The YEAR BOOK of

# Ophthalmology

## 1984

Edited by

J. TERRY ERNEST, M. D., ph. D.

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# Ophthalmology®

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**J. TERRY ERNEST, M.D., Ph.D.**
*Illinois Eye and Ear Infirmary,*
*Professor of Ophthalmology, Department of Ophthalmology,*
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Acta Neurochirurgica
Acta Neurologica Scandinavica
Acta Ophthalmologica
Alabama Journal of Medical Sciences
American Journal of Epidemiology
American Journal of Medicine
American Journal of Neuroradiology
American Journal of Ophthalmology
American Journal of Roentgenology
Annales de Chirurgie Plastique
Annals of Allergy
Annals of Neurology
Annals of Plastic Surgery
Archives of Internal Medicine
Archives of Ophthalmology
Archives of Otolaryngology
British Journal of Ophthalmology
British Journal of Plastic Surgery
British Medical Journal
Canadian Journal of Ophthalmology
Cancer
Chest
Clinical Pediatrics
Cutis
Diabete et Metabolisme
European Journal of Applied Physiology and Occupational Physiology
Geriatrics
Graefes Archive for Clinical and Experimental Ophthalmology
Headache
Illinois Medical Journal
International Ophthalmology Clinics
Investigative Ophthalmology and Visual Science
Japanese Journal of Ophthalmology
Journal of the American Academy of Dermatology
Journal of the American Medical Association
Journal Francais d'Ophtalmologie
Journal of Gerontology
Journal of Neurosurgery
Journal of Occupational Medicine
Journal of Oral and Maxillofacial Surgery
Journal of Pediatric Ophthalmology and Strabismus
Journal of Prosthetic Dentistry
Klinische Monatsblätter für Augenheilkunde

Lancet
Mount Sinai Journal of Medicine (New York)
Neurology
Neuroradiology
New York State Journal of Medicine
Ocular Inflammation Therapy
Ophthalmic Surgery
Ophthalmologica
Ophthalmology
Postgraduate Medical Journal
Psychological Medicine
Schweizerische Medizinische Wochenschrift
Science
South African Medical Journal
Southern Medical Journal
Stroke
Transactions of the American Ophthalmological Society
Transactions of the Ophthalmological Societies of the United Kingdom
Wiener Klinische Wochenschrift

# Introduction

This year the laser seems to have reached a new pinnacle with the demonstration of its efficacy in selected cases, such as senile macular degeneration, presumed ocular histoplasmosis syndrome, glaucoma, and posterior capsule opacity. There is another factor here, however, which may well turn out to be more important than the laser. We would not have the confidence to use this treatment modality in such a broad spectrum of eye diseases were it not for the randomized clinical trial. Clinical research in ophthalmology is far better today than it has ever been. Beginning with the Diabetic Retinopathy Study, researchers have become more and more sophisticated in the use of appropriate control groups, masking of observers, analysis of data, and the like. The literature is beginning to show a shift from purely descriptive epidemiology toward more quantitation with an increasing role for the biostatistician. The impetus for this important trend has been the National Eye Institute and all due credit should be given the Director and Staff for their help and continued encouragement in this work. Proper studies require months of planning and sometimes years for the accumulation of data. In the long run, however, we can have confidence in the results, and our patients benefit by receiving the best possible care.

J. TERRY ERNEST

# 1. Lids, Lacrimal Apparatus, and Orbit

## Treatment of Ocular Socket Problems

ALLEN M. PUTTERMAN, M.D.

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University of Illinois, Chicago

Ocular socket problems result from loss of the eye. These problems may include a small orbit and cul-de-sac in congenital anophthalmos and microophthalmos, partial and total extrusion of orbital implants, displacement of implants, enophthalmic anophthalmos, partial and total socket contractures, upper eyelid ptosis, and upper eyelid crease-fold asymmetry. In this synopsis I will discuss some of the recent advances in the treatment of these socket abnormalities.

### Congenital Anophthalmos

The child born without an eye commonly has a markedly small orbit and palpebral fissure and an extremely shrunken cul-de-sac. The initial treatment of congenital anophthalmos is not surgical, but lies in the hands of a skilled ocularist who effects a gradual expansion of the socket with progressively larger implants. Usually, when the child is 2 to 3 years of age, the palpebral fissure will no longer allow the passage of a larger conformer. At this point, a lateral canthotomy is performed, and the temporal upper and lower lid skin is sutured to conjunctiva. This technique produces a larger horizontal palpebral fissure length and allows the ocularist to expand the socket further with larger conformers.

Once the socket is expanded to its maximal size, lid surgery is performed as needed. This can consist of transmarginal rotation entropion procedures to treat cicatricial entropions, frontalis slings to treat ptosis, and, at times, oral mucous membrane grafts.[1]

### Microophthalmos

The problems outlined for congenital anophthalmos also occur with microophthalmos but are less severe. The expansion of the orbit with gradually enlarging conformers also is used to treat microophthal-

mos, but does not have to commence until the child is 2 to 3 years of age.

### Extruding or Displaced Implants

Extrusion of an ocular implant occasionally occurs. The etiology of this complication includes an oversized implant (20 mm or larger), infection, and suturing of the extraocular muscles over the implant.

If conjunctiva and Tenon's capsule separate over the implant to 8 mm or less in diameter, the extrusion can at times be corrected with a scleral patch.[2]

If the implant has caused a dehiscence greater than 8 mm or if extrusion recurs following a scleral graft, I prefer to remove the ocular implant and replace it with a dermal fat graft.[3] I also recommend doing the same for migrated ocular implants that prevent fitting of an esthetically acceptable artificial eye.

Various other techniques to treat the socket after extrusion or removal of a migrated implant have been performed using secondary implants. These implants are commonly covered with sclera.[4] I have had limited experience with this use, but good results have been obtained in the few I have implanted.

### Enophthalmic Anophthalmos

Enophthalmos is another problem that occurs in patients with enucleated sockets. It not only causes the artificial eye to sink inward but also results in a deep supratarsal sulcus, a wide distance between the upper eyelid margin and lid fold, and a narrowed palpebral fissure height.

Initially, enophthalmic anophthalmos should be treated with an adjustment of the artificial eye. The ocularist can frequently enlarge or modify the prosthesis to produce an esthetically acceptable result.

If unacceptable enophthalmos persists after the artificial eye is modified, surgery must be considered. If there is an implant located centrally within the ocular socket, I prefer reducing the enophthalmos with subperiosteal glass beads.[5] I realize that this technique has decreased in popularity during the past few years, but favorable results in my patients continue to make this procedure my first choice of treatment.

If the enophthalmos results from the absence of an ocular implant, I prefer to treat this with a dermal fat graft.[3]

### Partial Socket Contracture

Contracture of the ocular socket can result from a chronic socket infection, an extruding implant, radiation, or trauma. However, an old, unpolished artificial eye may also cause contracture. The poorly