

Contents

Introduction	XIII
The Paradox of High Success	1
Tactics in Ophthalmic Surgery	2
1 Spatial Tactics	4
1.1 Pressure Systems for Regulating Chamber Volume	4
1.1.1 No-Outflow Systems	6
1.1.2 Controlled-Outflow Systems	6
1.1.3 Uncontrolled-Outflow Systems	6
1.1.4 Effect of External Forces on Regulating Systems	8
1.1.5 Basic Safety Strategy for Spatial Tactics	9
1.2 Space-Tactical Instruments	9
1.2.1 Watery Fluids	10
1.2.2 Viscous and Viscoelastic Materials	14
1.2.3 "Membranous" Implants (Bubbles)	21
1.3 The Field of Spatial Tactics	28
1.3.1 The Pressure Chamber of the Globe	28
1.3.2 The Pressure Chamber of the Vitreous	28
1.3.3 Effect of Deforming Forces on the Pressure Chambers of the Eye	29
1.3.4 Deformations Caused by External Forces	31
1.3.5 Deformation by Hinge Folds	33
1.3.6 Margin of Deformation	36
1.3.7 Summary of Safety Strategy for External Forces	37
2 Tissue Tactics	38
2.1 The Application of Mechanical Energy	39
2.1.1 Handles	39
2.1.2 Grasping	44
2.1.3 The Division of Tissues	64
2.1.4 Uniting of Tissues	89
2.2 Application of Heat	109
2.2.1 Heat from an External Source	110
2.2.2 Heat Generation in Tissues	112
2.2.3 Application of Cold	114
2.3 Application of Light	115
2.4 The Utilization of Chemical Effects (Electrolysis)	118

3	Preparation of the Operating Field	119
3.1	Lowering the Pressure in the Intraocular Chambers	119
3.2	Anesthesia	119
3.2.1	Instillation Anesthesia	120
3.2.2	Injection Anesthesia	120
3.2.3	Akinesia of the Orbicularis Muscle	120
3.2.4	Retrobulbar Anesthesia	123
3.3	Maintaining Separation of the Lids	124
3.3.1	Methods of Opening the Lids	124
3.3.2	Instruments for Maintaining Lid Separation	126
3.4	Fixation of the Globe	128
3.5	Traction Sutures for Orienting the Globe	129
3.6	Sutured-On Stabilizing Rings	130
3.7	Placement of Transconjunctival Muscle Sutures	130
3.8	Final Check of Preparations	132
4	Operations on the Conjunctiva	133
4.1	General Problems of Surgical Technique	133
4.2	Episcleral Dissection ("Deep Dissection")	135
4.3	Subepithelial Dissection ("Superficial Dissection")	138
4.4	Suturing the Conjunctiva	142
5	Operations on the Cornea and Sclera	145
5.1	General Problems of Surgical Technique	145
5.2	Dissection Technique	146
5.3	Planning the Approach to the Eye Interior	151
5.3.1	Anatomic Factors in Opening the Globe	151
5.3.2	Geometric Factors in Opening the Globe	152
5.3.3	Comparison of Different Incision Profiles	162
5.4	Methods of Opening the Anterior Chamber	163
5.4.1	Keratome Section	164
5.4.2	Cataract Knife Section	165
5.4.3	Cutting with a "Point" Cutting Edge	168
5.4.4	Scissor Section	170
5.4.5	Two-Plane Stepped Incision	174
5.4.6	Three-Plane Stepped Incision	174
5.4.7	Trephine Incisions	176
5.5	Suturing the Cornea and Sclera	182
5.5.1	Suture Technique	182
5.5.2	Special Types of Suture	185
6	Operations on the Ciliary Body	191
6.1	Cyclodialysis	191
6.2	Cyclohexy	193
7	Operations on the Iris	194
7.1	Iris Displacement and Reposition	194
7.2	Grasping and Cutting	198
7.3	Iridectomies	200

7.4	Synechiolysis	208
7.5	Surgical Enlargement of the Pupil	208
7.6	Repair of Iris Defects	212
7.7	Suturing the Iris	214
7.8	Reposition of a Disinserted Iris	218
8	Operations on the Lens	221
8.1	General Problems of Surgical Technique	221
8.2	Intracapsular Lens Delivery	223
8.2.1	Mobilization (Zonulolysis)	223
8.2.2	Aligning the Lens for Delivery	225
8.2.3	Locomotion	227
8.2.4	Instruments for Lens Delivery	229
8.2.5	The Phases of a Lens Delivery	231
8.2.6	Completing the Intracapsular Delivery after Inadvertent Capsule Rupture	235
8.3	Extracapsular Cataract Operation	237
8.3.1	Anterior Capsulotomy	239
8.3.2	Delivery of the Nucleus	249
8.3.3	Phacoemulsification	263
8.3.4	Delivery of the Cortex	288
8.3.5	Operations on the Posterior Lens Capsule	295
9	Anterior Vitrectomy	307
9.1	General Problems of Surgical Technique	307
9.2	Strategic Decision-Making Criteria in Vitreous Prolapse . . .	310
9.3	Anterior Vitrectomy for Vitreous Prolapse Caused by External Factors	311
9.4	Management of Vitreous Prolapse Caused by Internal Hemorrhage	316
10	Future Trends	318