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Endocrine Ophthalmopathy

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George Kahaly, Mainz

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Introduction

Endocrine or thyroid-associated ophthalmopathy is a complex orbital disease of autoimmune etiology, characterized by cell infiltration (i.e. lymphocytes, macrophages), edema, and proliferation of retrobulbar tissue. These changes predominantly affect the extraocular muscles and connective tissue, whereas retrobulbar fat and lacrimal glands are afflicted to a smaller degree. Usually, exophthalmos or protrusion of the eyeballs is present. Endocrine ophthalmopathy may occur alone, or in association with diffuse thyrotoxic goiter of prètibial myxedema, or with both conditions. The
association of ophthalmopathy with endocrinopathy as a multisystem disorder is characterized by one or more of three clinical entities: autoimmune thyroid disease, infiltrative ophthalmopathy and prétibial dermopathy. The book stresses the new molecular aspects of this autoimmune endocrine disorder. It encompasses recent data on genetics, pathogenesis, immunology, molecular biology, diagnosis and therapy. The first article is an overview on histology and histochemistry of the retrobulbar tissue whereas the next paper focuses on the immunogenetics of ophthalmopathy. The following three articles are devoted to the role of cell-mediated, humoral immunity respectively as well as to the biological activity of circulating autoantibodies against the retrobulbar tissue. The next six chapters discuss the possible target cells (fibroblasts, myoblasts and adipocytes) against which autoantibodies are directed and the antigenic sites which could activate retrobulbar lymphocytes. A further article outlines the natural history of thyroid eye disease and discusses the relationship between hyperthyroidism and ophthalmopathy (one or two closely related disorders?). The next paper covers the ophthalmological assessment, differential diagnosis, ocular tests and orbital studies useful in diagnostic evaluation, it also includes the

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development of major complications such as restrictive myopathy, exposure and optic neuropathy. The remainder of the book suggests a rational approach to the management of endocrine ophthalmopathy outlining medical, irradiative, and surgical modes of therapy.

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George Kahaly