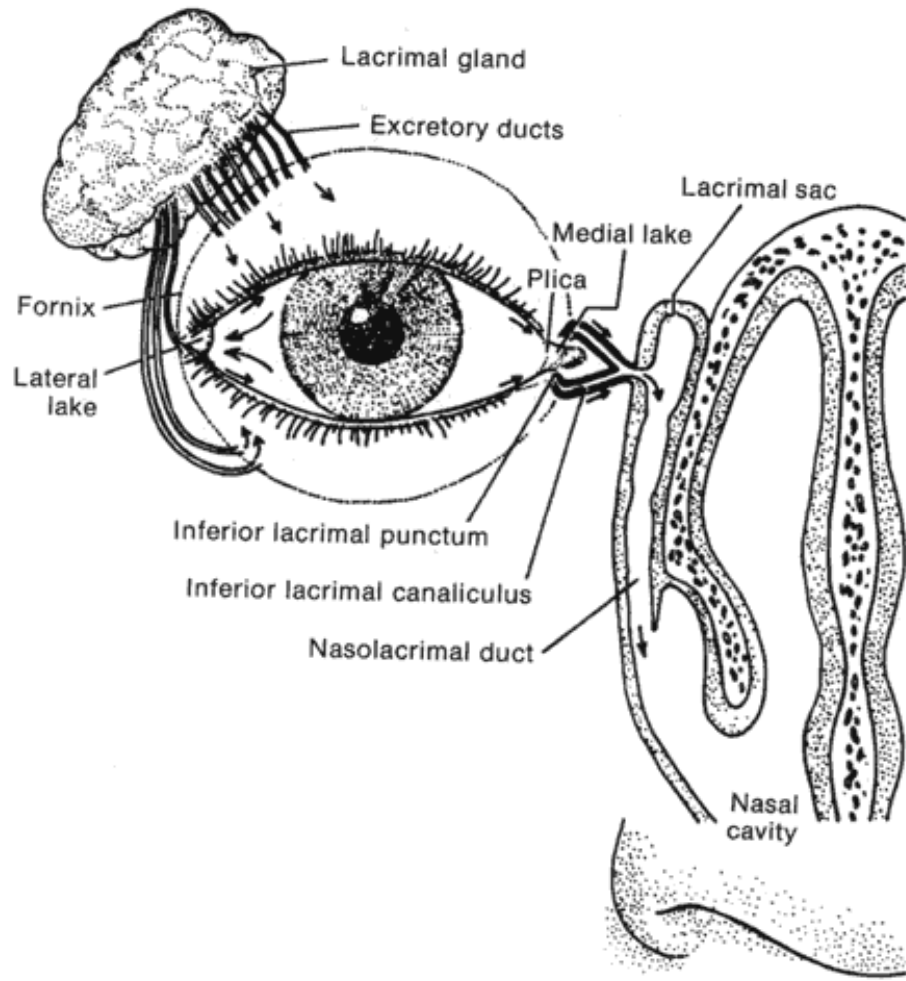




LACRIMAL APPARATUS

DR HASSANAIN ALREKABI

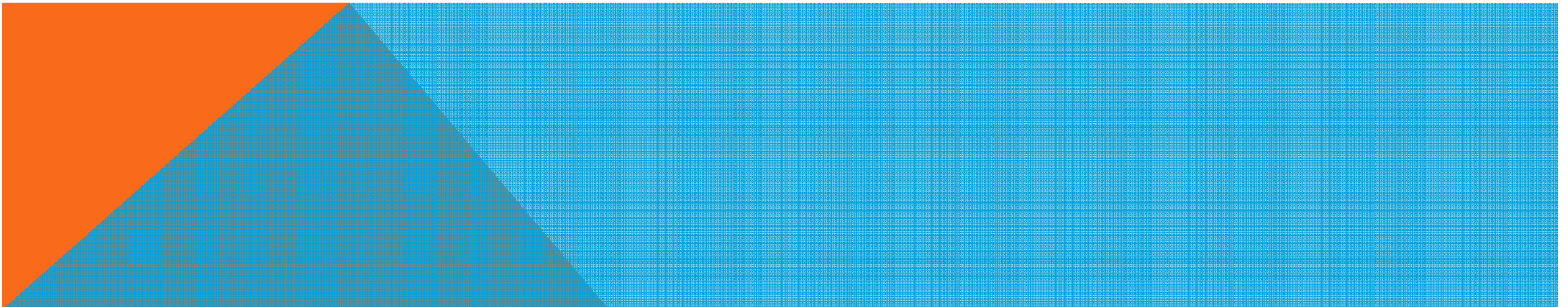


LACRIMAL APPARATUS

The tear film

The precorneal tear film has three layers:

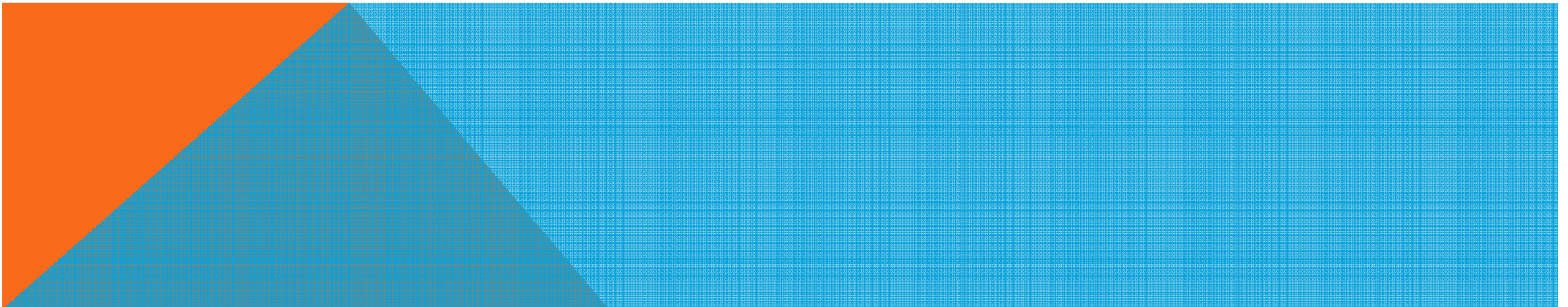
- 1- Superficial oily layer: Its main advantage is to prevent evaporation.
- 2- Middle aqueous layer: the thickest layer.
- 3- Inner mucin layer: Immediately adjacent to cornea: it covers corneal surface and converted it from hydrophobic into hydrophilic so the aqueous layer adherent to it.



LACRIMAL APPARATUS

Functions of tear:

- 1- Forms and maintains a smooth refracting surface over the cornea.
- 2- Maintains a moist environment for the conjunctival and corneal epithelium.
- 3- Bactericidal properties, as it has lysozymes and Igs (IgA).
- 4- Lubricates the lids.
- 5- Transports metabolic products (especially CO₂ & O₂) for cornea as it is an avascular structure, so the tear film transports these nutrients from the atmosphere to the cornea and vice versa.
- 6- Provides a pathway for WBCs in case of injury (enhances the migration of WBCs).
- 7- Dilutes and washes away noxious stimuli.



LACRIMAL APPARATUS

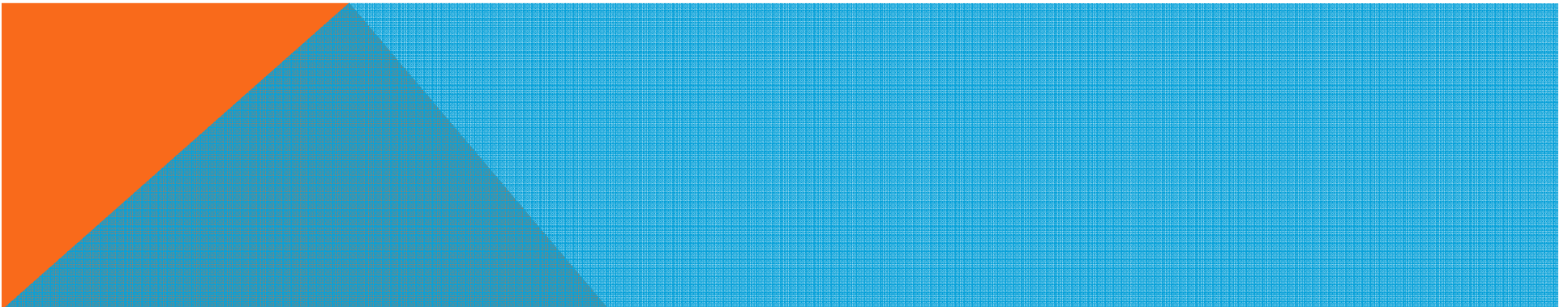
Causes of excessive watering:

1- Lacrimation:

Caused by reflex over-production of tear from irritation of the cornea and conjunctiva, and it is initiated also due to emotional stimulation. Lacrimation is usually associated with symptoms of underlying cause and treatment is usually medical (e.g. conjunctivitis, keratitis, and ect).

2- Epiphora :

Caused by mechanical obstruction of tear drainage, it is characterized by excessive watering which is exacerbated by a cold atmosphere and is least in a warm dry atmosphere (due to evaporation during warm weather). Treatment in most cases by surgery.

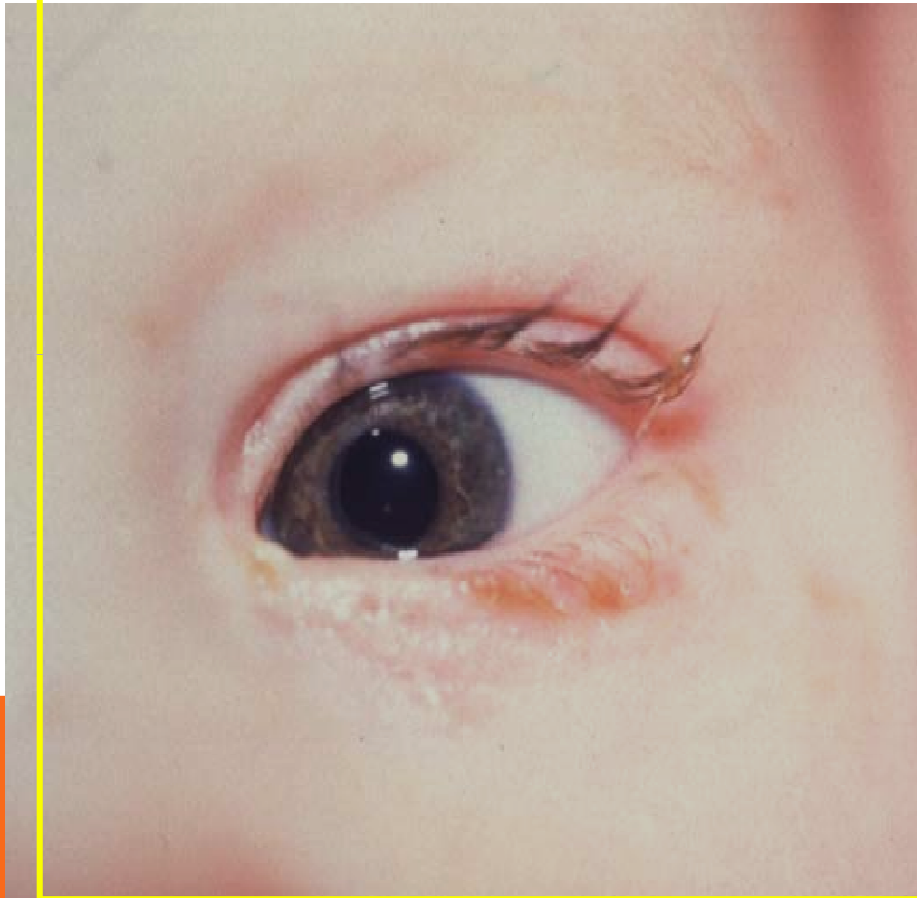


Congenital nasolacrimal duct obstruction

Caused by delayed canalization near valve of •

Hasner

On pressure reflux of purulent material from •



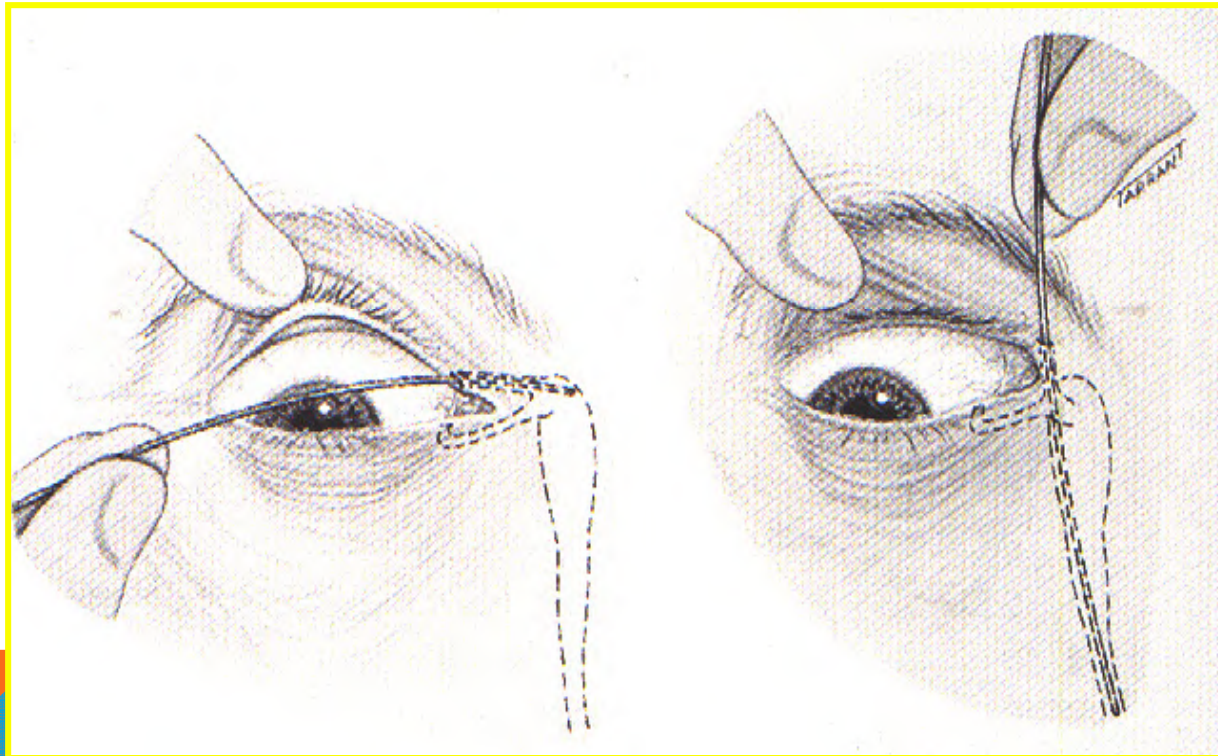
Epiphora and matting



Infrequently acute dacryocystitis

Treatment of congenital nasolacrimal duct obstruction

- Massage of nasolacrimal duct and antibiotic drops 4 times daily
- Improvement by age 12 months in 95% of cases



- If no improvement - probe at 12-18 months
- Results - 90% cure by first probing and 6% by second

Acute dacryocystitis

Usually secondary to nasolacrimal duct obstruction



Tender canthal swelling • May develop into abscess.
Mild preseptal cellulitis •

Treatment

- Systemic antibiotics and warm compresses
- DCR after acute infection is controlled

Chronic dacryocystitis

Epiphora and chronic or recurrent unilateral conjunctivitis



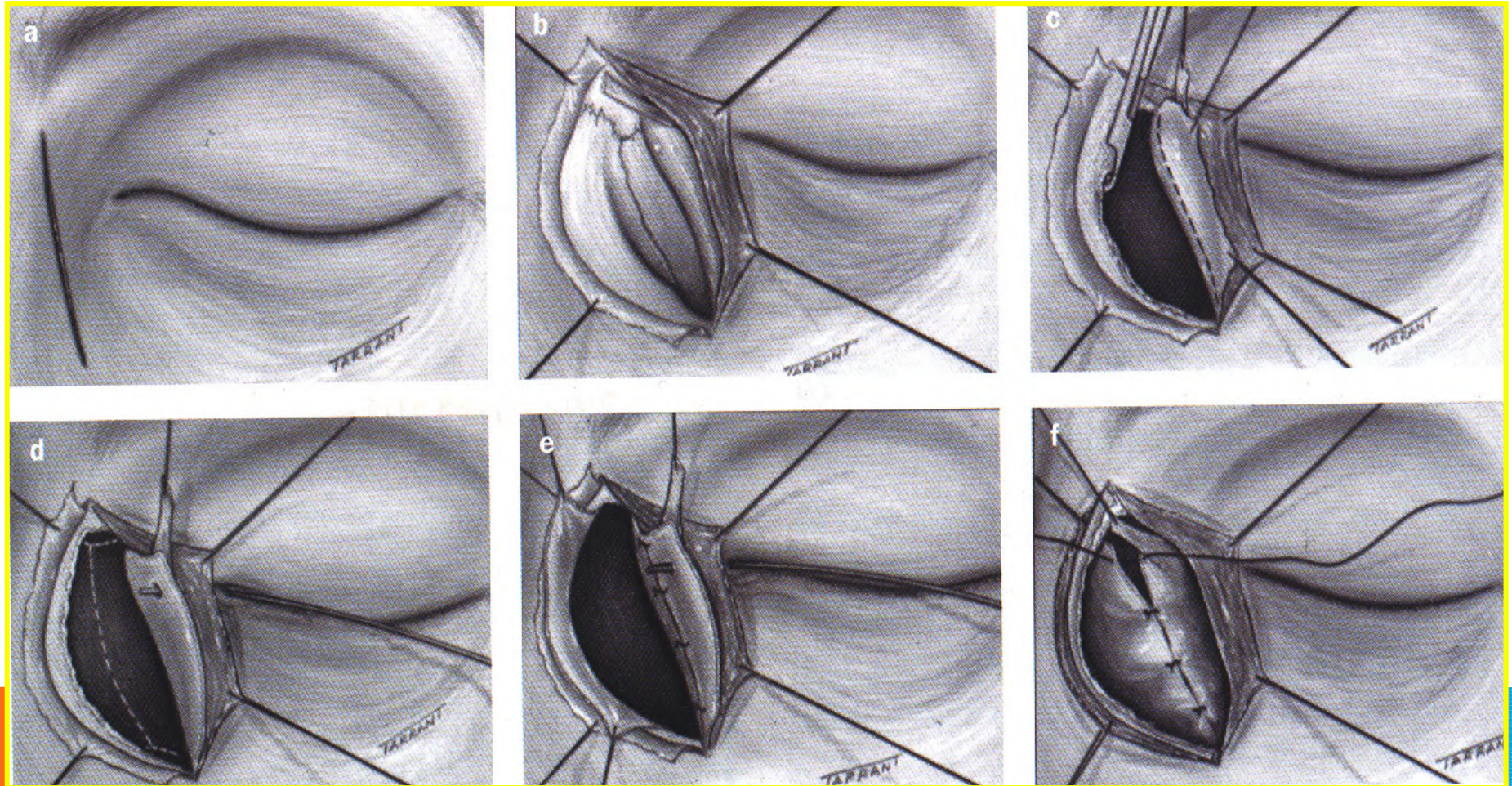
Painless swelling at inner canthus



Expressed mucopurulent material

Treatment - DCR

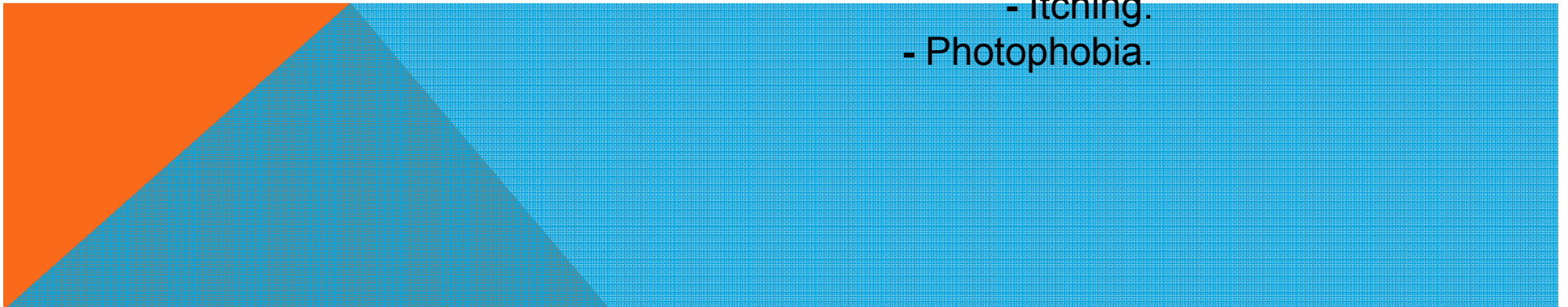
Dacryocystorhinostomy



**Dry eye (Keratoconjunctivitis Sicca
"KCS"):**

Symptoms:

- Burning sensation.
- Feeling of dryness (the patient himself tells you that his eyes are dry).
 - Continuous foreign body sensation.
- Mucus discharge (as the aqueous part is affected).
- Transient blurring and vision (as it forms and maintains a smooth refracting surface over the cornea).
 - Itching.
 - Photophobia.



DRY EYE

Causes of dry eyes:

1- Atrophy and fibrosis of lacrimal gland tissue

a- Pure KCS: Involving lacrimal gland alone (dry eye only and nothing else).

b- Primary sjögren's syndrome: Dry eye associated with dry mouth.

c- Secondary sjögren's syndrome: dry eye and mouth associated with systemic disease, most common one is rheumatoid arthritis, and other diseases are SLE, systemic sclerosis, hashimoto thyroiditis and primary biliary cirrhosis.

