Atlas of Diseases of the Anterior Segment of the Eye

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Preface

The wish to document diseases of the eye by means of photographs is probably as old as the technique of photography. As early as the turn of this century, publications in ophthalmology reproduced such photographs. To modern eyes, however, early photographs leave much to be desired. Technical improvements in photography and reproduction gradually presented increasing possibilities for illustrating features of a disease and of observing its course. Before long the photograph complemented the sketch, which can never be quite objective, but it was not able to replace the sketch. In the 1930s when color photography began to he developed it soon won an important place in the documentation of eye diseases. Today it seems indispensable.

This collection is intended to complement an atlas of the eyeground which has already been published (Marchesani and Sautter, Atlas des Augenhintergrundes, 2 vols., 2d ed., Munich-Berlin, 1959) and one which is to be published shortly (Sautter and Straub, Der photographierte Augenhintergrund, Munich-Berlin, in preparation). In addition to those conditions which will be of interest primarily to the ophthalmologist and which will guide him in making a diagnosis, we have endeavored to present as well those conditions which the general practitioner will meet in his practice especially since the eye patient, particularly in the nonmetropolitan areas, often consults a general practitioner first. Considering the interrelationships between ophthalmology and other branches of medicine, we think this atlas might be useful to physicians in these other branches of medicine, particularly in relation to consulting activity. Above all, however, we hope that this atlas will be welcomed by instructors for their students in training and by the students. It is hoped that this book will also be of interest for research purposes.

A strict system of presentation was not always feasible, although we have attempted to present related diseases together. Therapeutic notes have been included insofar as they appear necessary within the scope of this book.

In our experience, the film best suited for color photography is, at present, the Agfa reverse film for daylight. It is available with a sensitivity of 50 ASA (18° DIN). For black-and-white photographs we use a 20 ASA film (14° DIN). Most of the photographs reproduced here were taken with that film. Black-and-white photographs may be used when the respective feature of an eye or the detail in question may be represented clearly by this means. Photographs which show both eyes together were taken with the Panflex camera (objective Tessar 1:3.5; focal distance 115 mm). The camera is fixed on a turntable and is adjustable in all directions. By means of appropriate adapters (single or double), it is possible to photograph one eye in the required size. A 150-w (optionally 300-w) flash attachment is used as a light source. In recent years, we have used the camera accessory with the Carl Zeiss slitlamp because it offers better presentation of details, especially of the vascular changes in the conjunctiva and the cornea, and changes in the opacity of the lens. Two cameras with black-and-white film and color film are always kept at hand so that we may be prepared to photograph any cases which we think should be so documented.

The director of our hospital, Professor Dr. H. SAUTTER, has always conferred special care to the collecting of photographs. Without this care, it would not have been possible to publish this book. Therefore it is no mere coincidence that the atlas appears on his fiftieth birthday, but it is an expression of our gratitude.

W. Straub and H. Rossmann

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Diseases of the Orbit and Disturbances of Motility of the Eyeball

Displacement of the Eyeball Caused by Inflammatory Changes of the Surrounding Area

A *B*

Fig. 1 Inflammatory pseudotumor of the right orbit

In the course of 2 months, this 11-year-old girl developed swelling, redness, and immobility of the right upper lid. **A.** Slight swelling of the lower lid, and downward displacement of the eyeball. She could rotate the eye downward only and only over a small range. Stereo x-ray and tomography of the orbit gave no indication of a tumor. The eye was treated with corticosteroids. Whereas previously there had existed an exophthalmos (HERTEL RE 23/LE 14/base 95 mm), in the course of treatment the inflammatory symptoms receded completely. **B.** After 15 weeks the position of the eyelid was normal and motility of the eyeball almost entirely free. Exophthalmometer readings were almost identical for both eyes (HERTEL RE 14.5/LE 14/base 95 mm). The patient had gained 2 lbs., her face had become a little fuller.

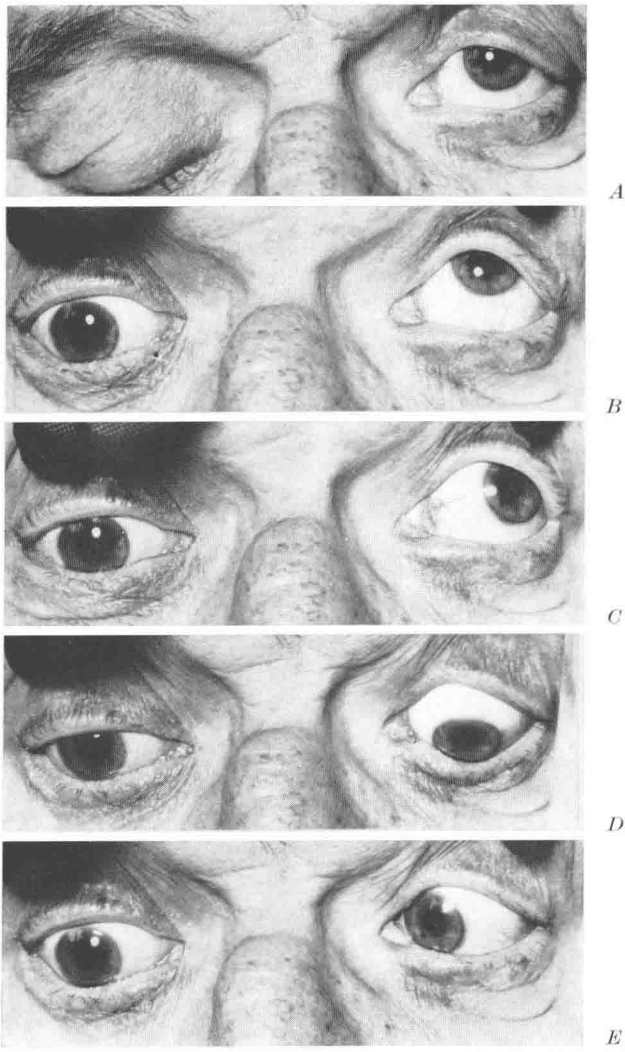
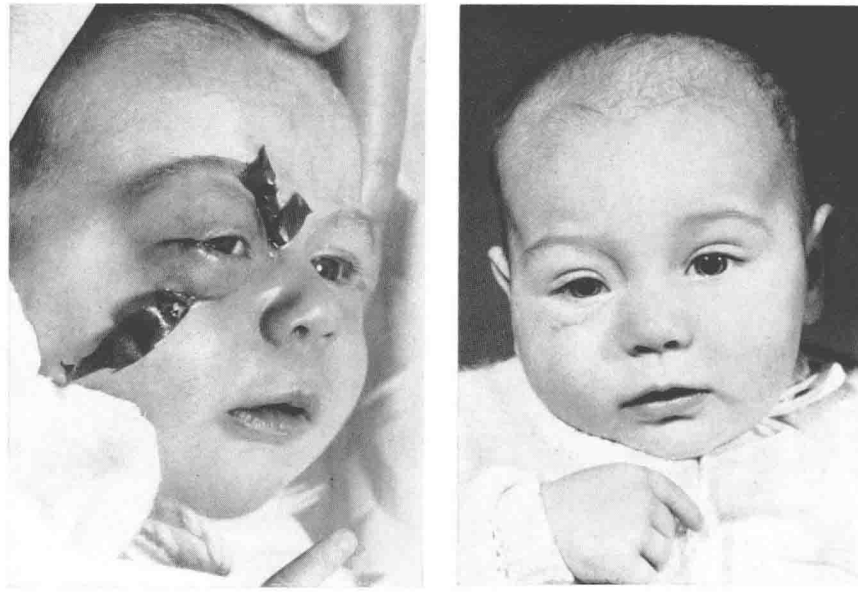


Fig. 2 A–E Gumma of the apex of the right orbit

Six years before the pictures were taken this 69-year-old patient contracted syphilis. For 6 months he had had external ophthalmoplegia of the right eye. The ptosis was accompanied by complete immobility of the eyeball in all directions of gaze. The photographs were taken with the paralyzed right upper lid being held up. His right eyeball always kept the same direction of gaze, whereas motility of the left eye was normal.



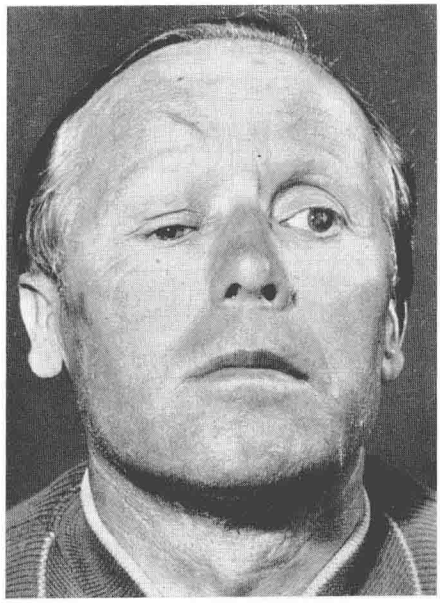
A *B*

Fig. 3 Abscess of the right orbit

Within a short space of time, this 4-week-old baby had developed increasing exophthalmos of the right eye. He could not move his eyeball, and there was extreme protrusion. He could no longer close his eyelids. Antibiotics were given, an incision was made, and the orbit drained. The lateral halves of the lids were sutured to protect the eye against a beginning exposure keratitis. **A.** The situation on the first day after operation. **B.** Two weeks later the exophthalmos had disappeared completely; motility of lids and eyeball was normal. A slight scar medially near the eyebrow and slight edema of the lower lid, which later receded completely, were the only traces of the operation.

Fig. 4 Mucocele with displacement of the left eye

In the case of this 82-year-old woman a mucocele of the frontal sinus had caused a typical gradual displacement of the eyeball down and out. After the operation, healing took place without complications and motility of the eyeball was restored.

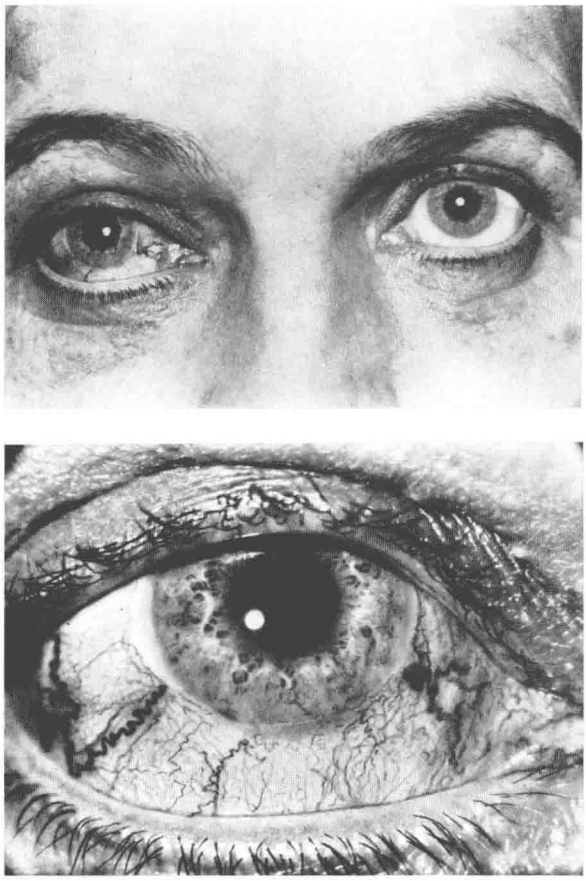


A

B

Fig. 5 Right orbital angioma with exophthalmos

This 52-year-old man lost the sight of his left eye after a penetrating injury in early life. **A.** Only 2 weeks before he came to us he had noticed that the right eye protruded. At the same time, the right eyeball was displaced slightly downward. **B.** Angiography showed a dense tangle of newly formed vessels in the orbit, characterizing the nature of the tumor, which was later verified histologically.

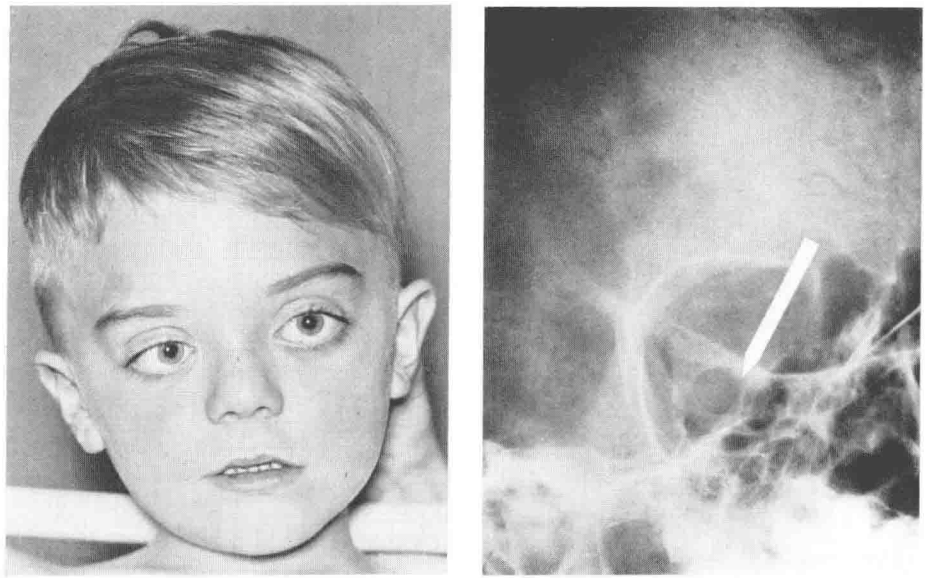


A

B

Fig. 6 Exophthalmos of the right eye caused by a tumor

In cases of displacement the position of the eyeball and the restriction of its motility are dictated by the position of the tumor. **A.** If it lies in the muscle cone, as in this 53-year-old woman, the eyeball is pushed straight ahead. **B.** Exophthalmometer readings were HERTEL RE 23/LE 20/base 94 mm. That the flow of blood from the front segments of the eyeball may be disturbed in addition is shown by the unusually tortuous, partly corkscrew-shaped episcleral veins. In this patient, we probably had to deal with a calcifying process in the middle of the cranial fossa which, according to the patient's history, had existed for 4 months. The patient refused further diagnostic studies (encephalography, arteriography, perhaps exploratory trephination), so the cause could not be established with certainty.



A *B*

Fig. 7 Von RECKLINGHAUSEN's disease with right-sided exophthalmos

This 6-year-old boy had generalized von RECKLINGHAUSEN's disease. Intracranial changes were identifiable as well. **A.** Since birth, the right eyeball had been slightly displaced down and in. Examination of the ocular fundus showed simple optic atrophy. **B.** The Rhese x-ray of the orbit revealed general enlargement of the optic foramen. Because of the generalized disease, the neurosurgeon decided against surgery.