

Preface

The goal of this book is to provide a resource for physicians interested in learning the biological basis, clinical manifestations, and current treatment approaches to diabetic eye disease. Diabetes and diabetic eye disease are rapidly increasing in prevalence around the world. Our understanding of the mechanisms that underlie diabetes and our ability to ameliorate ocular complications are advancing at a similarly rapid pace. The disciplines contributing to progress range widely and include biochemistry, physiology, molecular biology, epidemiology, clinical medicine, public policy, economics, and ethics. Although most of the targeted clinical audience for the book will have been exposed to all of the required basic sciences in the past, we have attempted to provide more than allusions to needed concepts at key junctures. For example, Chapter 2 reviews the ideas and vocabulary of molecular and clinical genetics needed for a proper understanding of the subsequent material.

Some redundancy will be found in the text for two reasons. First, we expect users to read the book piecemeal, often stimulated by a clinical encounter of the day. For such users, limited coverage of the pertinent physiology of diabetic macular edema within the chapter dedicated to that topic (Chapter 7) makes pedagogical sense. In such cases, if time and interest permit, the comprehensive coverage provided in the Chapter 1 awaits. Second, redundancy aids understanding when the respective authors approach a topic with differences in framing and explanation.

The book has also been designed to provide the basis for linear study within the context of a course. Subsequent chapters build on antecedent ones. For example, to grasp the rationale for treatment of proliferative diabetic retinopathy (Chapter 9), one must understand its pathophysiology (Chapter 1) and how diabetic retinopathy severity has come to be defined (Chapter 5). Likewise, the significance and conundrums of diabetic macular ischemia (Chapter 8) are best understood after mastering the basis and limitations of ancillary studies (Chapter 6).

Chapters 11, 12, and 13 cover important, and somewhat autonomous, topics involving the effects of diabetes mellitus on the cornea, iris and angle, and optic nerve. Any clinician who cares for patients with diabetic retinopathy will need to be familiar with these concomitant manifestations of diabetic eye disease. More than once as a fellow debriding the corneal epithelium during a vitrectomy have I heard George Blankenship lament, “Doctor, if you’re not careful, you’ll turn this

retina fellowship of yours into a cornea fellowship!” Common pathophysiological themes tie many of the ocular manifestations of diabetes together.

The Chapters 14 and 15 broaden the landscape of consideration from the lab and ophthalmic lane to the community and society. Systems of health-care delivery and their financial incentives influence outcomes in diabetic retinopathy as surely as a patient’s blood pressure and glycosylated hemoglobin. We have made an effort to provide specific clinical examples of these effects drawn from practice to ground the discussion.

The last Chapter 16 synthesizes the principles introduced in the earlier chapters in 14 teaching vignettes. Although the Diabetic Retinopathy Study, the Diabetic Retinopathy Vitrectomy Study, the Early Treatment Diabetic Retinopathy Study (ETDRS), and the contemporary clinical trials of the Diabetic Retinopathy Clinical Research Network often provide a foundation of reliable evidence upon which the clinician can base clinical decision making, the complexity of real cases just as often undercuts the extrapolation of classic studies to practice. To cite one example of many, how should one manage clinically significant macular edema in an 80-year-old, when the ETDRS excluded patients older than age 70? Moreover, as level I evidence always, and increasingly, lags behind the development of diagnostic tests and promising treatments for diabetic retinopathy, the importance of experience, informed opinion based on wide reading, and clinical consensus remains as critical as ever in 2010. Chapter 16 was written in this spirit. The cases were circulated among the coauthors who commented independently on them. The coauthor assigned to discuss the case then compiled the independent responses, went back to the literature, and wrote a considered commentary. We hope that you will find these balanced and supported by the evidence marshaled.

We encourage feedback. Your comments, suggestions, and ideas for cases to include in future editions will help us to improve the book.

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