Contents

Chapter 1 OCT and Histology **1**

– Hyaloid Membrane and Vitreous *1*
– Inner Retina *1*
– Outer Retina *1*
– Photoreceptors, Cones and Rods *2*
– Retinal Support Structures *2*
– Retinal Pigment Epithelium *2*
– Bruch's Membrane *3*
– Choroid *3*

Chapter 2 Normal Chorioretinal OCT Analysis **11**

– Retina and Choroid Morphology *11*
– Retina and Choroid Structure *11*
– Infrastructure *15*
– Vertical Structures *15*
– Horizontal Structures: Retinal Layers *16*
– Segmentation *16*
– Normal Tissue Reflectivity *18*
– High Reflectivity *18*
– Low Reflectivity *18*
– Choroid *18*
– Artifacts *19*

Chapter 3 Qualitative Analysis of Pathologic OCTs **21**

– OCT Limits *22*
– OCT Imaging of Optic Disk *22*
– Morphology Study *22*
– Global Retinal Deformation *22*
– Retinal Profile and Retina Surface Deformation *23*
– Morphologic Posterior Alterations *24*
– Retinal Profile Outline *24*
– Outer Retina Outline *30*
– Retinal Structure Study: Segmentation *41*
– Structure: Segmentation *41*
– Inner Retina and Outer Retina *42*
– Outline–Segmentation *46*

– Reflectivity Study *48*
– High Reflectivity *48*
– Low Reflectivity *49*
– Abnormal Formations *55*
– Preretinal Formations *55*
– Intraretinal Formations *55*
– Posterior Formations *55*
– Shadow Areas (Screen Effect, Shadow Cone) *59*

Chapter 4 Quantitative Analysis of Pathologic OCTs 61
– Linear Measurements of Axial B-scans *61*
– Measurement of Coronal Images and “En Face” Scans *61*
– Quantitative Segmentation *62*
– Retinal Mapping *62*
– Quantitative Analysis: Thickness *63*
– Increased Thickness *63*
– Reduced Thickness *63*
– Thickness Variations of the Retinal Layers *65*
– Retinal Volume *65*
– Quantitative Choroid Analysis *66*
– Quantitative Optic Disk Analysis *66*

Chapter 5 “En Face” Imaging 67
– 3D Images: Segmentation of Chorioretinal Layers *67*
– Frontal Plane Scans *67*
– Frontal "En Face" Sections Fit to the Retinal Pigment Epithelium Concavity *68*
– Thickness of the Retinal Section *68*
– Tips and Parameters of the "En Face" Scanning Procedure *79*

Chapter 6 Synthetic Study 80

Chapter 7 Reporting 82
Reporting an OCT Test *82*
Scans *82*

Chapter 8 Glaucoma 85
– Glaucoma Scan Protocols *85*
– Glaucoma Follow-up *86*
– Ganglion Cell Complex Glaucoma Progression Report *86*
– Retinal Nerve Fiber Layer Glaucoma Progression Report *87*
– Normative Database *87*
– Glaucoma Diagnosis *87*

Index *93*