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The Cornea

Scientific Foundations and Clinical Practice
Third Edition

Edited by

Gilbert Smolin, M.D.

Clinical Professor of Ophthalmology, University of California, San Francisco,
School of Medicine; Research Ophthalmologist, Francis I. Proctor Foundation
for Research in Ophthalmology, San Francisco

Richard A. Thoft, M.D.

Professor and Chairman of Ophthalmology, University of Pittsburgh School
of Medicine; Principal Investigator, The Corneal Transplantation Laboratory,
The Eye and Ear Institute, Pittsburgh

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Clinical Diseases of the Tear Film

Keratoconjunctivitis Sicca

David W. Lamberts

This section considers four topics. The first is a rational method for dividing the dry eye syndromes into five categories. The second is the techniques available for diagnosing the dry eye, or sicca, syndromes. The third is the currently or potentially available methods useful in treating these diseases. The complications of the dry eye syndromes are discussed last. A dry eye or keratoconjunctivitis sicca syndrome is said to exist when the quantity or quality of the precorneal tear film is insufficient to ensure the well-being of the ocular epithelial surface [39].

Categories of Dry Eye Syndromes

Dividing the dry eye syndromes into five varieties was originally suggested by Holly and Lemp [26]. These divisions are based on specific deficiencies that may have been chosen somewhat arbitrarily; nevertheless, they have excellent clinical applicability. The divisions are as follows: aqueous tear deficiency, mucin deficiency, lipid abnormalities, lid surfacing abnormalities, and epitheliopathies.

Aqueous Tear Deficiency

The aqueous layer forms the greatest bulk of the precorneal tear film. Aqueous tears are produced in the main lacrimal glands, with a lesser contribution from the accessory glands of Wolfring and Krause. Aqueous deficiency is by far the most common of the dry eye syndromes. Various causes share responsibility for the aqueous deficiency syndromes (Table 14-1). In spite of their rather diverse origins, the clinical presentation of these diseases is similar. One entity, Sjögren's syndrome, is such an important disease it is discussed separately in the second section of this chapter.



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