

Contents

Foreword xi

Preface xiii

Part I

Evaluation and Preparation 1

Chapter 1

Patient Selection 3

Maria M. Aaron, MD

Criteria for Surgical Intervention 3

Factors That Affect Surgical Risk 4

Ethical Considerations 7

Implications of the Surgeon's

Experience 8

Chapter 2

Preparation of the Patient 11

Rebecca D. Sarran, MD

Hreem Patel, MD

Jack A. Cohen, MD

Preparations in the Office 11

Process in the Operating Room 13

Chapter 3

Preparation of the Surgeon 17

Alla Goldberg, MD

Eric R. Holz, MD

Familiarization 17

Understanding the Planned Procedure 18

Knowing the Tools 18

Physical Factors That Affect the

Surgeon 18

Hand Preparation 20

Operating Room Environment 21

Chapter 4

Informed Consent 25

Kian Eftekhari, MD

Paul J. Tapino, MD

Importance of Informed Consent 25

Elements of Informed Consent 26

Obtaining Informed Consent:

Challenges for Residents 27

Summary 31

Chapter 5

Simulation in Surgical Training 35

William G. Gensheimer, MD

Yousuf M. Khalifa, MD

Wet Laboratory 35

Intraocular Simulation 36

Virtual Reality 40

Part II

Surgical Logistics 43

Chapter 6

The Importance of Ergonomics for Ophthalmologists 45

Sandra M. Woolley, PhD

Anna S. Kitzmann, MD

Ergonomics and Ergonomic Risk

Factors 45

Adopting Ergonomically Friendly

Practices 46

Reducing the Risk of Developing

Musculoskeletal Disorders 59

Chapter 7

The Operating Microscope and Surgical Loupes 63

Norman A. Zabriskie, MD

Daniel I. Bettis, MD

Advantages and Disadvantages of

Magnification 63

Patient Positioning 64

Surgeon Positioning 68

Positioning the Bed 70

Stabilizing the Hands 71

Microscope Function 76

Surgical Loupes 80

Chapter 8 Surgical Instruments and Blades 85

Robert B. Dinn, MD
Jay M. Lustbader, MD

Surgical Instruments 85
Other Specialized Surgical
Instruments 104
Surgical Blades 106

Chapter 9 Suture Materials and Needles 111

Jennifer Lee, MD
Keith D. Carter, MD

Characteristics of Sutures 111
Classification of Sutures 111
Needles 115

Chapter 10 Lasers 119

Neeti Parikh, MD
Jonathan D. Walker, MD

Laser Physics 119
Laser–Tissue Interactions 120
Wavelength 123
Controlling the Energy 124
Putting the Variables Together 125
Laser Safety 127
Patient Issues 128
New Directions 129

Chapter 11 ACGME Requirements for Surgical Training 133

Bryan J. Winn, MD

ACGME Case Logs 133
Common Pitfalls 135
Tips for Maintaining an Accurate Surgical
Log 136
Beyond Residency and the ACGME 137
Milestones 137

Part III Intraoperative Considerations 141

Chapter 12 Aseptic Technique and the Sterile Field in the Operating Room 143

Ensa K. Pillow, MD
John Russell Burks, MD

Skin Preparation 143
Application of Antiseptic Agents 144
Hand Scrubbing 144
Gowning and Gloving 147
Draping 148
Sterile Field 148

Chapter 13 Ophthalmic Anesthesia 153

Steven J. Gedde, MD
Yunhee Lee, MD, MPH

Sedation 153
Local Anesthetic Agents 154
Regional Anesthetic Agents 155
Local Anesthesia 157
Regional Anesthesia 158
General Anesthesia 163
Facial Nerve Blocks 164
Complications of Ophthalmic
Anesthesia 165

Chapter 14 Hemostasis 171

J. Paul Dieckert, MD, MBA

Prevention 171
Heating 171
Vasoconstriction 173
Biochemical Enhancement of
Hemostasis 173
Mechanical Tamponade 174
Embolization 174

Chapter 15 Suturing and Knot Tying 177

Edward J. Wladis, MD
Paul D. Langer, MD

Simple Square Knot 177
Basic Suturing Principles 179
Common Suturing Techniques 180

Chapter 16 Intraocular Fluids 187

James P. Dunn, MD

Ophthalmic Viscosurgical
Devices 187
Irrigating Fluids 191
Mydriatics and Miotics 192
Anesthetics 193
Corticosteroids, Antibiotics, and
Antifungals 194
Capsular Staining Agents 195

Vascular Endothelial Growth Factor
Antagonists 195
Compounding Intraocular
Drugs 196

Chapter 17 **Patient Safety Issues 199**

Andrew G. Lee, MD
Claudia M. Prospero Ponce, MD
Infection Prophylaxis 199
Surgery on the Incorrect
Eye 199
Incorrect Intraocular Lens
Insertion 202
Minimizing Medication Errors:
Communication About Drug
Orders 202
Preventing Surgeon-Related Fire in the
Operating Room 205

Part IV **Postoperative Considerations 213**

Chapter 18 **Postoperative Management 215**

Dmitry Pyatetsky, MD
Nicholas J. Volpe, MD
Postoperative Instructions 215
Timing of Postoperative Care 217
Transition of Care 219
Focus of the Examination 220
Pain Management 221
Management of Complications 222

Chapter 19 **The Healing Process 229**

Casey Mickler, MD
Frank Moya, MD
Peter A. Quiros, MD
Healing by Intention 229
The Process of Healing 230
Wound Healing in Dermal/Conjunctival
Tissue 233
Corneal Wound Healing 236
Scleral Wound Healing 239
Uveal Wound Healing 240
Modifying Wound Healing 240
Wound Healing Enhancers 242
The Ultimate Goal 243

Chapter 20 **Dressings 247**

David K. Wallace, MD, MPH
Shaohui Liu, MD, PhD
Advantages and Disadvantages of
Postoperative Dressings 247
Indications 248
Supplies 248
Technique for Dressing Placement 250
Postoperative Instructions 252
Dressing Removal 253

Chapter 21 **Handling of Ocular Tissues for Pathology 255**

Mahendra K. Rupani, MD
Christa Soekamto, MD
Anvesh C. Reddy, MD
Preoperative Planning, Cryosection,
and Routine Handling of
Specimens 255
Supplies and Equipment,
Requisitions 256
Labeling of Specimen Containers 258
Specimen Requisitions 258
Transportation 259
Frozen Sections 259
Pearls for Handling of Routine
Specimens 261
Special Procedures 265
Gross Specimens Only 266

Chapter 22 **Complications and Their Consequences 269**

Sarah W. DeParis, MD
M. Reza Vagefi, MD
Care of the Patient 269
Medicolegal Implications of an
Error 271
Care of the Surgeon in the Event of an
Error 273

Appendix A **Preferred Responses, Chapter Self-Assessment Tests 277**

Index 279