Contents

SECTION I: CORNEAL STRUCTURE

1. **Cornea: Structural Features and Wound Healing 3**
   Antony M Poothullil, Ilene K Gipson (USA)
2. **New Concepts in the Structural Aspects of the Human Cornea 15**
   Cynthia Roberts (USA)

SECTION II: OVERVIEW OF LAMELLAR KERATOPLASTY

3. **Central Lamellar Keratoplasty: From Past to Present 23**
   Carmen Barraquer C (Colombia)
4. **Classification of Lamellar Corneal Surgery 36**
   Thomas John (USA), Enrique S Malbran (Argentina)

SECTION III: OPTICAL ANTERIOR LAMELLAR KERATOPLASTY

5. **Anterior Lamellar Keratoplasty and "Peeling-off" Technique 47**
   Enrique S Malbran, Enrique Malbran Jr, Jorge Malbran (Argentina)
6. **Intrastromal Air Injection in Deep Lamellar Keratoplasty 94**
   Eduardo A Arenas (Colombia)
7. **Intrastromal Air, Big-Bubble Technique 102**
   Klaus D Teichmann, Mohammed Anwar (Saudi Arabia)
8. **Intrastromal Fluid Technique (Hydrodelamination) 117**
   Juntaro Sugita (Japan)
9. **Planned Near-Descemet's Dissection in Deep Lamellar Keratoplasty, Using Air and Fluid 125**
   Mohammed Anwar, Klaus D Teichmann (Saudi Arabia)
10. **Viscoelastic Dissection in Deep Lamellar Anterior Keratoplasty 134**
    Weldon W Haw, Edward E Manche (USA)
11. **Divide and Conquer Technique for Deep Lamellar Keratoplasty 140**
    Kazuo Tsubota, Shigeto Shimmura (Japan)
12. **Trypan Blue Staining of the Human Cornea for Deep Anterior Lamellar Keratoplasty 144**
    Emilio Balestrazzi, Angelo Balestrazzi, Luigi Mosca (Italy)
13. **Indocyanine Green and Forced Hydrodissection in Total Anterior Lamellar Keratoplasty .. 150**
    Thomas John (USA)

14. **Keratoconus: Inlay Lamellar Keratoplasty** **165**
Anita Panda (India)
15. **Keratoconus: Onlay Lamellar Keratoplasty—Epikeratoplasty** **177**
Anita Panda, Preetha J, Raju S (India)
16. **Anterior Lamellar Techniques for Keratoconus** **186**
Michael P Ehrenhaus, David J Schanzlin (USA)
17. **Deep Anterior Lamellar Keratoplasty with Vacuum-dried Corneal Tissue: A Versatile Approach** **195**
Chad K Rostron (United Kingdom)
18. **Microkeratome-assisted Lamellar Keratoplasty** **206**
Massimo Busin (Italy)
19. **Anterior Lamellar Keratoplasty with a Microkeratome and Deep Anterior Lamellar Keratoplasty Using a Peeling Technique** **220**
Khalil D Hanna, Henrik C Sagnieres, Jean-Louis Bourges (France), Thomas John (USA)
20. **New Surgical Techniques of Microkeratome and Excimer Laser-assisted Anterior Lamellar Keratoplasty for Keratoconus and Corneal Stromal Opacities: (1) Stromal Sandwich, (2) Epikeratoplasty** **235**
Kamil Bïlgïhan, Sengül C Özdek , Ayça Sari, Berati Hansanreïsoğlu (Turkey)
21. **Anterior Lamellar Keratoplasty Combined with Phacoemulsification** **250**
Marc C Muraine, Gérard Brasseur (France)
22. **Anterior Lamellar Keratoplasty Combined with Pars Plana Vitrectomy** **259**
Marc C Muraine, Gérard Brasseur (France)
23. **Two-Stage Anterior Lamellar Keratoplasty** **267**
Richard F Beatty (USA)
24. **Comparison of Anterior Lamellar Keratoplasty to Penetrating Keratoplasty** **284**
Jun Shimazaki, Shigero Shimura, Kazuo Tsubota (Japan)
25. **Use of Mechanical and Femtosecond Laser Microkeratomes and an Artificial Anterior Chamber for Harvesting Donor Corneal Lenticules** **293**
Melvin A Sarayba, Ethan M Kutzscher, Roy S Chuck (USA)
26. **Tissue Adhesive Technique: Sutureless Anterior Lamellar Keratoplasty Using Human Fibrin Tissue Adhesive** **306**
Vasileios Peponis (Greece), Herbert E Kaufman (USA)

SECTION IV: OPTICAL POSTERIOR LAMELLAR KERATOPLASTY

27. **Deep Lamellar Endothelial Keratoplasty: Large Incision Technique** **321**
Mark A Terry, Paula J Ousley (USA)
28. **Manual Posterior Lamellar Keratoplasty: A Newer Surgical Modality for Corneal Endothelial Disorders** **336**
Anita Panda (India)

29. Deep Lamellar Endothelial Keratoplasty: Small Incision Technique Combined with Phacoemulsification and Posterior Chamber Intraocular Lens Implantation 345
Mark A Terry, Paula J Ousley (USA)
30. Use of Indocyanine Green in Deep Lamellar Endothelial Keratoplasty 365
Thomas John (USA)
31. Upside-down Phacoemulsification in Deep Lamellar Endothelial Keratoplasty 372
Thomas John (USA)
32. Microkeratome-assisted Posterior Lamellar Keratoplasty with a Hinged Flap: A Retrospective 380
Rama Rajagopal (India), Sandeep Jain, Kathryn Colby, Dimitri T Azar (USA)
33. Deep Lamellar Endothelial Keratoplasty Combined with Scleral-fixated Posterior Chamber Intraocular Lens Implantation 390
Ashraf Amayem (Saudi Arabia), Magdi Helal (Egypt)
34. Posterior Lamellar Keratoplasty using the Femtosecond Laser (Femto-PLAK) 406
Berthold Seitz, Achim Langenbucher, Carmen Hofmann-Rummelt, Ursula Schlötzer-Schrehardt, Gottfried OH Naumann (Germany)
35. Descemetorhexis with Endokeratoplasty 411
Thomas John (USA)

SECTION V: TECTONIC AND THERAPEUTIC LAMELLAR KERATOPLASTY

36. Tectonic Lamellar Keratoplasty: Surgical Techniques 421
Deval R Paranjpe, David R Hardten, Richard L Lindstrom (USA)
37. Lamellar Keratoplasty for Recurrent Pterygium 438
Kathleen McClellan , Behrooz Golchin (Australia), Thomas KH Butler (United Kingdom), AW Wechsler, Con Petsoglou, Gerard Sutton, David IM Robinson, Lyon P Robinson (Australia)
38. Deep Lamellar Keratoplasty in Corneal Perforation 447
Shigeto Shimmura (Japan)
39. Tectonic Intralamellar Patch with Onlay Graft for Paracentral Corneal Perforations 452
Jeewan S Titiyal, Namrata Sharma, Rasik B Vajpayee (India)
40. Two-step Annular Tectonic Lamellar Keratoplasty for Severe Terrien's Marginal Degeneration 456
Tae-Won Hahn, Jae-Ho Kim (Korea)
41. Tectonic Lamellar Keratoplasty for Pellucid Marginal Degeneration 463
Karim Rasheed, George M Salib,Yaron S Rabinowitz (USA)
42. Lamellar Keratoplasty in Perforated Pellucid Marginal Degeneration 469
H Nida Sen, Ilker Eser (Turkey), Esen Karamursel Akpek (USA)
43. Lamellar Keratoplasty in Mooren's Ulcer 477
Jia-chi Chen, Han-ping Xie, Shi-you Zhou (China)
44. Tectonic Lamellar Keratoplasty for Mooren's and Mooren's-like Corneal Ulcers 483
Leejee H Suh, Esen Karamursel Akpek, Walter J Stark (USA)

45. Surgical Management of Keratoglobus 491
Colin M Kirkness, David H Jones (Scotland)
46. Lamellar Keratoplasty for Trachomatous Keratopathy 499
Rasik B Vajpayee, Namrata Sharma, Radhika Tandon (India)
47. Lamellar Keratoplasty for Ocular Surface Squamous Neoplasia 509
Anita Panda (India)
48. Lamellar Surgery for Fungal Keratitis 525
Munzer Abdulhak, Herbert Kaufman (USA)
49. Tectonic Lamellar Keratoplasty using a Microkeratome and an Artificial Chamber 532
Lee A Wiley, Mark A Joseph (USA)
50. Large-diameter Lamellar Keratoplasty in Severe Ocular Chemical Burns 543
Rasik B Vajpayee, Namrata Sharma (India)
51. Sclerokeratoplasty: Lamellolamellar and Lamellopenetrating Procedures 549
Anita Panda, Arvind Kumar (India)
52. Use of Fibrin Glue in Modified Sclerokeratoplasty 561
Eduardo A Arenas, Guillermo Barreto (Colombia)

SECTION VI: PEDIATRIC LAMELLAR KERATOPLASTY

53. Lamellar Keratoplasty for Anterior Corneal Scarring in Infants and Young Children 571
Gerald W Zaidman (USA)

SECTION VII: LAMELLAR KERATOPLASTY AFTER REFRACTIVE SURGERY

54. Automated Anterior Lamellar Keratoplasty for the Management of Complications in Refractive Surgery 579
Farha Hafezi, Hans Peter Iseli, Theo Seiler (Switzerland)
55. Big-bubble Deep Lamellar Keratoplasty for Post-LASIK Ectasia 586
Mohammed Anwar, Klaus D Teichmann (Saudi Arabia)

SECTION VIII: AMNIOTIC MEMBRANE IN LAMELLAR KERATOPLASTY

56. Amniotic Membrane Transplantation Combined with Keratoplasty in Neurotrophic Corneas 599
Kenneth R Kenyon (USA)
57. Use of Amniotic Membrane with Lamellar Keratoplasty in Recurrent Mooren's Ulcer 609
Shi-you Zhou, Jia-qi Chen, Han-ping Xie (China)

SECTION IX: LAMELLAR SURGERY IN ARTIFICIAL CORNEA

58. Lamellar Keratoplasty in AlphaCor Artificial Cornea Implantation 627
Celia R Hicks, Geoffrey J Crawford (Australia)

SECTION X: SPECIFIC ISSUES

59. Use of Pericardium and sclera in Corneal-scleral Melts 637
Sanjay R Kedhar, Oliver D Schein (USA)
60. Management of Complications of Anterior and Posterior Lamellar Keratoplasty 644
Graham Fraenkel (Australia)
61. Postoperative Management of Lamellar Keratoplasty: Optical and Tectonic 654
Noriko Koizumi, Shigeru Kinoshita (Japan)
62. Deep Lamellar Keratoplasty Combined with Autologous Limbal Grafting in Treating Unilaterally Severe Burnt Eye 663
Yu-Feng Yao (China)
63. Artificial Anterior Chambers 672
Thomas John (USA)

Index 681