The ocular pulse

Sir,—The important editorial on the ocular pulse,1 highlights the observations of the retinal arterial pulsations noted by early ophthalmologists. It was Thiel2 who first attempted to quantify the recording of the temporal arterial pulsation which has become known as the tonometric sign as early as 1879. Priestley Smith3 had clearly described the spontaneous vascular pulsations observed during tonometry. This was reinforced by the observations of Schiitz and Backman who made it important for those undertaking tonometry up to the time of the application method.

The earliest precise recording of the ocular pulse was that of Thiel in 1928.4 Subsequently Maurice5 used a recording tonometer, to be followed by Castren and Lavikainen,6 who adapted a Muller electromanometer. Following the work of Suzuki7 a number of groups developed a system of recording the ocular pulse using a fluid filled suction cup system. The piezoelectric system of Byrke8 seems to be the least 'invasive' and most precise. The method9 and Perkins10 were developed in spite of the variety of approaches the amplitude and variation in pulse pressures correlate quite closely. Both in time and form the pulse wave does not correspond with a typical arterial pulsation. It may be divided into the dicrotic notch which is the characteristic of an arterial pulse, and when placed in time sequence in relation to the R-wave of the ECG, or the Doppler wave pulse recruited from an adjacent orbital vessel, for example, the supraorbital vein, its time relationship is closer to the middle of diastole. The only report which demonstrates a dicrotic notch is that of Barnes and co-workers,11 who applied the pulse sensor externally, for example, through the lids, and it is believed that this was recording ophthalmic artery pressure pulsations and not an ocular pulse.

While evidence to link the ocular pulse amplitude to either C or POC is lacking, there is a significant amount of evidence from all studies that it has a direct relationship with levels of ipsilateral carotid perfusion. The consequences of this is to question the role of a topically β-blocker which does not contain intrinsic sympathomimetic activity (ISA).

**BOOK REVIEWS**


This book is written by a professor of plastic surgery who specialised in eyelid surgery. It is of interest to the ophthalmologist, as it minutely examines the normal appearance of the eyelids and the anatomical reasons for variation in this appearance as well as the pathophysiological changes which occur with age. The ophthalmologist usually concentrates on the functional abnormalities of the eyelids and often does not seek to differentiate the nuances of minor changes in appearance which can be of great cosmetic significance.

There are chapters on anatomical considerations discussing the variations in bulges in the eyelids; scleral show, which is subdivided into constitutional, developmental, endocrine, and iatrogenic causes; the treatment of excess skin, fat, muscle, and bone; the treatment of depressions, complementary surgeries, and ecotions, and other complications. The author's work is a significant contribution in concepts of rejuvenation of the eyelids and of supplementing deficient tissue with fat grafting or mobilisation are especially interesting. He does not set out to give a standard technical description of how to do a particular operation but rather tries to make the reader aware of the human body's individual variations and how techniques need to be modified to take account of these variations and to avoid complications. All the chapters are copiously illustrated with excellent, clear, diagrams and clinical photographs, and there is an extensive bibliography and additional reading section.

Although few ophthalmologists will wish to perform all the procedures described in this book, it is valuable for showing what possible exist in cosmetic surgery round the eyelids.

J R O COLLIN


This book is based on a successful course for ophthalmologists which the author has been running on an annual basis at the East Surrey Hospital. It is divided into 11 chapters and also contains a section for further reading and an index. The first three chapters deal with the basics of angiography and both normal and abnormal fluorescence. The remaining chapters describe the appearances in the more common retinal disorders.

The strength of the book lies in the very high quality of the photographs. Each disease described has a good representative colour illustration with first class clear fluorescein angiograms. Throughout the book there is hardly a plate which is not of excellent standard.

Unfortunately the book is somewhat let down by the quality of the text, not so much in terms of accuracy of text for it is not very. For brevity, however, topics such as the side effects of angiography are touched on only briefly, and there is no description of their management. No mention is made of stereo photography, which is an integral part of angiogram assessment, particularly of macular diseases. Similarly the clinical descriptions of the various retinal diseases are short and not always accurate. The section on the development of neovascularisation in aging macular degeneration is muddling and the chapter on diabetic retinopathy perfunctory. Some examples, for example, macular aneurysm, retinal dialysis, and some of the retinal pigment epitheliopathies are not described at all.


The authors have produced a very comprehensive manual on strabismus. They begin with a detailed account of the anatomy and physiology of the extraocular muscles. There is a thorough description of the tests for visual acuity and binocular function, with an explanation of the underlying physiological basis of Panum’s fusional space and stereovision. The standard orthoptic tests are covered in some detail. As a result less than half the text comprises photographs and description of abnormalities of ocular motility. However, in my view the balance is well struck, and the lucid and highly diagrammatic introduction to assessment of motility disorders is followed by well chosen illustrations of the more common conditions, with succinct text. This is an excellent book, which should prove useful as an introductory text for the fellowship candidate and as an approachable reference book.

R A HARRAD