

## AFFECTIONS OF LACRIMAL APPARATUS

### **Anatomy:**

- Consists of lacrimal gland, excretory ducts, lacrimal punctum, lacrimal canaliculi, nasolacrimal sac and nasolacrimal duct opening into the nasal cavity at nostrils.
- Lacrimal punctum about 3-5mm from median canthus.

### **Affection:**

- **Diseases affecting drainage apparatus (Excretory part).**
- **Diseases of tear producing glands (Secretory part).**

### **Diseases affecting drainage apparatus**

#### 1. ***Imperforate punctum:***

- Congenital absence of opening of lacrimal punctum.
- One or both (upper and lower) are affected.
- Unilateral or bilateral.

#### **Symptoms:**

- Epiphora. Not seen when lower is normal. Generally the case may not be presented for treatment when lower is normal.
- Close examination will reveal the absence of opening of punctum.

#### **Diagnosis:**

- **Flourescein dye test:** Install few props of Flourescein dye in the conjunctival sac. The dye appears at the nostrils within 30 sec if patency is there. Any delay means some interruption. No dye is seen when complete blockade.
- **Nasolacrimal flush test:** Introduce blunt lacrimal cannula in the dorsal or ventral lacrimal punctum. Flush with 5ml NSS. See for the solution through other punctum or at the nostrils. Ballooning of the affected punctum is seen when no opening.

#### **Treatment:**

- Go for Nasolacrimal flushing.
- When ballooning, cut the ballooned part with scissors.
- Insert No. 2-0 monofilament nylon or nay catheter of appropriate size into the canaliculi through creates opening and keep it as such for 10-15 days.
- Use topical antibiotics plus corticosteroids for 10-15 days.
- Remove the nylon/catheter after complete healing.

## 2. Obstruction of punctum:

- Generally seen in the lower punctum due to inflammatory exudates, foreign bodies.
- May lead to the development of dacrocystitis, conjunctivitis and keratitis.

### Symptoms:

- Epiphora.
- Associated conjunctivitis/keratitis.

### Diagnosis:

- Flourescein dye test.
- Nasolacrimal flush test.

### Treatment:

- Nasolacrimal flushing with NSS helps to remove the exudates/foreign body.
- Use topical antibiotics plus corticosteroids for 7-9 days.

## 3. Obstruction of canaliculi:

- Usually lower is affected.
- May be unilateral or bilateral.
- Congenital or acquired due to inflammatory exudates/foreign body.
- May result due to stenosis or fibrosis of the canaliculi.

### Symptoms:

- Epiphora.
- Associated conjunctivitis/dacrocystitis.

### Diagnosis:

- **Nasolacrimal flush test:** If congenital obstruction/absence - no flushing. If stenosis/fibrosis – difficult flushing. If obstruction due to foreign body, gets removed.
- **Dacrocystography:** Using Digenol, outlines the drainage apparatus.

### Treatment:

- Nasolacrimal flushing with NSS helps in removal of the FBs.
- Put catheter/monofilament nylon into the canaliculi to maintain the patency.
- Use topical antibiotics plus corticosteroids for 7-9 days.
- Remove catheter/nylon after 7-9 days.

## 4. Dacrocystitis:

- Inflammation of Nasolacrimal sac.

### Symptoms:

- Epiphora.
- Typical swelling just ventral to the median canthus. On pressing pus oozes out from the lacrimal punctum.
- May be associated with conjunctivitis.

### Diagnosis:

- Clinical signs,
- Nasolacrimal flush test.

**Treatment:**

- Nasolacrimal flushing with NSS to remove the exudates etc.
- Put catheter/monofilament nylon into the drainage apparatus to maintain the patency (optional).
- Use topical antibiotics plus corticosteroids for 7-9 days.
- Remove catheter/nylon after 7-9 days.

**Diseases affecting SECRETORY apparatus**

1. **Hyposecretion:** There is decreased tear production due to inadequacy of lacrimal glands.

**Etiology:**

- Ageing.
- Sjogrin's Syndrome – atrophic changes of lacrimal gland leading to Dry eye (KCS) and Rheumetoid arthritis (Human beings).
- Relay day syndrome (Human beings). Persons sleep with open eyes.
- Conjunctival cicatrisation due burns etc.

**Treatment:**

- Artificial tears 4-6 times daily.
- Topical antibiotics may be used to prevent infection.
- Treatment of the primary cause.

2. **Hypersecretion:** Characterized by more tear production (Epiphora).

**Etiology:**

- Allergy of the gland.
- Irritation of the gland due to other affections.
- Strong light
- **Crocodile Tears:** seen in human beings due to stimulation of the facial nerve which sometimes supplies branches to the lacrimal gland.

**Treatment:** As per the cause.

3. **Dacroadenitis:** Acute or chronic inflammation of the lacrimal gland. Uncommon.

**Etiology (Acute):**

- Abscess in the head region near to the lacrimal gland.
- Conjunctival or lacrimal infection.
- Systemic diseases like distemper, senility.

**Symptoms:**

- Pain and tenderness of the gland.

**Treatment:**

- Hot compression.
- Treatment of primary cause.
- Use topical antibiotics plus corticosteroids for 7-9 days.
- Systemic antibiotics.

**Etiology (Chronic):**

- TB.
- Syphilis.

**Treatment:**

- Treatment of the primary cause.
- Use topical antibiotics plus corticosteroids, gives temporary relief. Use topical antibiotics plus corticosteroids.