



The Eye

Robert Folberg

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Although this chapter comes at the end of the book, it is not the least important. Vision is a major quality-of-life issue. Before the public awareness of acquired immunodeficiency syndrome (AIDS) and Alzheimer disease, the most feared disease among Americans was cancer, and the second most feared disease was blindness. So great is the fear of blindness that even today, people often tell their physicians, "Doctor, I'd rather be dead than be blind!"

In general, diseases that produce loss of vision do not attract as much attention as do many of the life-threatening conditions described in this book. For example, age-related macular degeneration (AMD) is the most common cause of irreversible visual loss in the United States. Most individuals with AMD do not even suffer from a total loss of vision – an immersion into darkness. The histopathology is unimpressive: small scars develop in the macula. But consider the effect of these tiny scars in a retired schoolteacher with AMD. The central portion of her or his vision is lost. The faces of spouse or grandchildren are not visible. He or she cannot read a book or newspaper. Once a model of independence, this teacher can no longer drive a car and

must be chauffeured everywhere. In short, this person is robbed of the common joys that most of us take for granted.

To study the eye, one needs to comprehend all that has come before. For example, the pathology of the eyelids builds on knowledge of dermatopathology (Chapter 25), and the pathology of the retina and optic nerve extends what was learned in Chapter 28 about the brain and central nervous system. However, the study of ocular pathology does not merely repeat what has been presented thus far. The eye provides the only site in which a physician can directly visualize a variety of microcirculatory disturbances ranging from arteriosclerosis to angiogenesis in the clinic. Although there are conditions that are unique to the eye (e.g., cataract and glaucoma), many ocular conditions share similarities with disease processes elsewhere in the body that are modified by the unique structure and function of the eye (Fig. 29-1).

The eye has much to teach us about important mechanisms of disease that extend far beyond the visual system. For example, the tumor suppressor gene, *RB*, was described in retinoblastoma, a quite uncommon ocular tumor of