LETTERS TO THE EDITOR

Severe intraocular infection: complications of $\beta$ irradiation induced scleral necrosis following pterygium removal

EDITOR.—It was with interest that we read Dr Plowman's excellent article in your journal recently.1 2 We would like to raise one important point, however. The author states that pterygia respond well to radiotherapy; however, our experience in Australia, where this condition is more common, suggests that following such treatment, there are recurrence rates of 20%.1

Tarr and Constable2 highlighted the potential hazards of scleral necrosis following $\beta$ irradiation with streptomycin plaques. Since then the practice in western Australia has been to limit the number of treatments, but even with doses as low as 800–1600 Gy we have had 12 severe cases of intraocular infection over the past 5 years referred to our institution. The condition may remain hidden, or masquerade as marginal keratitis, herpetic disease, posterior scleritis, or serous retinal detachment for some time. Pseudomonas, Streptococcus and Candida are commonly implicated, but rare ocular pathogens such as Pseudomonas buoidi and Scedosporium inflatum may be causative. Visual handicap is severe and only one patient has retained good visual acuity, with one patient requiring enucleation. Generally the ocular complications have been devastating.1

Typically a long latency between radiotherapy and ocular sepsis occurs (usually 15–20 years) and removal of calcific plaques at the base of the ulcer commonly precipitates sepsis.1 We no longer employ radiotherapy following removal of pterygia. In our institution last year we treated 114 patients with pterygia and there is no doubt that conjunctival autografting is our treatment of choice to reduce recurrences.1

The incidence of pterygia is low in temperate latitudes,3 an increasing migrant and itinerant population may mean more consultations for pterygia will occur in the United Kingdom. If radiotherapy is to be used at all, we would stress the necessity for limited treatment, only and in skilled hands dealing frequently with this mode of therapy, to avoid these devastating sequelae.

ANTHONY P MORIARTY
GEOFFREY J CRAWFORD
IAN J MCALLISTER
JJ CONSTABLE
Royal Perth Hospital
Department of Ophthalmology
Perth, Western Australia


BOOK REVIEWS


This book contains a wealth of detail and it must serve both to stimulate any interested ophthalmic surgeon and to enrich the experience of those surgeons already involved in periorbital reconstruction. The gift of lucid teaching, so characteristic of Mr Jack Mustarde, is evident throughout the work; the basic anatomy and physiology of tissues, especially the eyelids, is applied throughout to the problems of oculoplastic surgery.

After introducing the concepts of eyelid structure and function, the repair of partial thickness eyelid lesions is dealt with in a logical sequence – the primary repair, secondary complications and treatment, loss of superficial or deep tissues, and the loss of conjunctiva. The text then covers the primary and secondary repair of full thickness defects of the eyelids and periocular tissues. Most of the techniques available for reconstruction of the upper, lower, or both eyelids are clearly described and the merits and disadvantages of each method are discussed in detail. The systematic approach is completed by two chapters about reconstruction surgery of the medial and lateral canthi.

The second part of the book deals with the management of various groups of ophthalmic conditions or particular aspects of reconstructive surgery. It contains chapters by co-authors of the highest international standing – lacrimal disease (Welham), socket surgery (Vistnes), craniofacial malformations and trauma (Jackson), eyelid malpositions (Collin), and ptosis (Beard). Other chapters, by Mr Mustarde, cover eyebrow reconstruction, congenital and acquired anophthalmos, some aspects of ptosis, medial canthal anomalies, colobomas, exenteration, and also practical details for the harvesting of tissue grafts.

It is evident throughout that the surgical techniques have been evaluated thoroughly and much practical advice is given; this advice also includes examples of techniques which should be avoided! There are a large number of excellent illustrations which complement the text and demonstrate the efficacy of the methods presented.

The book is of the highest quality, well bound, and has only a handful of minor errors. Though some of the surgical methods are not described there can be no doubt that it is an essential reference text for surgeons who deal with periocular reconstruc-

GEOFFREY E ROSE


This volume provides a welcome overview of human scotopic visual function at a time when major advances are being made in understanding the underlying mechanisms of loss of night vision in retinitis pigmentosa and other retinal dystrophies which can selectively target rod mediated vision. In their preface the editors note Sir Stewart Duke-Elder’s praise of the previous resumé of work about night vision. The same praise could be expressed for this book which concludes our inability to understand the biochemistry, electrophysiology, and psychophysics in an intellectually challenging field.

The chapters are uniformly of high standard and cover basic mechanisms from the rod photoreceptor, photobiology, biochemistry, and physiology, five detailed chapters about the important findings in that rare condition of achromatopsia (based heavily on extensive investigations of the visual function of one of the editors to mouse models and mainly theoretical and research aspects of night vision devices.

One of the strengths of a collection like this is that it provides a forum for leading scientists to discuss issues in greater detail, by asking where clinicians can apply new basic research findings to interpreting physiological mechanisms of disease. Particularly interesting in this respect is the chapter on dark adaptation by Lamb where he re-examines the classical thinking about the role of bleached rhodopsin and neural mechanisms in adaptation. For those clinicians who are interested in age-related macular degeneration, where abnormalities of dark adaptation can be critical, this provides important clues to understanding potential mechanisms. In addition since in retinitis pigmentosa the molecular biological findings of abnormalities in rhodopsin are now being discovered, we can begin to consider how these changes in the structure of the molecule result in the loss of function. These highly selective changes in retinitis pigmentosa (often single amino acid substitutions) with their devastating visual consequences provide important models for understanding the underlying physiology and this chapter discusses relevant considerations.

The chapter about clinical manifestations gives an excellent introduction to this aspect of night vision and would perhaps better be read before the other chapters by clinicians. It explains clearly the importance of considering underlying physiological mechanisms as well as putting in perspective the issue of selectivity and the potential these conditions have for furthering our understanding of normal vision. This chapter necessarily omits reference to the latest molecular biological findings mainly written before these were known and it will be exciting to see these included in the next resumé of night vision when the recent results in this fast moving field can be incorporated.

In summary, this volume provides background on the physiology and psychophysics of night vision. It will be of interest to vision scientists and basic researchers studying
human night vision as well as clinicians curious about the underlying physiology of visual function abnormalities.

**F W FITZKE**


The development of bifocal and multifocal intraocular lenses is a natural one but strangely has arrived on the intraocular lens scene late. This book reviews the conceptual development of multifocal lenses sometimes in a rather anecdotal way but includes the benefits derived from spectacle and contact lens multifocal styles. The design of the annular, bull’s eye, and diffraction grating type lenses is adequately covered and there is a passing reference to a split ‘executive style’ bifocal lens which would be more common in spectacle lenses.

The material overall is presented by an inspiring list of contributors. In the early chapters there are basic optics with much ray tracing and even wave front reconstruction to show how both retinal and diffraction lead to the image on the retina. These techniques are used to produce focus spot diagrams calculated for single fixed objects in a series of image planes at different distances from the lens. Thus, for monofocal, bifocal, and multifocal intraocular lenses is derived. These spot diagrams are very revealing as to the quality of image that can be projected onto the retina from these various types of lenses and on the problems associated with them, such as tilt and decentration.

New optical and mathematical tools are brought to bear on the problem such as modulation transfer function in which contrast is expressed as a fraction of object contrast and this function is plotted against line resolution, the resulting transfer function being of value to lens designers and users alike. Some physical optics are used throughout the book.

All currently available types of multifocal lenses are discussed, including some not in very wide use such as the Nordan aspheric lens and the dual zone retina and intraocular lens in which the entire refractive sequence is repeated in each of five relatively narrow zones. Zone plate lenses such as the SM bifocal are discussed; new to the reader are the phase plate lenses. All of these types are related to their diffraction limiting characteristics and the spot diagrams also form a measure of image transfer including aberration induced by off-axis spots, tilt, and decentration.

The role of retinal imaging in processing and cleaning up the spurious parts of the spot diagrams is explored extensively and it is suggested that filtering of retinal noise by raising the contrast and by inhibition of spurious coincidence may provide a gating mechanism which improves retina to brain transfer. There are extensive, essential discussions of decentration and tilt of almost all the lens styles. There is the supposition that Array type lenses may avoid these problems.

While the book is generally a supportive thesis for multifocal lenses, there is some balance provided in chapter 18 where Steve Charles and Paul Runge suggest disadvantages in relation to examination of the retina and internal vitreoretinal procedures. They also indicate reduced visual function where the light and contrast losing possibilities of multifocal lenses may be accentuated by co-existing retinal or macular disease.

The later chapters relate to iatrogenic and preoperative astigmatic control and to arguments of capsular bag and sulcus placement. These are to some extent repetitive of material published elsewhere, especially in the *Journal of Implant and Refractive Surgery*. Much the same could be said of the chapter on A scan examination, although it is still worth reading.

In summary, this book is very useful for those who implant multifocal intraocular lenses. Others who choose to not to may also find that it contains much theoretical information of value for all implant surgeons and for technicians involved in the support services for implantation.

**C G F MUNTON**


In response to the increasing demand for doctors to become involved in medical audit, the Centre for Medical Education in Dundee has produced a distance learning programme aimed at both hospital doctors and general practitioners. The package is based upon a reference book, clearly and concisely written, which explains what audit is and is not, the potential benefits to be derived from medical audit, and how to initiate an audit programme within one’s own hospital.

While the initial sections of the book are likely to be useful to those who are sceptical about the benefits of audit, or completely ignorant of the concept, those who have already embarked upon some form of audit exercise may find themselves very familiar with much of the material in the first four chapters. The remaining two thirds of the book covers technical niques used in taking samples and data, how to collect, store, and handle data, and an elegantly straightforward section on basic statistical analysis. The level at which the book is pitched is probably right for most hospital doctors who have not been encouraged to familiarise themselves with the audit process, but each chapter contains valuable guidance on further reading.

The other components of the package are sets of questions, both multiple choice and brief written exercises, which come in two versions: one for hospital doctors and the other for general practitioners. They are designed to be used in conjunction with the reference book to make the participants think critically about the way in which they can implement or improve on their use of audit in their own practice and encourage their involvement in initiating and developing these responses to these exercises can be forwarded to the Centre for Medical Education, Dundee and guidance is then given as to how the participants’ answers compare with those of other doctors involved in the programme. New exercises are dispatched at regular intervals to maintain continuing interest.

This package appears to have been well designed and produced and should provide a very useful introduction to those wishing to become involved in medical audit. It should assist them in carrying out meaningful work while avoiding many potential pitfalls and errors and help to maintain their enthusiasm for continuing critical analysis of their working practices.

**COLIN HUTCHINSON**


This excellent little handbook is a mine of information. It is designed basically for the beginner in ophthalmic antique collection, but is so full of hints and wrinkles that anyone starting to shop for old items, in any field, will derive benefit, and gain tips on how to set about commencing their collection.

What appears to be a simple topic is soon expanded by the author, as he narrates the width of subspecialties within the subject. Thus one’s fancy may be drawn towards spectacles or ophthalmic instruments at one end of the spectrum to eyebaths, books, and optical toys at the other.

The booklet ends with advice on the care and display of items, and there is a reference to museum collections worldwide, together with a list of market places and auction houses.

The author is to be congratulated on producing a stimulating, readable book, which will set the informed readers exploring their waste bins, and sallying forth into the highways and byways for hidden treasures of historic interest, and who knows, perhaps some value as well.

**GV CATFORD**

Books received


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**OBITUARY**

T D V SWINSCOW DSC, MSC, MB, BS

Contributors to and readers of the British Journal of Ophthalmology will be sorry to hear of the death of Dr T D V Swinson who was our technical editor from 1977 until 1991.

‘Doug’ Swinson was a scholar of great charm and personality, the embodiment of all the best in small physical stature and unassuming manner, possessed of great charm and a gentle wit, but an eagle eye for grammatical errors, unsubstantiated claims, faulty statistics, obfuscation, and humbug upon all of London, and any other irregularities which in his view rendered a paper less than fit for publication, he would pounce with firmness but unfailing