

Krieglstein
Jonescu-Cuypers
Severin·Vobig
**Atlas of
Ophthalmology**

**International
Edition**



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Atlas of Ophthalmology

Visual diagnosis is of particular importance in the recognition of ophthalmological signs and symptoms. This atlas presents more than 750 brilliant photos taken at the University of Cologne's Eye Hospital. The selection of depicted diseases reflects the disorders which the ophthalmologist and the general practitioner must be prepared to see in clinical practice, including tropical diseases of the eye.

The exquisite quality of the photos and the anatomical drawings at the beginning of each chapter combined with comprehensive captions and a color thumb index make this atlas an outstanding reference work for clinicians, practitioners and students alike.

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M. Severin · M. A. Vobig

Atlas of Ophthalmology

With 771 Colored Figures



Springer

PDG

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Preface

This atlas provides a comprehensive introduction into the field of ophthalmology. It is intended primarily for medical students, nevertheless it makes an excellent reference work for clinicians and practitioners.

It is not meant to replace the classical textbook, but rather to complement it. In this particular field of medicine, in which photographic documentation of the majority of disorders is feasible, an atlas is of extraordinary didactic importance.

The authors wish to express their appreciation and thankfulness to the many collaborators. The cooperation with the team at Springer editorials was remarkably constructive. Special credit is given to the staff in the photographic department of the clinic for their habitual eagerness and their friendly support during the collection of photographic material.

Cologne, autumn of 1999

G.K. Kriegelstein C.P. Jonescu-Cuypers M. Severin M. A. Vobig



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Eyelids

1



1.1 Applied anatomy and examination techniques

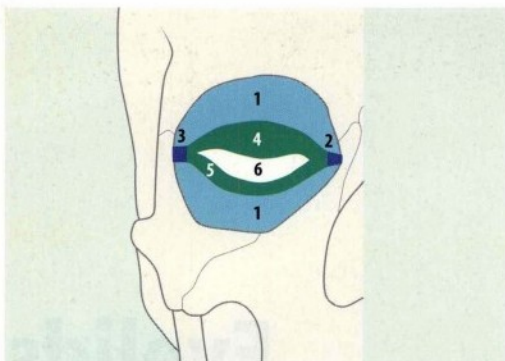


Figure 1.1 Connective tissue fascia and ligaments at the anterior opening plane of the right orbit, schematic drawing: (1) superior and inferior orbital septum; (2) medial canthal tendon; (3) lateral canthal tendon; (4) superior tarsal plate, (5) inferior tarsal plate; (6) palpebral fissure.

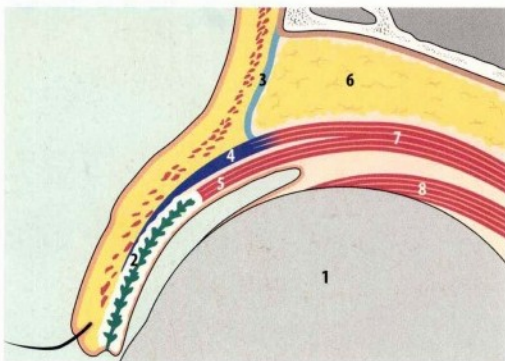


Figure 1.2 Cross-section through the upper eyelid in the midline. (1) globe; (2) tarsal plate; (3) orbital septum; (4) aponeurosis of the levator palpebrae muscle; (5) Müller's muscle; (6) orbital fat; (7) levator palpebrae muscle; (8) superior rectus muscle.

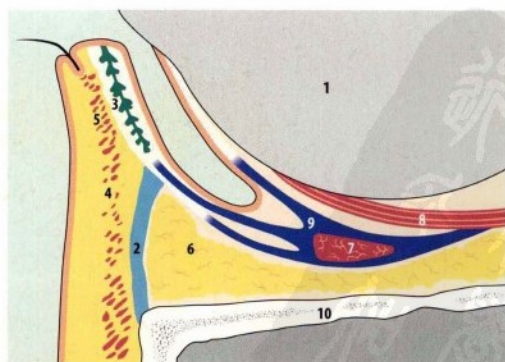


Figure 1.3 Cross section through the lower eyelid in the midline. (1) globe; (2) orbital septum; (3) tarsal plate; (4) preseptal portion of the orbicularis oculi muscle; (5) pretarsal portion of the orbicularis oculi muscle; (6) orbital fat; (7) inferior oblique muscle; (9) Lockwood's ligament; (10) inferior bony orbital wall.

Figure 1.4 Lower eyelid eversion for the inspection of the tarsal conjunctiva, the inferior fornix and the bulbar conjunctiva.



Figure 1.5 Upper eyelid eversion for inspection of the superior tarsal conjunctiva and the tarsal sulcus. The lashes of the upper eyelid are gently grasped, pulled downwards while pressure is exerted posteriorly and medially at the upper tarsal border with a cotton applicator.

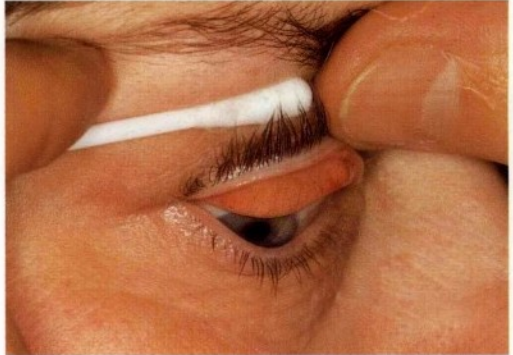
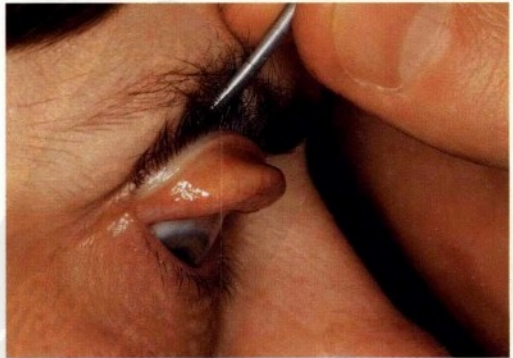


Figure 1.6 Double eversion of the upper eyelid for inspection of the superior conjunctival fornix. The superior eyelid is doubled over a Desmarres retractor and turned outwards so the superior fornix can be inspected.



1.2 Congenital abnormalities



Figure 1.7 Coloboma in the upper eyelid. The condition is characterized by a notch in the upper eyelid margin. In this area, the upper tarsal plate as well as the lashes are missing. This reduction deformity may be associated with syndromes and other ocular deformities. Surgical repair should be conducted in large colobomas.



Figure 1.8 Epicanthus in an infant. Epicanthus is characterized by vertical folds of skin covering the nasal canthus. The lacrimal caruncle and the plica semilunaris are not visible. A physiologic epicanthus is present to some degree in most children and gradually decreases. Marked, pathologic epicanthus should be surgically corrected.

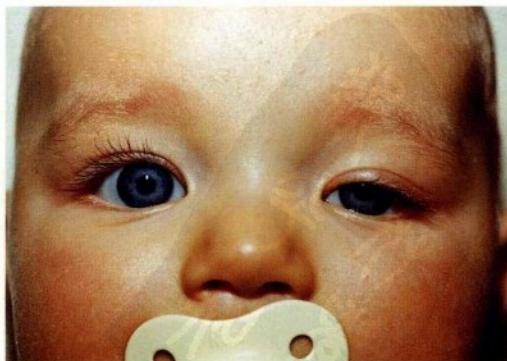


Figure 1.9 Left sided congenital ptosis in an infant. In the left, ptotic eye the upper eyelid margin covers the superior portion of the pupil, while in the unaffected eye the superior portion of the iris is visible. The condition is caused by a congenital impairment of the levator muscle.

Figure 1.10 Congenital entropion. The figure shows a congenital entropion of the left lower eyelid in a 1 year old infant with marked trichiasis (contact of eyelashes with cornea and conjunctiva). The eyelashes are very soft and flexible at this age, so trichiasis seldomly causes keratitis. Surgical repair is necessary in some cases, spontaneous resolution is frequent.



Figure 1.11 Bilateral blepharophimosis in an infant. The palpebral fissure is reduced in size horizontally and vertically. This feature may be associated with ptosis or epicanthus. A characteristic viewing posture is usually assumed. Surgical repair of the eyelids is needed in order to prevent muscular contractions and cervical deformities resulting from the viewing posture.



Figure 1.12 Bilateral congenital ptosis in a 4 year old child. A minor opening of the palpebral fissure can only be achieved by innervation of the frontal muscle. A suspension procedure is indicated in order to prevent the sequelae of the assumed viewing posture.



1.3 Eyelid malpositions



Figure 1.13 Involuntary ectropion in advanced age. The inferior eyelid margin is everted away from the globe. The lower punctum is not exposed to the lacrimal lake, resulting in epiphora. The predisposing factors are laxity of the palpebral skin, horizontal laxity of the eyelid, weakness of the fascia and elongation of the medial and lateral canthal tendon.



Figure 1.14 Medial ectropion of the right lower eyelid in advanced age. Owing to laxity of the medial canthal tendon, the medial portion of the lower eyelid with the lower punctum is everted. The consequences are epiphora as well as dermatitis of the lower eyelid due to permanent moisture of the skin and irritation by frequent rubbing. An inversion of the eyelid to the appropriate position can be achieved by surgical tightening of the medial canthal tendon.



Figure 1.15 Paralytic ectropion in facial nerve palsy. The entire lower eyelid is everted away from the globe due to the atony of the orbicularis muscle. The tarsal conjunctiva is edematous and hyperemic, a reflexory watery-mucous conjunctival secretion develops.

Figure 1.16 Mechanical ectropion due to a fibroma in the lower eyelid of a patient suffering from neurofibromatosis type 1. The fibroma causes a gravitational eversion of the lower eyelid.



Figure 1.17 Surgical technique used for the repair of involutional ectropion, schematic drawing. The lower eyelid is shortened by an excision of a full-thickness wedge, compensating for the laxity of the medial and lateral canthal tendon. The eyelid margin, the tarsal plate (1) and the muscle layer (2) are sutured with different material after removal of the wedge.

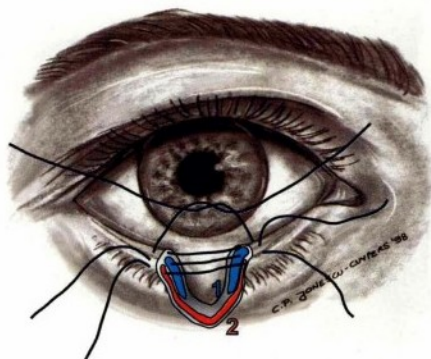
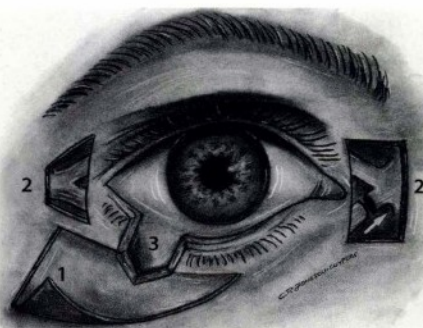


Figure 1.18 Various surgical approaches used for the repair of involutional ectropion, schematic drawing (right eye). The surgical approach is to be directed towards the underlying etiologic factors of the ectropion: (1) mobilization of a triangular skin flap with temporal shift and excision of skin; (2) shortening of the medial and lateral canthal tendon at their bony insertion; (3) wedge-excision; same surgical approach as in figure 1.17.



1.3 Eyelid malpositions



Figure 1.19 Cicatricial ectropion in the right eye after severe facial burn. Vertical shortening of the skin in the nasolabial region by scarring results in tension on the lower eyelid margin, which is everted away from the globe. The lower punctum is everted, causing epiphora.

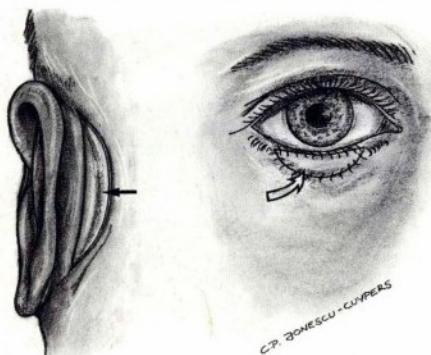


Figure 1.20 Surgical approach for the correction of cicatricial ectropion, schematic drawing. An elliptic full-thickness skin graft is taken from the retroauricular crease (black arrow), after thinning of the posterior surface, the graft is positioned in the lower eyelid in order to release cicatricial tension to the eyelid margin (white arrow).



Figure 1.21 Involutional, senile entropion. With eyelid laxity, the preseptal orbicularis muscle overrides the tarsus, resulting in an inward turning of the eyelid and contact of eyelashes with cornea and conjunctiva (trichiasis).

Figure 1.22 Surgical approach for the correction of involutional entropion, schematic drawing. A piece of skin with adjacent orbicularis oculi muscle is resected. The sutures are placed through cutis and subcutis (1), the muscle-layer (2), the lower margin of the tarsal plate (3), the orbital septum (4) and back anteriorly through subcutis and cutis. Tightening the knots of the sutures has an evertting effect on the lower eyelid, resulting in correction of the entropion.

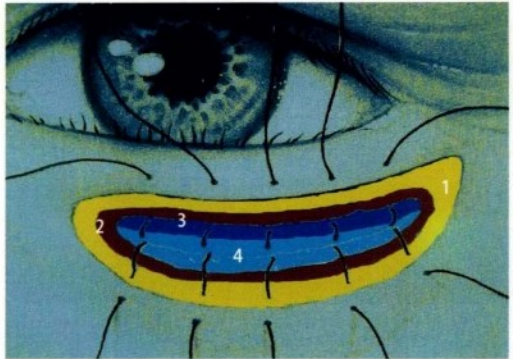


Figure 1.23 Aponeurotic ptosis in advanced age. In advanced age, a disinsertion of the aponeurosis of the levator muscle may occur, resulting in acquired ptosis. The aponeurotic ptosis is more pronounced in the right eye, the pupil is completely covered, resulting in a lack of binocular vision.



Figure 1.24 Myogenic ptosis in myasthenia gravis. To compensate for the reduced opening of the palpebral fissure, the patient activates the frontalis muscle and assumes a characteristic viewing posture of backward angulation of the head.



1.3 Eyelid malpositions

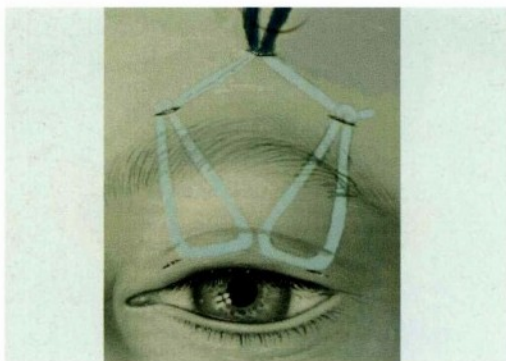


Figure 1.25 Surgical approach for the correction of ptosis with either none or deficient function of the levator muscle, schematic drawing. Two slings of autologous fascia lata or "goretex" are passed from the frontalis muscle through the orbicularis to the upper eyelid margin and tied 1 cm above the eyebrows. Lifting of the eyebrow (innervation of the frontalis muscle) results in lifting of the upper eyelid.



Figure 1.26 Dermatochalasis in advanced age. Laxity of the eyelid skin leads to redundancy of skin. The condition may resemble ptosis.



Figure 1.27 Contact dermatitis after application of wet compresses with camomile preparation. Contact dermatitis is characterized by severe itching, erythema and edema of the eyelid skin. Blisters may develop. The changes are usually restricted to the area of contact between skin and the noxious agent.



Figure 1.28 Acute allergic periorbital dermatitis with marked eyelid edema, suppurative urticaria and muco-serous secretion in the palpebral fissure after application of antibiotic ointment. In severe cases, the dermatitis may spread.



Figure 1.29 Atopic dermatitis of the eyelids with severely itching eczematous skin lesions at the eyelid margins. Marked skin folds.

