield ulcers – Oval ulceration with thickened, opaque edges



Progression of vernal Keratopathy



Punctate epithelopathy



Epithelial macroerosions



Plaque formation (shield ulcer)



Sub epithelial scarring

Treatment

- *Topical antihistamine*
- *Mast cell stabilizers : sodium chromoglycate 2 % drops 4-5 times/day*
- *Topical steroid : Every 4 hrs. for 2 days followed by 3-4 times a day for 2 weeks .*

***MONITOR IOP TO PREVENT STEROID INDUCED
GLAUCOMA***

- *Acetyl cysteine (0.5%)*
- *Topical cyclosporine (1%): severe unresponsive case*

Systemic :

- I. Oral antihistamine : for itching
 - II. Oral steroid : short course for very severe non responsive case
- Treatment of large papilla supratarsal injection of long acting steroid or surgical removal
 - General measures: dark goggles , cold compress , change of place from hot to cold

Atopic keratoconjunctivitis

- *AKC is rare bilateral that more common adult(30-35Years)*
- *Long history of eczema*
- *May be associated with atopic dermatitis*
- *Asthma is also common with AKC*



Symptoms : itching , soreness , dry sensation , mucoid discharge, Hardening Eyelid, photophobia or blurred vision

Signs :

lid margins: inflamed with round posterior borders

conjunctiva : inferiorly involve, watery discharge, milky appearance , very fine papilla , hyperaemia scarring with shrinkage

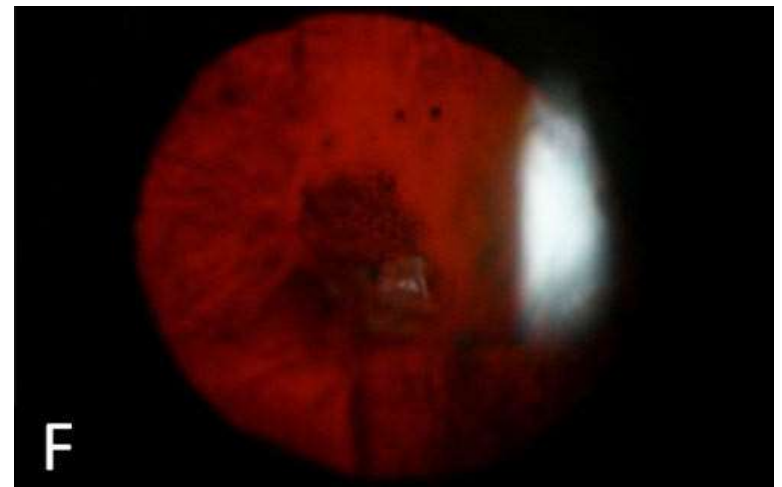
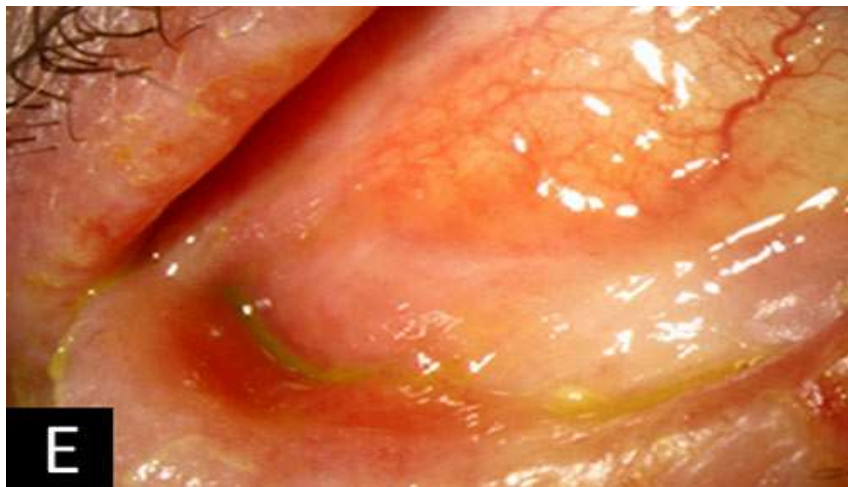
limbal: limbal involvement similar to limbal VKC

cornea-punctate epithelial keratitis in lower half, vascularization , plaque

A :-periocular eczema and corneal haze

C:-progression of the disease; dense pannus entering visual axis

E: symblepharon. F: posterior subcapsular cataract, which can be associated with atopic keratoconjunctivitis.



Treatment

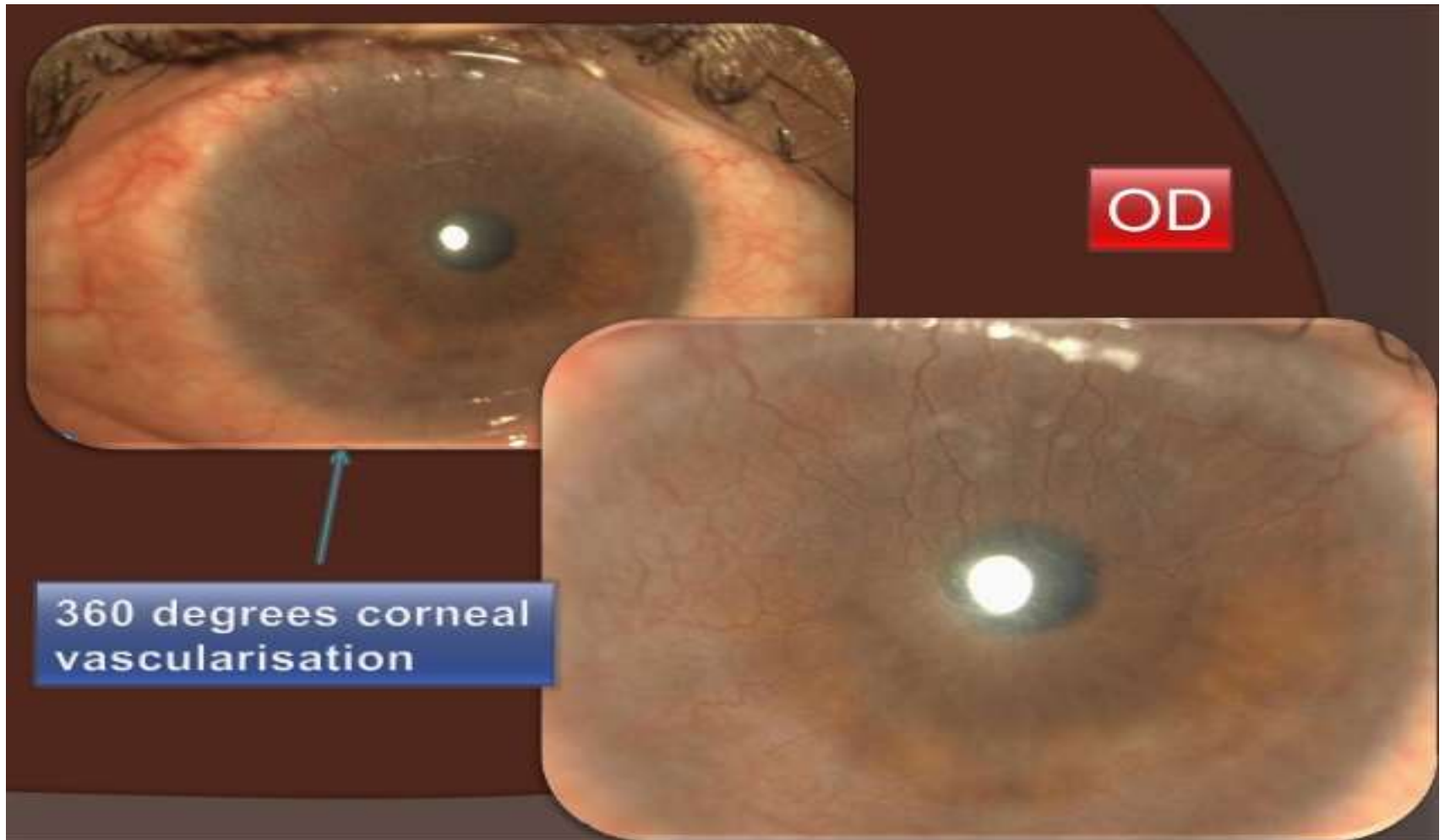
Local:-

- sodium chromoglycate
- Antihistamine
- Combination(antihistamine & mast cell strabilizer)
- topical steroids (fluromethalone 0.1%, loteprednol 0.2%)
- Supratarsal steriod injection in severe

others:-

- ❑ treat facial eczema and lid margin disease
- ❑ Immunosuppressive agents(cyclosporine,tacrolimus)

if untreated AKC can progress to ulceration, scarring, cataract, keratoconus, and corneal vascularization.

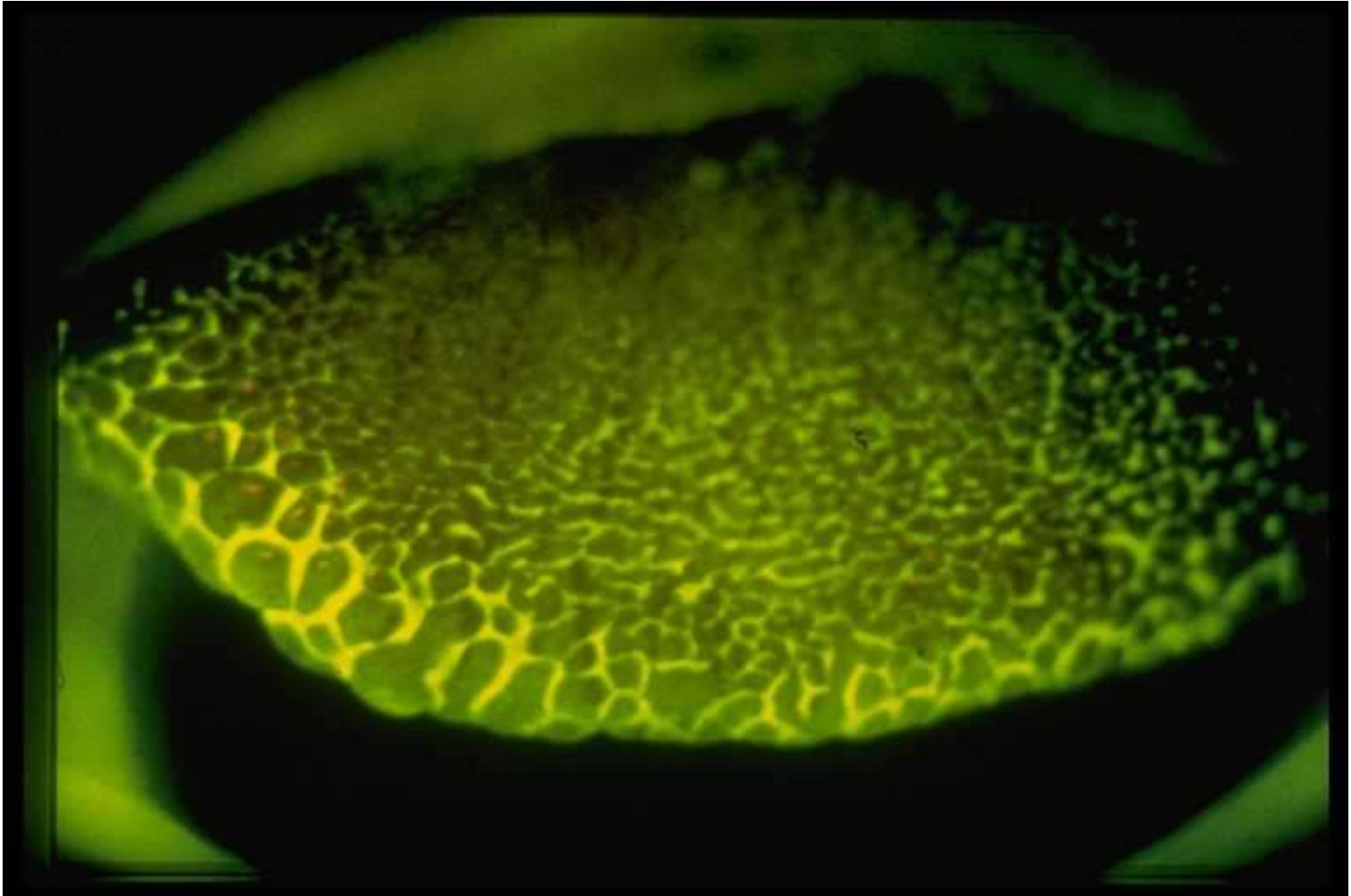


Giant papillary conjunctivitis

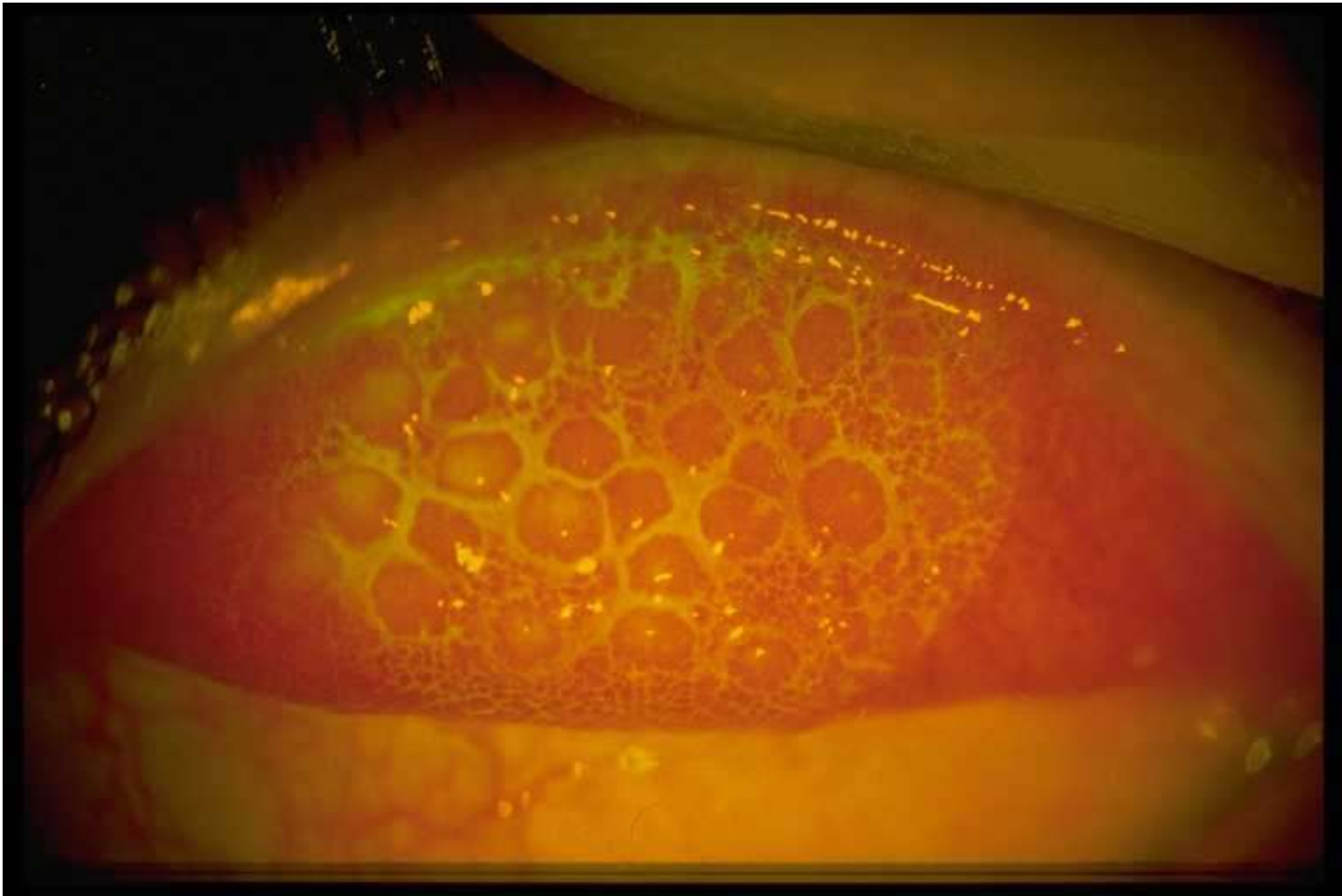
- *GPC most commonly develops after prolonged conjunctival contact with a foreign substance such as contact lens*
- *Also reported with exposure to ocular sutures or prosthesis*
- *Often it is not contact lens itself that causes GPC, but it is deposits or allergens*
- *Soft contact lens cause GPC more commonly which is caused by proteinaqueous deposits & cellular Debris on contact lens surface*



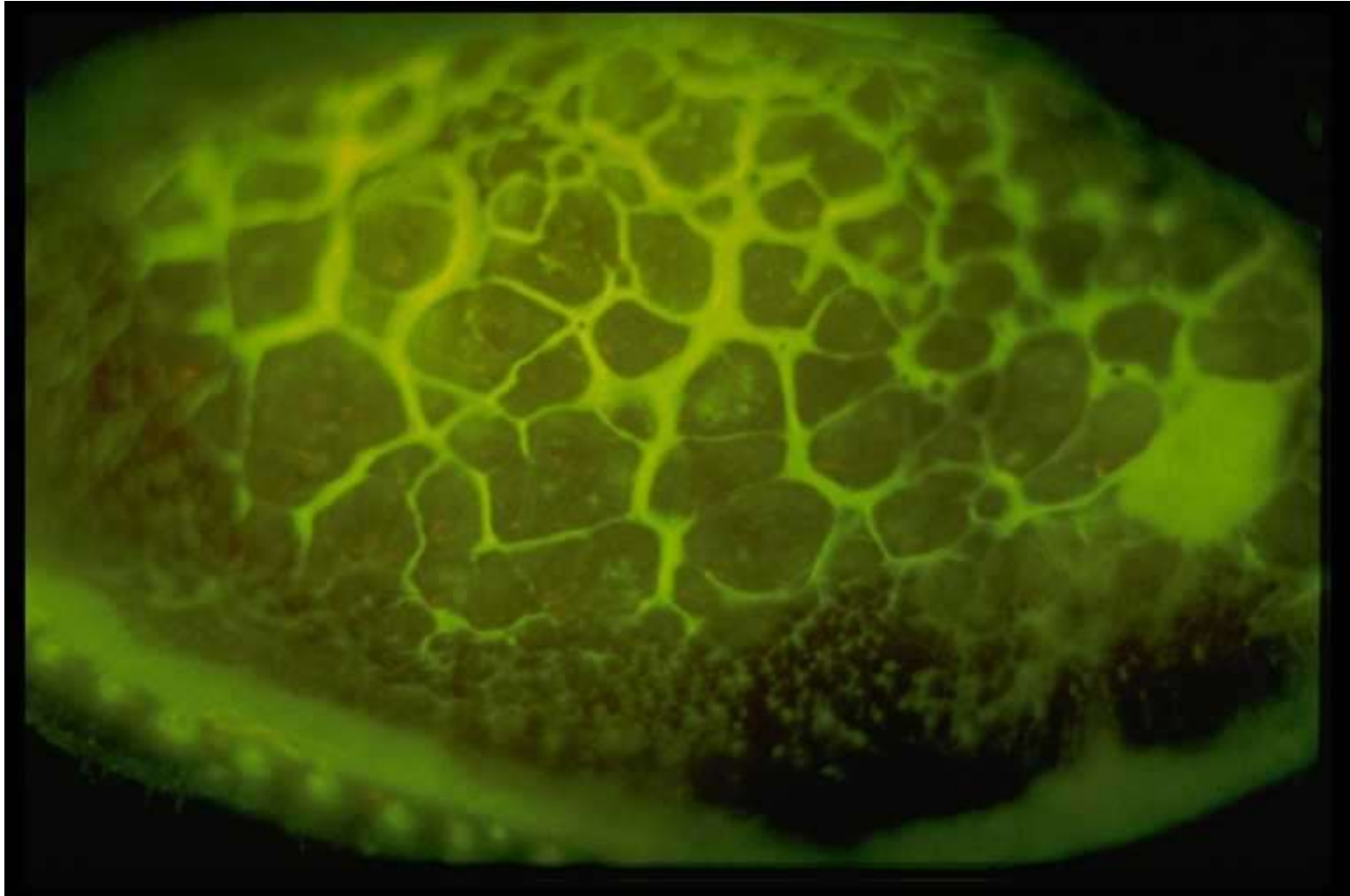
Papillary conjunctivitis-cobblestone-grade-2(flour)



Papillary conjunctivitis-cobblestone-grade 3



Papillary conjunctivitis-cobblestone-grade-4(flour)



• *SYMPTOMS AND SIGNS*

- *Thick mucous discharge, inflamed superior papillae and blurry vision, FB sensation, redness*
- *GPC staging*
 - *Stage 1:itching and decreased lens tolerance*
 - *Stage 2:blurred vision, superior tarsal papillae (>0.3mm)*
 - *Stage 3:excessive contact lens movement because tarsal papillae don't allow smooth movement of lid over CL*
 - *Stage 4:similar appearance to mild VKC*

» *Ref: illustrated ophthalmic pathologies-Dr. C. S. Miranda*

Treatment :

- *Removal of cause*
- *Discontinue contact lens wear & strong counseling*
- *Antihistamin*
- *Mast cell stabilizer*
- *Disodium chromoglycate*
- *Steroids can be use for Acute phase*

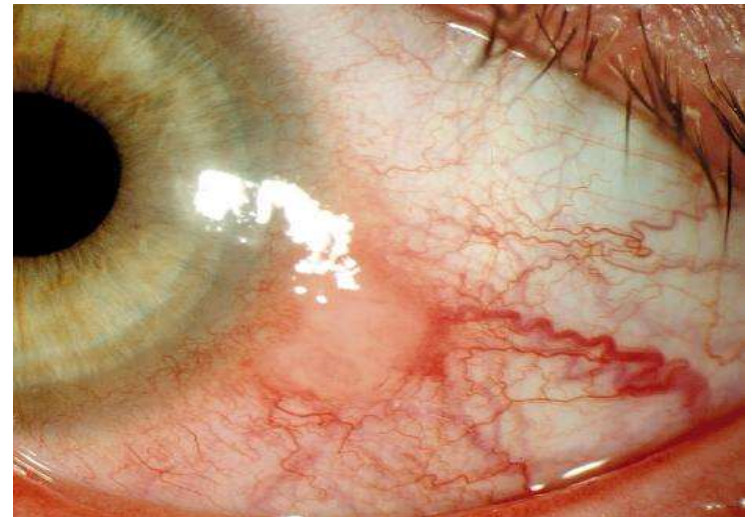
Phlyctenular conjunctivitis :



- *Nodular affection occurring as an allergic response by conjunctiva and corneal epithelium to some endogenous allergens .*
- ***Etiology -***
 - *Delayed hypersensitivity (type I) response to endogenous microbial proteins : Tuberculous protein Staphylococcal protein , parasitic protein .*

- **Pathology -**

- *Stage of nodule formation : exudation and infiltration of lymphocytes*
- *Stage of ulceration : Necrosis of apex of nodule leading to ulcer formation ,*
- *Stage of granulation*
- *Stage of healing .*



- ***Treatment -***

- *steroid eye drops ,*

- *Antibiotic drops (secondary infection)*

- *specific therapy*

- *Tuberculosis*

- *septic focus should be treated*

- *parasitic infestation - stool examination .*

- *General measures - improve health of child .*

Contact dermoconjunctivitis

- Contact dermatitisconjunctivitis is an allergic reaction in the conjunctiva and eyelid skin to medications (or other toxic products like cosmetics) applied there
- Etiology: delayed type hypersensitivity response to prolonged contact with chemicals and ophthalmic medicines(atropine, neomycin, soframycin)

Clinical Features:

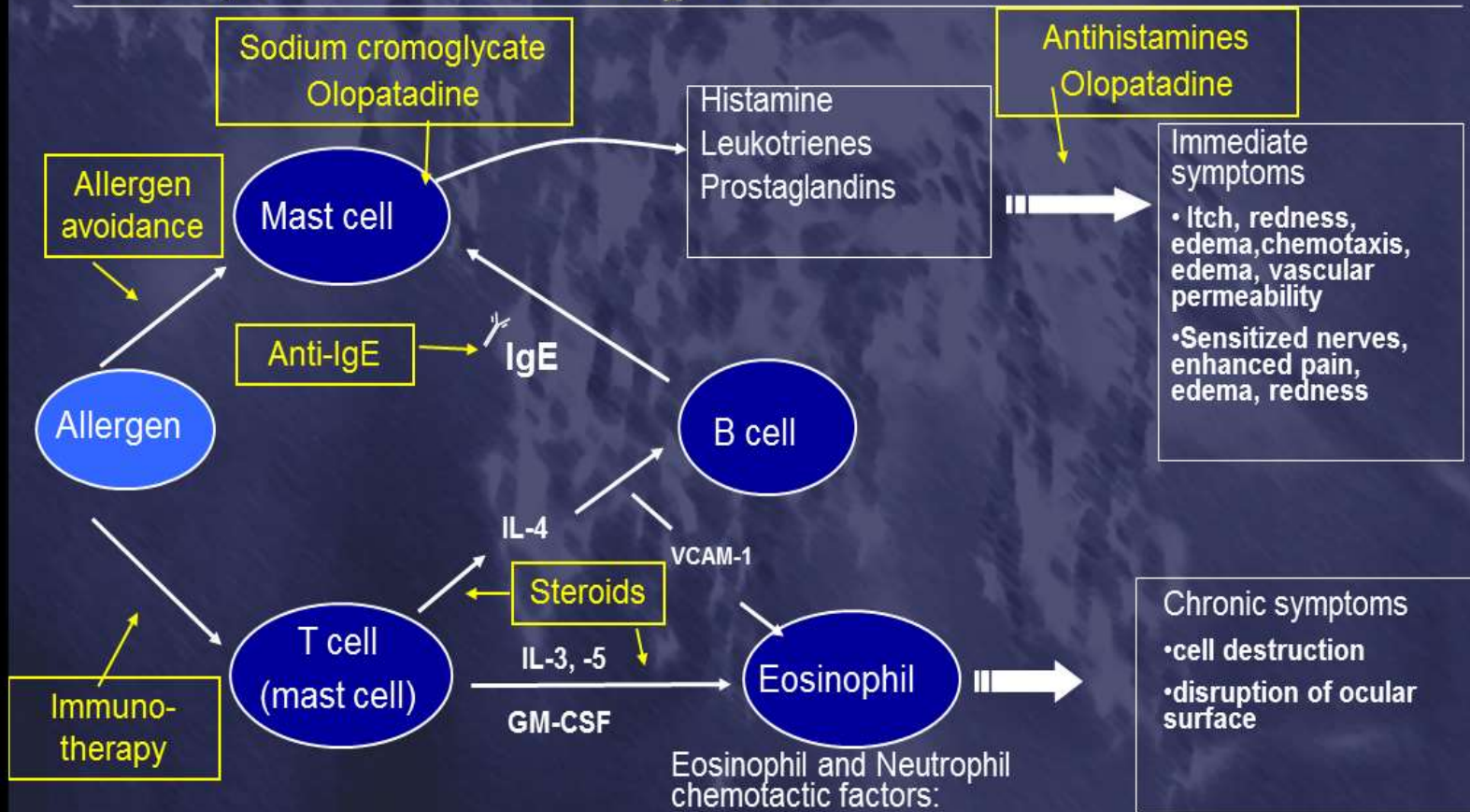
- Cutaneous involvement: weeping eczema around the area involved with medication
- Conjunctival response: lower fornix and lower palpebral conjunctiva



- Treatment:
- Discontinuing of causative chemical or medications
- Antihistamine
- NSAID
- Topical steroid eye drops
- Steroid ointment in involved surrounding area

Effect of treatment :

Modes and sites of action of allergic conjunctivitis therapies



REFERENCES

- *Comorehensive Ophthalmology-A.K.Khurana*
- *Clinical ophthalmology-Jack.J.Kanski*
- *Lippincott's microbiology*
- *Internet*

THANK YOU !!!

