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## Ophthalmic Plastic and Reconstructive Surgery

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### Abstract

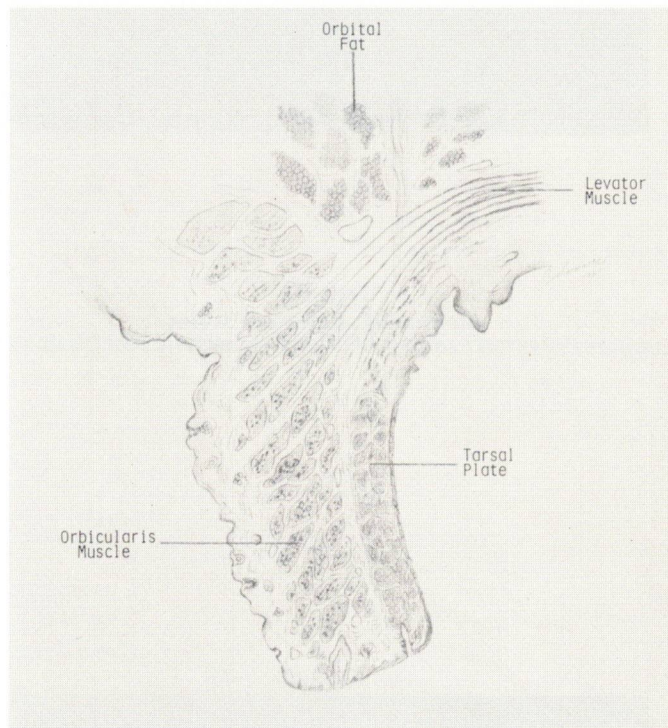
Ophthalmic plastic surgery is a relatively new subspecialty in ophthalmology. This subspecialty deals with diseases of the eyelids, lacrimal apparatus and of the orbit. Disease of the eyelids is the major emphasis of this communication. Several pathologic entities are discussed.

**Key Words:** Ophthalmic Plastic Surgery, Ectropion, Entropion, Dermatochalasis, Blepharoplasty, Chalazion.

Ophthalmic plastic surgery is a subspecialty of ophthalmology that is now well established in the medical community. The areas concerned in this discipline are outlined in Table 1 with the main ones being the eyelids, the lacrimal apparatus and the orbit. Since diseases of the orbit are quite rare, I will place emphasis on disorders of the eyelids and tear drainage.

### Anatomy

The eyelids are composed of four main layers. The outer two include skin and muscle and the inner two include the tarsal plate and conjunctiva. The tarsal plates are tough and fibrous and give rigidity to the eyelids. Within the tarsal plates are many oil-producing glands which secrete via their ducts into the tear film. There are several muscles in the eyelid which are important for proper functioning and position of the eyelid. The eyelashes are present in two rows in the upper and lower lids. The eyelids are important in protecting the eye, thus any alteration in the eyelid function can seriously affect the health of the eye. (Figure 1).



**Figure 1**  
**Eyelid anatomy**

### Inflammatory Conditions

A. *Blepharitis*: Seborrhea of the eyelids can result in chronic flaking with scales causing irritation of the eye. A bacterial infection usually coexists. Treatment usually consists of lid scrubs and antibiotic drops. (Figure 2).

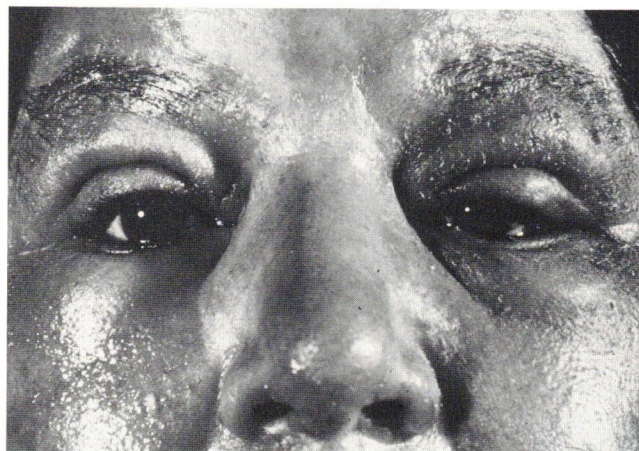
B. *Chalazion*: Infections of the eyelid glands may cause a nodule to develop in the eyelid. This is usually treated with a minor surgical procedure. (Figure 3).

C. *Allergic Dermatitis*: External irritants and allergens may cause itching, then drying and ocular irritation. Cosmetics are often allergenic, even the so-called "hypoallergenic" brands. Certain ocular medications are common offenders. Avoiding the irritant and treatment with a short course of steroid drops will usually improve the condition. (Figure 4).





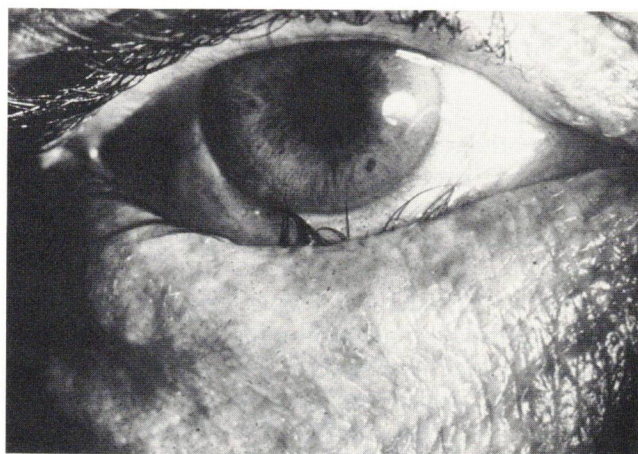
**Figure 2**  
**Blepharitis and notice scales**



**Figure 4**  
**Allergic blepharodermatitis**



**Figure 3**  
**Chalazion**



**Figure 5**  
**Entropion: lower lid totally inverted with lashes striking the cornea**



### Positional Abnormalities of the Eyelids

A. *Entropion*: With age, the skin relaxes and certain eyelid structures become lax and dehiscent, and the lid-eye apposition becomes affected. A combination of these changes allows the eyelid to tilt inward so the lashes strike the eye. Entropion may occur in younger people as well, however, it is usually secondary to scarring, burns or certain disease states. Management of entropion is usually surgical. Many surgical procedures are available for the correction of this problem. (Figure 5).

B. *Ectropion*: When the same conditions exist in conjunction with laxity of the eyelid tendons, the eyelid flips outward. The eye is no longer adequately protected and conjunctival or corneal scarring, infection, or ulceration may develop. Because eyelid position is important for proper tear drainage, tearing is usually present. Cicatricial ectropion may be produced by vertical shrinkage of the skin, either due to senile shrinkage, prolonged exposure to the sun, burns or trauma to the skin. Surgery is indicated if there are symptoms or if there are corneal-conjunctival changes. (Figure 6).

A. *Trichiasis*: Misdirected lashes may be congenital or acquired. The lashes tend to strike the cornea and produce irritations, erosions, or ulcerations. Cryotherapy is the newest method of treating this disorder. (Figure 7).

D. *Lid Retraction*: Thyroid disease is the most common cause of this problem. The patient exhibits a "startled" appearance. In addition to having a cosmetic disfigurement, corneal exposure problems are likely since the eyes do not close properly. Various surgical techniques allow the patient to achieve a more normal appearance. (Figure 8).

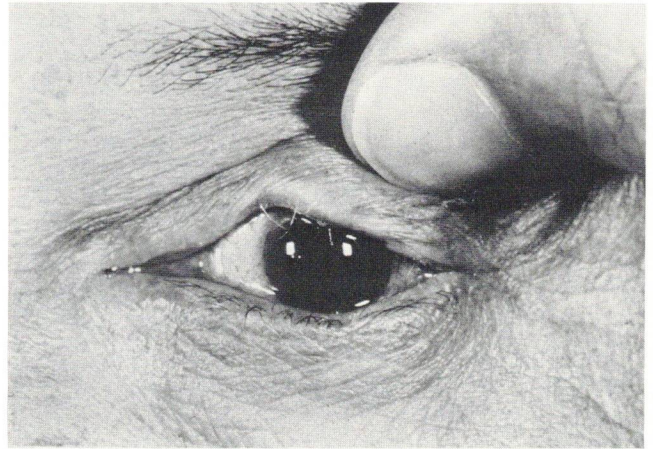


Figure 7

Trichiasis: inturned lashes upper lid causing corneal ulceration



Figure 6

Ectropion: lower lid turns outward



Figure 8

Lid retraction in patient with thyroid disease.



E. *Ptosis*: A droopy upper lid may not only be a cosmetic problem, but may also impair vision. In an infant, ptosis may produce an “amblyopia exanopsia” whereby the prolonged decreased visual impact may become permanent. One may be born with a ptosis or it can occur later in life. There are several degrees of ptosis and many different types of ptosis. The specific type of surgical procedure depends upon the amount and type of ptosis. (Figure 9).

### **Blepharoplasty**

With age, eyelid tissues become lax and the removal of skin with or without bulging fat from the eyelids may be performed for cosmetic reasons or to relieve certain symptoms. The excessive skin, called “dermatochalasis” may cause difficulty seeing, if severe, irritation of the eye lashes and a “heavy feeling.” The procedures are usually done under local anesthesia. (Figure 10).

### **Tumors of the Eyelids**

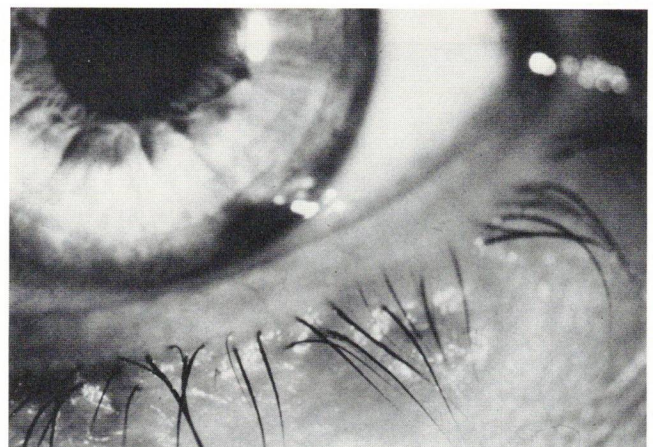
There are many conditions, benign and malignant, which may affect the eyelids, but one must always consider the diagnosis of basal cell carcinoma (BCC) which accounts for 20% of all lesions and 90% of all malignant eyelid lesions. Basal cell carcinoma may appear as nodules or may be superficially infiltrating. Surgical resection with reconstruction is the treatment of choice. (Figure 11). Common benign eyelid growths also include papillomata (Figure 12); Xanthalesma (Figure 13); and cutaneous horns (Figure 14).



**Figure 10**  
**Dermatochalasis: excessive upper lid skin.**



**Figure 9**  
**Ptosis**



**Figure 11**  
**Basal cell carcinoma**





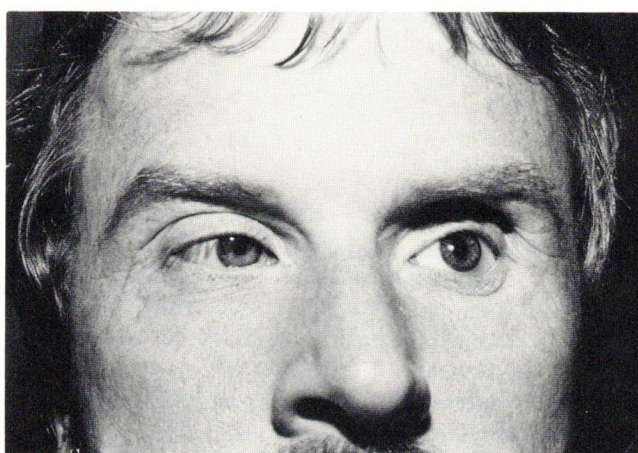
**Figure 12**  
**Papillomata**



**Figure 14**  
**Cutaneous horn**



**Figure 13**  
**Xanthalesma**



**Figure 15**  
**"Sunken" appearance of left eye years after enucleation.**

## Socket Reconstruction

After enucleation (where the eye has been removed) the ophthalmic plastic surgeon works closely with an ocularist (a technician trained in the fabrication of prosthetic eyes) to achieve the most satisfactory cosmetic results. The ophthalmic surgeon also works in conjunction with the ocularist in patients with deformed sockets or poorly fitting prostheses in order to produce satisfactory function and cosmesis. It is not unusual to have a "sunken" appearance several years after enucleation. This results from atrophy of orbital tissues (Figure 15). Reconstructive surgery will help achieve a much improved appearance.

## Epiphora

Tearing may be due to an overproduction of tears, or by insufficient drainage. In most of these patients, the underlying cause may be elucidated and effective treatment undertaken. Treatment may include tear substitutes, lid tightening procedures, or dacryocystorhinostomy. Dacryocystorhinostomy is the surgical procedure of choice for alleviating a blockage in the tear drainage system.

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**Table 1**  
**Oculoplastic Surgery Areas**

1. Lacrimal System
    - tearing
    - lacrimal gland
    - lacrimal excretory pathways
  2. Orbit
    - trauma
    - thyroid eye disease
    - infections and tumors
    - reconstruction
    - sockets and prosthetics
  3. Eyelids
    - inflammations
      - dermatitis
      - blepharitis
      - conjunctival scarring
    - cysts
      - styes
      - chalazia
      - other cysts
    - tumors
    - positional abnormalities
      - entropion
      - trichiasis
      - ectropion
      - ptosis
      - lid retraction
    - cosmetic
      - blepharoplasty
      - brow lift
      - epicanthal folds
  4. Globe
    - evisceration
    - enucleation
    - exenteration
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