

Eyelid

Lecture three

الدكتور مقّداد فوّاد

Contact Eczema

- **Epidemiology:** Light-skinned patients and patients susceptible to allergy are frequently affected.
- **Etiology:** Contact eczema is caused by an antigen – antibody reaction in patients with intolerance to certain noxious substances. *Cosmetics, adhesive bandages, or eyedrops and eye ointments* are often responsible, particularly the *preservatives* used in them such as benzalkonium chloride.

Benzalkonium chloride solution is a topical antiseptic. It works by preventing infection.is used for: Treating minor cuts, scrapes, and burns.

Contact eczema.



This disorder is frequently caused by preservatives such as those used in eyedrops. They cause typical reddening, swelling, and lichenification of the skin of the eyelid.

- **Symptoms:** Reddening, swelling, lichenification, and severe itching of the skin of the eyelid occur initially, followed by scaling of the indurated skin with a sensation of tension .
- **Treatment:** This consists of eliminating the causative agent. (Allergy testing may be necessary.) Limited use of corticosteroids usually brings quick relief of symptoms.
- **Prognosis:** The prognosis is good if the cause can be identified.

Edema

- **Definition:** This refers to swelling of the eyelid due to abnormal collection of fluid in the subcutaneous tissue.
- **Epidemiology:** Edema is a frequently encountered clinical symptom.
- **Etiology:** The skin of the eyelid is affected intensively by **infectious** and **allergic processes**. With the upper eyelid's relatively thin skin and the loose structure of its subcutaneous tissue, water can easily accumulate and cause edema.
- **Symptoms:** Depending on the cause (Table 2.2), the intensity of swelling in the eyelid will vary. The location of swelling is also influenced by gravity and can vary in intensity. For example, it may be more intense in the early morning after the patient rises than in the evening .

Edema.



With its relatively thin skin and its subcutaneous tissue that contains little fat, the upper eyelid is particularly susceptible to rapid fluid accumulations from pathologic processes.

Differential diagnosis of edema

Criteria	Inflammatory edema	Noninflammatory edema
Symptoms	<ul style="list-style-type: none">❖ Swelling❖ Reddening❖ Sensation of heat❖ Painful❖ Usually unilateral	<ul style="list-style-type: none">❖ Swelling❖ Pale skin❖ Cool skin❖ Painless❖ Usually bilateral
Possible causes	<ul style="list-style-type: none">❖ Hordeolum❖ Abscess❖ Erysipelas❖ Eczema❖ Associated with:<ul style="list-style-type: none">– paranasal sinus disorders– orbital cellulitis– dacryoadenitis	<ul style="list-style-type: none">❖ Systemic disorder:<ul style="list-style-type: none">– heart– kidneys– thyroid gland❖ Allergy such as Quincke's edema

differential diagnosis for inflammatory and noninflammatory edemas.

- **Treatment:** This depends on the cause of the disorder.
- **Clinical course and prognosis:** This depends on the underlying disorder.

Quincke's edema

- Also known as angioedema, angiooedema,, and angioneurotic edema, is the rapid swelling (edema) of the dermis, subcutaneous tissue, mucosa and submucosal tissues. It is very similar to urticaria, but urticaria, commonly occurs in the upper dermis.



Quincke's edema

Seborrheic Blepharitis

- **Definition**

This disorder is characterized by **scaly inflammation of the margins of the eyelids**. Usually both eyes are affected.

Etiology: There are often *several contributing causes*.

1. The constitution of the skin,
2. seborrhea,
3. refractive anomalies,
4. hypersecretion of the eyelid glands,
5. external stimuli such as dust, smoke, and
6. dry air in air-conditioned rooms

- **Symptoms and diagnostic considerations:**

- 1. *Slight inflammatory changes of*** the margins of the eyelids such as thickening.
- 2. *The eyelashes adhere*** due to the increased secretion from the glands of the eyelids,
- 3. *Scaly deposits form***

The disorder will often be accompanied by chronic conjunctivitis.

Treatment:

- This depends on the cause of the disorder (see Etiology).
- The scales and crusts can usually be softened with *warm olive oil* and then easily removed with a cotton-tipped applicator.
- In more severe cases, recommended treatment includes expressing the glands of the eyelid and local application of antibiotic ointment.
- Treatment with topical steroids may be indicated under certain conditions.

Prognosis: The prognosis is good although the clinical course of the disorder is often quite protracted.

Seborrheic blepharitis.



The margins of the eyelids are slightly reddened with adhesion of the eyelashes. Scaly deposits form along the margins of the eyelids.

Herpes Simplex of the Eyelids

- **Definition**

Acute, usually unilateral eyelid disorder accompanied by skin and mucous membrane vesicles.

- **Etiology:** Infection of the skin of the eyelids results *when latent herpes simplex viruses present in the tissue are activated by ultraviolet radiation*. The virus spreads along sensory nerve fibers from the trigeminal ganglion to the surface of the skin.

- **Symptoms:** *Typical clustered eruptions of painful vesicles* filled with serous fluid frequently occur at the junction of mucous membranes and skin . Later the vesicles dry and crusts form. Lesions heal without scarring. The disorder is usually unilateral.

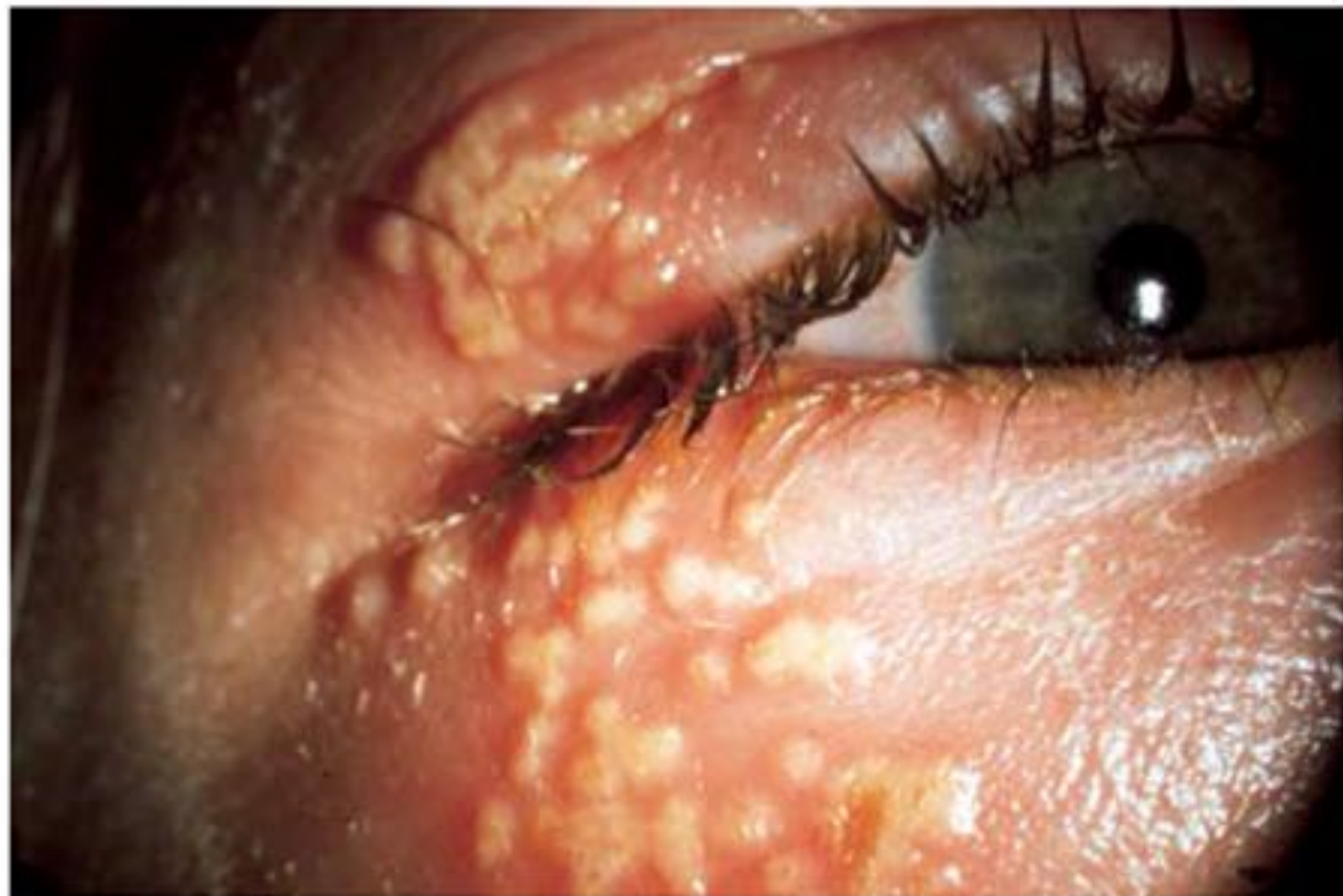
- **Treatment:**

- Topical use of *virostatic agents* is indicated.

- The patient should *avoid intense ultraviolet radiation* as a prophylactic measure against recurrence.

- **Prognosis:** The prognosis is good, although the disorder frequently recurs.

Herpes simplex of the eyelids.



Painful vesicles filled with serous fluid erupt in clusters at the angle of the eye.

Herpes Zoster Ophthalmicus

- **Definition**

Facial rash caused by the varicella-zoster virus.

- **Epidemiology:** The disorder usually affects immunocompromised persons between the ages of 40 and 60 who have underlying disorders.
- **Etiology:** The disorder is caused by the *varicella-zoster virus, which initially manifests itself as chickenpox*. If activation or reinfection occurs, the latent neurotropic viruses present in the body can lead to the clinical syndrome of herpes zoster ophthalmicus .

- **Symptoms:**

- The incubation period is 7–18 days
- After which severe pain occurs in the area supplied by the first branch of the trigeminal nerve (the ophthalmic nerve with its frontal, lacrimal, and nasociliary branches).
- Prodromal symptoms of **erythema, swelling, photosensitivity, and lacrimation** may occur before the *characteristic clear watery vesicles* appear.
- **The vesicles burst** and brownish scabs (A crust discharged from and covering a healing wound) form, which are later shed.
- Blepharitis is also present in 50–70% of all cases.
- As herpes zoster usually affects immunocompromised persons, the patient should be examined for a possible underlying disorder.

- The skin sensitivity at the tip of the nose should be evaluated on both sides in the initial stage of the disorder.
- Decreased sensitivity to touch suggests involvement of the nasociliary branch of the ophthalmic nerve, which can lead to severe intraocular inflammation.

- **Treatment:** This includes topical virostatic agents and systemic acyclovir.
- **Complications:** Involvement of the nasociliary branch of the ophthalmic nerve can lead to severe intraocular inflammation.
- **Prognosis:** The skin lesions heal within three to four weeks; scars may remain. Often neuralgiform pain and hypersthesia may persist.

Herpes zoster ophthalmicus.



The facial rash of herpes zoster is caused by the neurotropic varicella-zoster virus. After the clear watery vesicles burst, brownish scabs form, which are later shed.

Eyelid Abscess

- **Definition**

- Circumscribed collection of pus with severe inflammation, swelling, and subsequent fluctuation.
- **Etiology:** An abscess of the upper or lower eyelid can form as a sequela of minor trauma, insect sting, or spread of inflammation from the paranasal sinuses.
- **Symptoms:** The severe inflammation and swelling often make it impossible actively to open the eye. The contents of the abscess can fluctuate during the clinical course of the disorder. Spontaneous perforation with pus drainage can occur.
- **Treatment:** Oral or intravenous antibiotics and dry heat are indicated. A stab incision can relieve tension at the onset of fluctuation.
- **Prognosis:** The prognosis is generally good. **Orbital cellulitis** or **cavernous sinus thrombosis** can occasionally occur as a sequela of eyelid abscess, especially when located at the medial angle of the eye. This represents a life-threatening complication.

Eyelid abscess.



Severe inflammation and swelling make it impossible actively to open the eye.

Tick Infestation of the Eyelids

- **Ticks** have been known to infest the eyelids. They are thought to be vectors of *borreliosis* and can cause encephalitis. Treatment consists of mechanical removal of the parasites.
- **borreliosis** caused by *spirochetal bacteria from the genus Borrelia*. It is classified as a zoonosis, as it is transmitted to humans from a natural reservoir among small mammals and birds **by ticks** that feed on both sets of hosts



Louse Infestation of the Eyelids

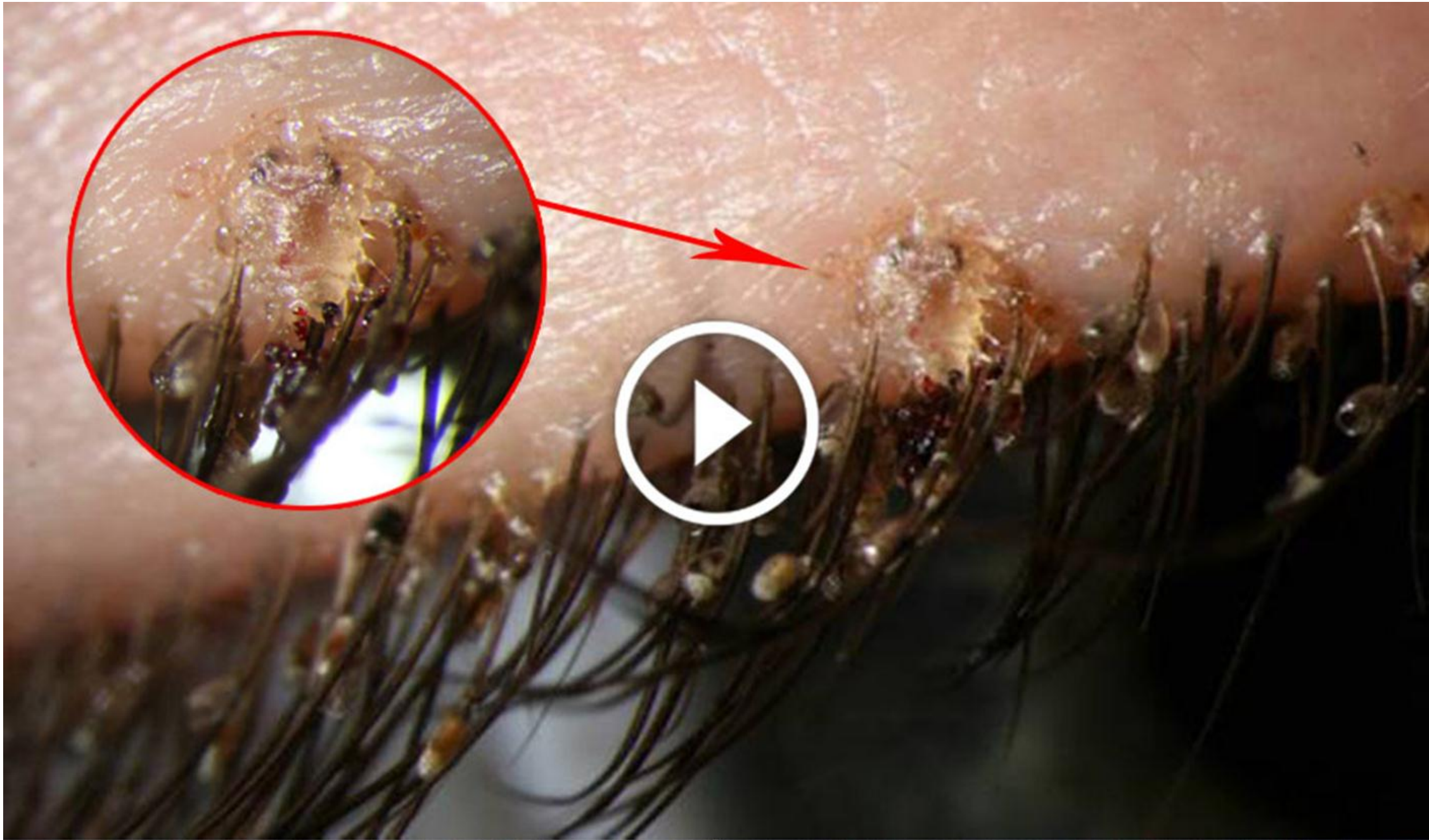
- This refers to infestation of the margin of the eyelid with *crab lice* as a result of poor hygienic conditions. The small oval nits القمل الصغير؛ بيض القمل؛ frequently hang from the eyelashes, causing inflammation of the margin of the eyelid with severe itching.
- **Treatment**
 - Mechanical removal with forceps is a time consuming but effective treatment.
 - **Application of a 2% mercury precipitate ointment** over an extended period of time is also effective.



Louse infestation of the eyelids.



Under poor hygienic conditions, crab lice can infest the bases of the eyelashes.



Disorders of the Eyelid Glands

(Hordeolum and Chalazion)

Hordeolum

- **Definition**

A **hordeolum** is the result of an acute bacterial infection of one or more *eyelid glands*.

- **Epidemiology and etiology:** *Staphylococcus aureus* is a common cause of hordeolum.

- **External hordeolum** involves infection of the glands of Zeis or Moll.

- **Internal hordeolum** arises from infection of the meibomian glands.

- Hordeolum is often associated with **diabetes, gastrointestinal disorders, or acne.**

- **Symptoms and diagnostic considerations:**

- Hordeolum presents as ***painful nodules with a central core of pus.***

- **External hordeolum** appears on the *margin of the eyelid* where the sweat glands are located .

- **Internal hordeolum** of a sebaceous gland is usually ***only revealed by everting the eyelid*** and usually ***accompanied by a more severe reaction such as conjunctivitis or chemosis*** of the ***bulbar conjunctiva.***

- Pseudoptosis and swelling of the preauricular lymph nodes may also occur.

- **Internal hordeola may lead to Chalazia**

- **Differential diagnosis:**

1. Chalazion (non tender to palpation) and
2. Inflammation of the lacrimal glands (rarer and more painful).
3. Basal Cell Carcinoma
4. Preseptal Cellulitis
5. Sebaceous Gland Carcinoma (adenocarcinoma)
6. Squamous Cell Carcinoma

Treatment: Antibiotic ointments and application of dry heat (red heat lamp) will rapidly heal the lesion.

- **Clinical course and prognosis:** After eruption and drainage of the pus, the symptoms will rapidly disappear. The prognosis is good.

External hordeolum.



The painful inflamed hordeolum is usually caused by *Staphylococcus aureus* infection of an eyelid gland.

Chalazion

- **Definition**

Firm nodular bulb within the tarsus.

- **Epidemiology and etiology:** Chalazia occur relatively frequently and are caused by a **chronic granulomatous inflammation due to buildup of secretion from the meibomian gland.**
- **Symptoms:** The firm painless nodule develops very slowly. Aside from the cosmetic problems, it is usually asymptomatic .

Differential diagnosis:

1. Hordeolum (tender on palpation)
2. Adenocarcinoma of the sebaceous glands

- **Treatment:** Surgical incision is usually unavoidable.
- **Prognosis:** Good except for the chance of local recurrence.

Chalazion.



Painful to palpation, the chalazion is caused by a chronic buildup of secretion from the meibomian glands.

Surgical removal of a chalazion.



After the chalazion clamp has been introduced and the lesion incised with a scalpel, the fatty contents are removed with a curet.

Tumours of the eyelids

Tumors

Benign Tumors

1. Ductal Cysts
2. Xanthelasma
3. Molluscum Contagiosum
4. Cutaneous Horn
5. Keratoacanthoma
6. Hemangioma
7. Neurofibromatosis (Recklinghausen's Disease)

Ductal Cysts

- The *round cysts of the glands of Moll* are usually located in the angle of the eye. Their contents are clear and watery and can be transilluminated. Gravity can result in ectropion. Therapy consists of marsupialization. The prognosis is good.
- **Glands of Moll are modified apocrine sweat glands** that are found on the margin of the eyelid. They are next to the base of the eyelashes, and anterior to the Meibomian glands. Glands of Moll and Zeis secrete lipid that adds to the superficial layer of the tear film, retarding evaporation.

Ductal cyst.



The round cysts of the glands of Moll are usually located in the angle of the eye. The weight causes temporary ectropion.

Xanthelasma

- **Definition**
- **Local fat metabolism disorder** that produces lipoprotein deposits. These are usually bilateral in the medial canthus.
- **Epidemiology:** Postmenopausal women are most frequently affected. A higher incidence has also been observed in patients with diabetes, increased levels of plasma lipoprotein, or bile duct disorders.
- **Symptoms:** **Sharply demarcated soft yellow white plaques are**. They are usually bilateral and distributed symmetrically . Aside from the cosmetic flaw **مُعيب** , the patients are asymptomatic.
- **Treatment and prognosis:** The plaques can only be removed surgically. The incidence of recurrence is high.

Xanthelasma.



The fatty deposits are often symmetrically distributed in the medial canthus.

Molluscum Contagiosum

- The **contagious infection** is caused by DNA viruses. The disease usually affects *children and teenagers* and is transmitted by direct contact. The *pinhead-sized lesions have typical central depressions* and are scattered near the upper and lower eyelids. These lesions are removed with a curet. (In children this is done under short-acting anesthesia.)

Molluscum contagiosum.



The pinhead-sized molluscum lesions have typical central depressions.

Cutaneous Horn

- **The yellowish brown cutaneous protrusions consist of keratin.**
- Older patients are more frequently affected.
- The cutaneous horn should be surgically removed as 25% of keratosis cases can develop into *malignant squamous cell carcinomas* years later.

Cutaneous Horn.

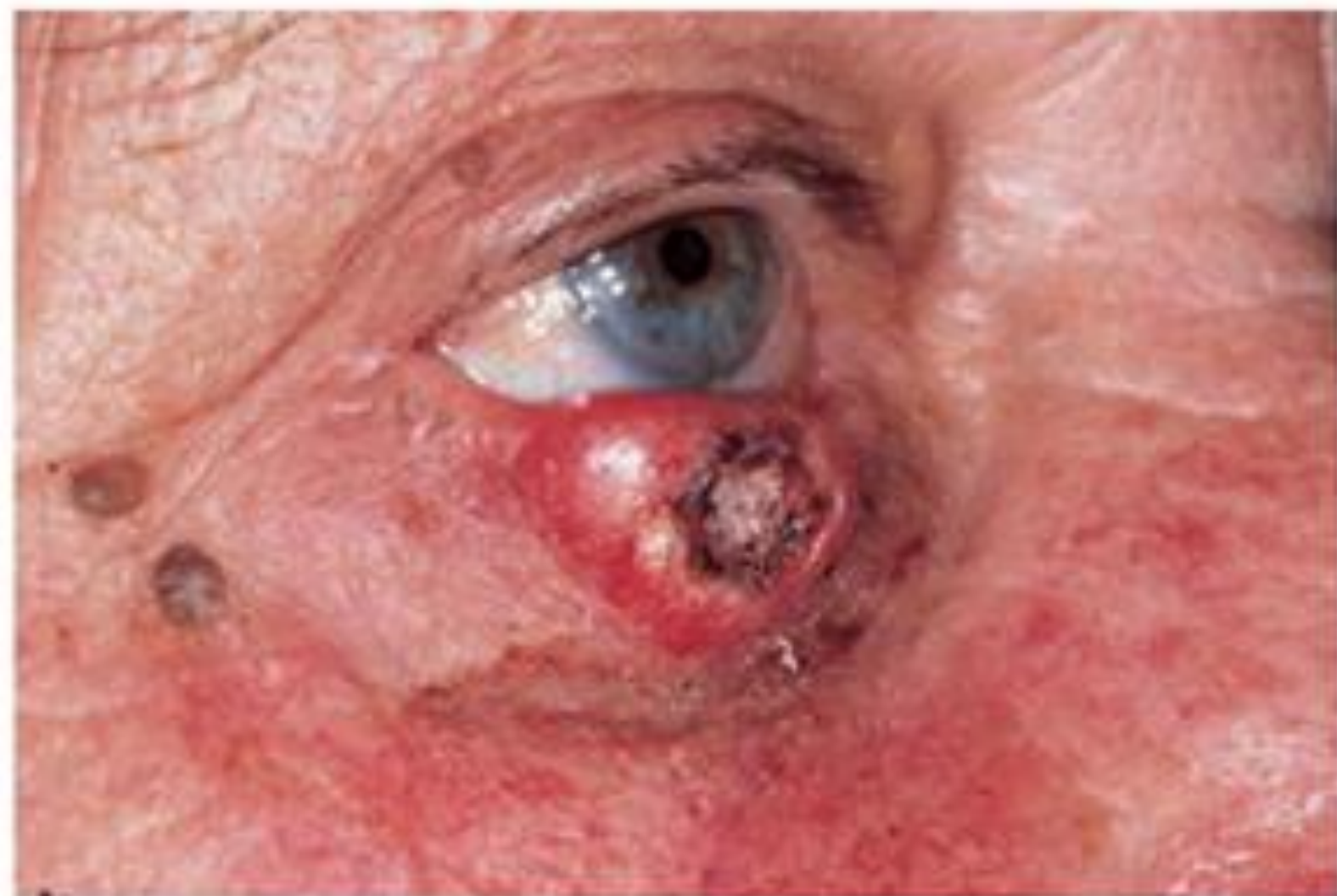


The yellowish brown cutaneous protrusions consist of keratin. They frequently (25% of all cases) develop into a malignant squamous cell carcinoma in later years if they are not surgically removed.

Keratoacanthoma

- A rapidly growing tumor with a central keratin mass that opens on the skin surface, which can sometimes be expressed.
- The tumor may resolve spontaneously, forming a small sunken scar.
- ***Differential diagnosis***
 1. *basal cell carcinoma* should be excluded .
 2. *The* margin of a keratoacanthoma is characteristically avascular. Likewise, *squamous cell carcinoma* can only be excluded by a biopsy.

Keratoacanthoma.



The rapidly growing benign tumor has a central keratin mass that opens on the skin surface.

Hemangioma

- **Definition**

Congenital benign vascular anomaly most frequently noticed in the skin and subcutaneous tissues.

- **Epidemiology:** Girls are most often affected (approximately 70% of all cases).

Facial lesions most commonly occur in the eyelids .

- **Symptoms:** Hemangiomas include capillary or superficial, cavernous, and deep forms.
- **Diagnostic considerations:** Hemangiomas can be compressed, and the skin will then appear white.
- **Differential diagnosis:** *Nevus flammeus*: This is characterized by a sharply demarcated bluish red mark (*“port-wine” stain*) وَحْمَةٌ خَمْزِيَّةُ اللَّوْنِ resulting from **vascular expansion under the epidermis (not a growth or tumor)**.

- **Treatment:**

1. A watch-and-wait approach is justified in light of the high rate of *spontaneous remission* (approximately 70%).
2. Where there is increased *risk of amblyopia* due to the size of the lesion, cryotherapy, intralesional steroid injections, or radiation therapy can accelerate regression of the hemangioma.

- **Prognosis:** Generally good.

Cavernous hemangioma.



The congenital vascular anomaly occurs as a facial lesion most commonly occur in the eyelids. The lesion regresses spontaneously in approximately 70% of all cases.

***Nevus flammeus* (“port-wine” stain)**



Neurofibromatosis (Recklinghausen's Disease)

- **Definition**

A congenital developmental defect of the neuroectoderm gives rise to neural tumors and pigment spots (*café au lait* spots).

- Neurofibromatosis is regarded as a ***phacomatosis*** (a developmental disorder involving the simultaneous presence of changes in the skin, central nervous system, and ectodermal portions of the eye).
- **Symptoms and diagnostic considerations:** The numerous tumors are soft, broad-based, or pediculate, and occur either in the skin or in subcutaneous tissue, usually in the vicinity of the upper eyelid.
- **Treatment:** Smaller fibromas can be easily removed by surgery. Larger tumors always entail a risk of postoperative bleeding and recurrence. On the whole, treatment is *difficult*.

Neurofibroma.



Larger fibromas can lead to elephantiasis of the eyelids.

Malignant Tumors

Basal Cell Carcinoma

- **Definition**

Basal cell carcinoma is a **frequent, moderately malignant, fibroepithelial tumor that can cause severe local tissue destruction but very rarely metastasizes.**

- **Epidemiology:**

- Approximately 90% of all malignant eyelid tumors are basal cell carcinomas.
- Their incidence increases with age.
- In approximately 60% of all cases they are localized on the ***lower eyelid***.
- ***Dark-skinned people*** are *affected significantly less often*.
- Gender is not a predisposing factor.

• **Etiology:** Causes of basal cell carcinoma may include:

1. Genetic disposition
2. *Increased exposure to the sun's ultraviolet radiation,*
3. *exposure to carcinogenic substances (such as arsenic),*
4. *chronic skin damage.*

Basal cell carcinomas arise from the basal cell layers of the epidermis and the sebaceous gland hair follicles, where their growth locally destroys tissue.

- **Symptoms:** Typical characteristics include:

1. a firm, slightly raised (everted) margin with a *central crater* and *superficial vascularization* with an increased tendency to bleed .
2. Ulceration with peripheral proliferation is occasionally referred to as an *ulcus rodens* قَرْحَةٌ قَارِضَةٌ, an *ulcus terebans* refers to deep infiltration with invasion of cartilage and bone.

- **Diagnostic considerations:**

- The diagnosis can very often be made on the basis of clinical evidence.
- A biopsy is indicated if there is any doubt.
- Loss of the eyelashes in the vicinity of the tumor always suggests malignancy.

- **Treatment:** The lesion is treated by surgical excision within a margin of healthy tissue. This is the safest method. If a radical procedure is not feasible, the only remaining options are radiation therapy or cryotherapy with liquid nitrogen.
- **Prognosis:** The chances of successful treatment by surgical excision are very good. Frequent follow-up examinations are indicated.

The earlier a basal cell carcinoma is detected, the easier it is to remove.

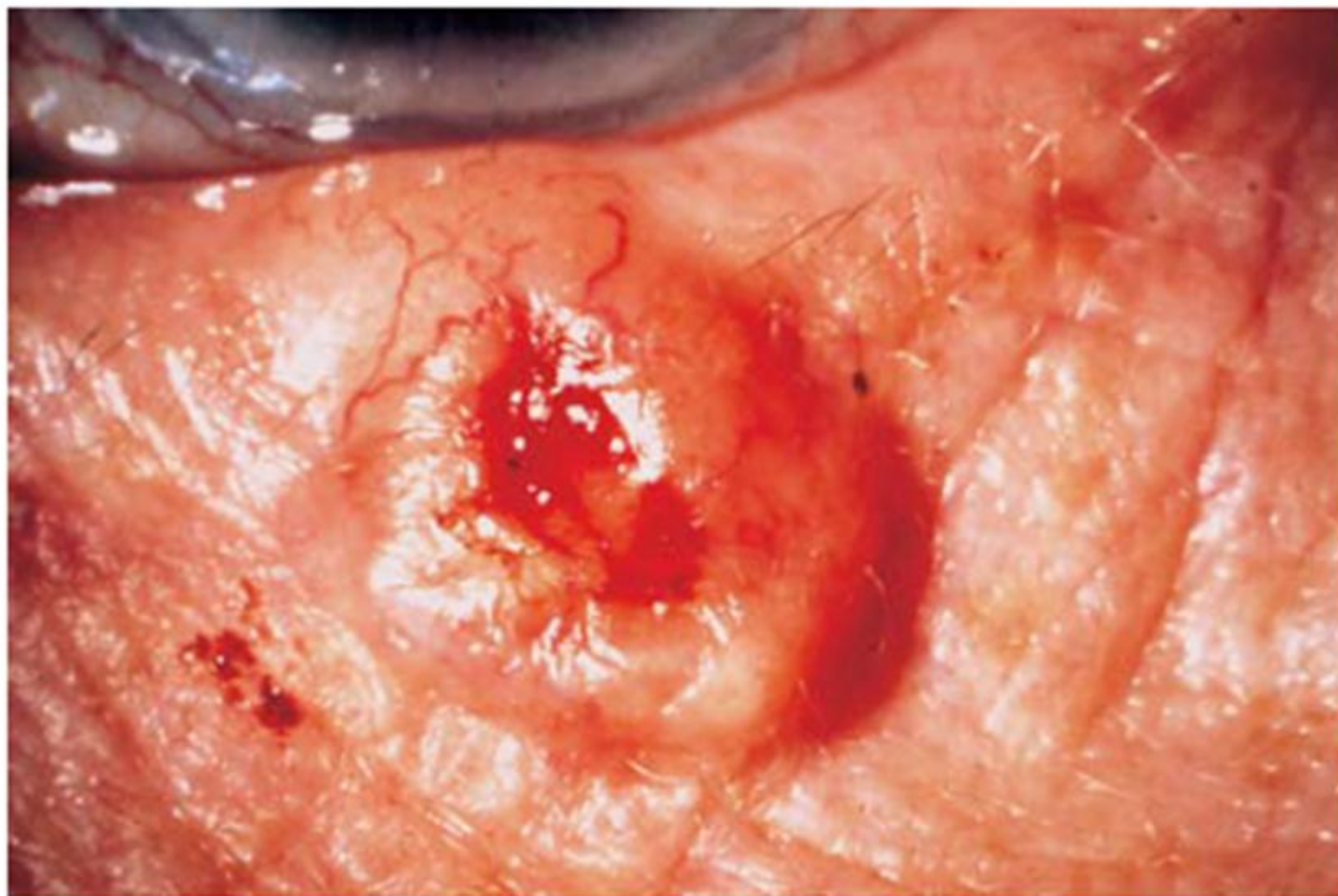
ulcus rodens



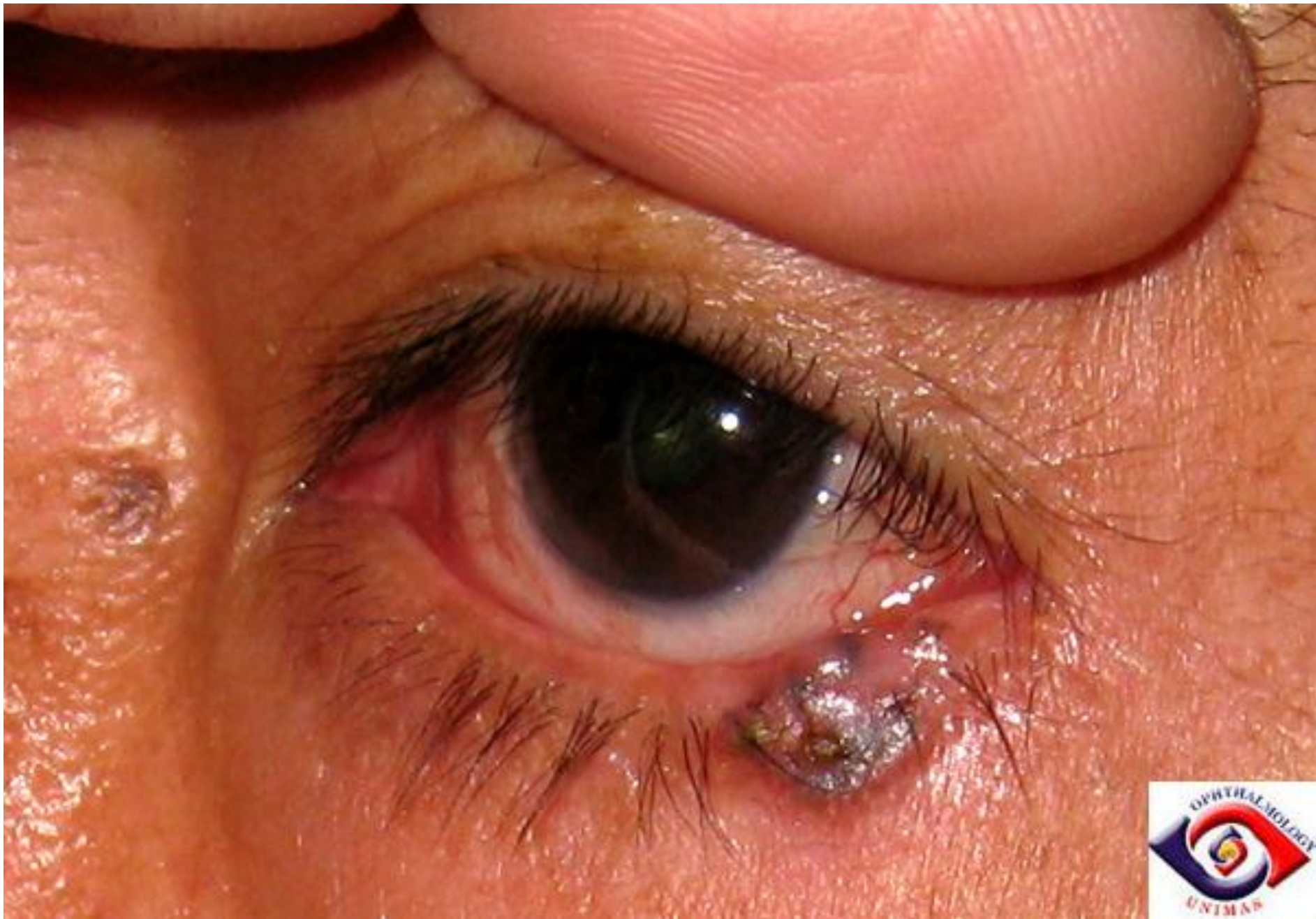
ulcus terebans



Basal cell carcinoma.



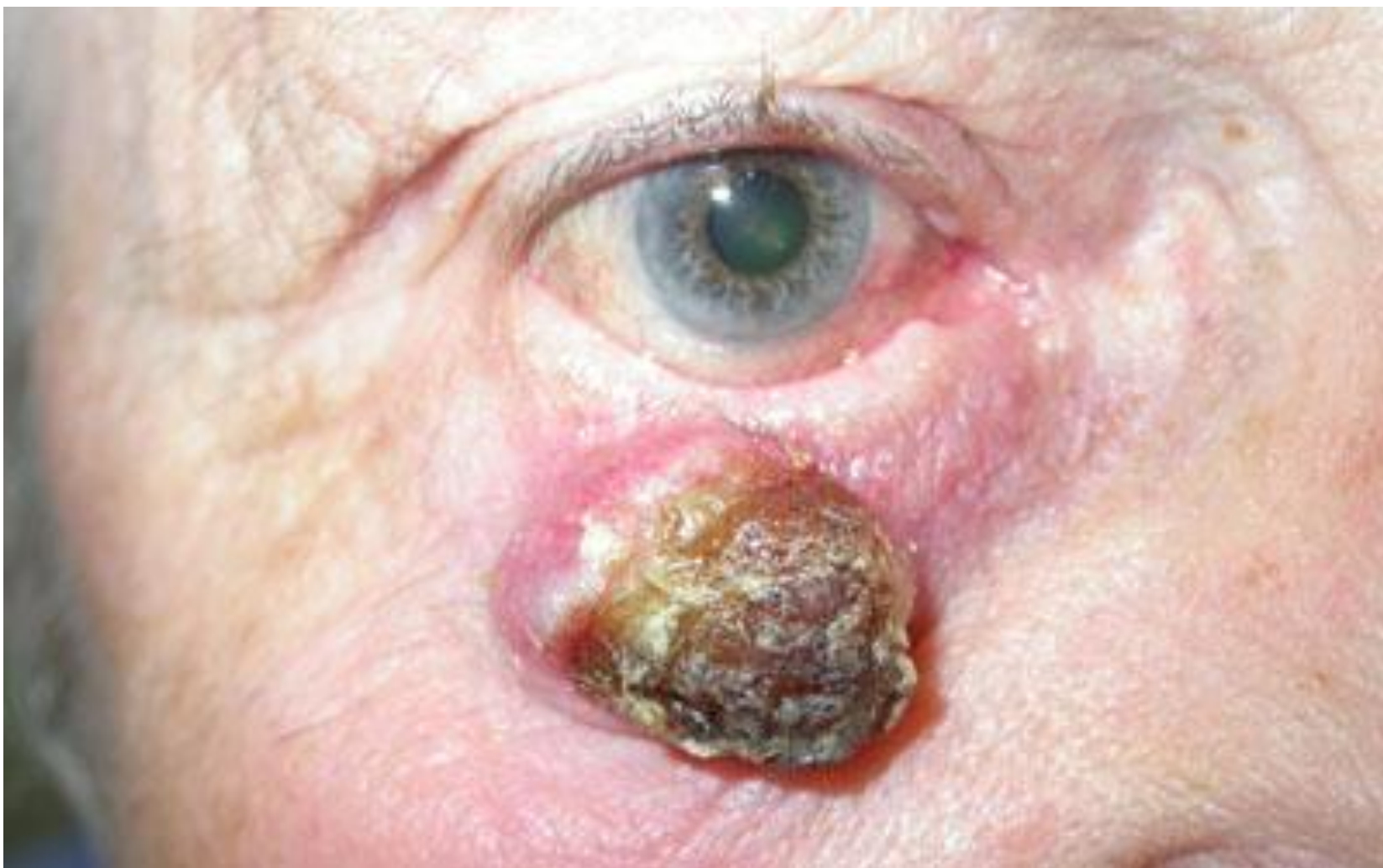
superficial vascularization, and a central crater with a tendency to bleed are characteristic signs of this moderately malignant tumor.



Squamous Cell Carcinoma

- ✓ *Second most frequently encountered* malignant eyelid tumor.
- ✓ Arises from the epidermis,
- ✓ Grows rapidly and destroys tissue.
- ✓ It can metastasize into the regional lymph nodes.
- ✓ Remote metastases are rare.
- ✓ The *treatment of choice* is complete surgical removal.







Adenocarcinoma

- ✓ *Rare*
- ✓ Arises from the meibomian glands or the glands of Zeis.
- ✓ **Firm, painless swelling** usually located in the **upper eyelid**
- ✓ Mobile with respect to the skin but not with respect to the underlying tissue.
- ✓ Can metastasize into local lymph nodes.
- ✓ The *treatment of choice* is complete surgical removal.
- ✓ In its early stages it can be *mistaken easily for a chalazion*
- ✓ An apparent chalazion that cannot be removed by the usual surgical procedure always suggests a suspected adenocarcinoma

Sebaceous cell carcinoma of the eyelids



The end of eyelids diseases