

Contents

Foreword	xi
Preface.....	xiii
Acknowledgments.....	xiv
Contributors	xv
1. Pediatric Epilepsy Surgery: Introduction	1
<i>Oğuz Çataltepe and George I. Jallo</i>	
2. Intractable Epilepsy in Children and Selection of Surgical Candidates	7
<i>Yaman Eksioğlu and James J. Riviello Jr.</i>	
3. Epilepsy Surgery for Congenital or Early Lesions	14
<i>Ahsan N. V. Moosa, Tobias Loddenkemper, and Elaine Wyllie</i>	
I. Preoperative Assessment	
A. Electrophysiological Assessment	
4. EEG and Noninvasive Electrophysiological Monitoring	27
<i>Yaman Eksioğlu and James J. Riviello Jr.</i>	
5. Invasive Electrophysiological Monitoring	34
<i>Prasanna Jayakar and Ian Miller</i>	
6. Extra-operative and Intra-operative Electrical Stimulation	41
<i>Ingrid Tuxhorn</i>	
7. Magnetoencephalography	53
<i>Hiroshi Otsubo, Ayako Ochi, and O. Carter Snead III</i>	
B. Neuroimaging	
8. Structural Brain Imaging in Epilepsy	59
<i>Charles Raybaud and Elysa Widjaja</i>	
9. Functional MRI in Pediatric Epilepsy Surgery	74
<i>Torsten Baldeweg and Frédérique Liégeois</i>	
10. Application of PET and SPECT in Pediatric Epilepsy Surgery	82
<i>Ajay Kumar and Harry T. Chugani</i>	
11. Coregistration and Newer Imaging Techniques.....	93
<i>John M. K. Mislow and Alexandra J. Golby</i>	

C. Neuropsychological Cognitive Assessment

12. **Wada Testing in Pediatric Epilepsy**.....99
David W. Loring and Gregory P. Lee
13. **Preoperative Neuropsychological Assessment**.....104
Katrina M. Boyer

II. Surgical Approaches and Techniques

14. **Anesthetic Considerations and Postoperative ICU Care**.....113
Sulpicio G. Soriano and Michael L. McManus
15. **Implantation of Strip, Grid, and Depth Electrodes for Invasive Electrophysiological Monitoring**.....119
Oğuz Çataltepe and Julie Pilitsis

A. Resective Surgical Techniques in Temporal Lobe Epilepsy

16. **Mesial Temporal Sclerosis in Children**.....128
Mackenzie C. Cervenka and Adam L. Hartman
17. **Anteromesial Temporal Lobectomy**.....136
Oğuz Çataltepe and John Weaver
18. **Transsylvian Selective Amygdalohippocampectomy**.....147
Uğur Türe, Ahmet Hilmi Kaya, and Canan Aykut Bingöl
19. **Tailored Temporal Lobectomy Techniques**.....156
Jeffrey G. Ojemann
20. **Surgical Management of Lesional Temporal Lobe Epilepsy**.....161
Oğuz Çataltepe and G. Rees Cosgrove

B. Resective Surgical Techniques in Extratemporal Lobe Epilepsy

21. **Extratemporal Resection**.....174
Erich G. Anderer, Robert J. Bollo, and Howard L. Weiner
22. **Surgical Approaches in Cortical Dysplasia**.....185
Lorie D. Hamiwka, Ronald T. Grondin, and Joseph R. Madsen
23. **Posterior Quadrantic Resection and Disconnection**.....196
Roy Thomas Daniel, K. Srinivasa Babu, Rebecca Jacob, and Jean-Guy Villemure

C. Hemispherectomy and Hemispherotomy Techniques

24. **Hemispherectomy and Hemispherotomy Techniques in Pediatric Epilepsy Surgery: An Overview**.....205
Oğuz Çataltepe
25. **Anatomical Hemispherectomy**.....215
Concezio Di Rocco, Kostas N. Fountas, and Luca Massimi
26. **Hemidecortication for Intractable Epilepsy**.....225
Adam L. Hartman, James Frazier, and George I. Jallo
27. **Functional Hemispherectomy at UCLA**.....230
Sandi Lam and Gary W. Mathern
28. **Transsylvian Hemispheric Deafferentation**.....241
Johannes Schramm
29. **Peri-insular Hemispherotomy**.....251
Nicholas M. Wetjen and John R. W. Kestle

D. Disconnection Procedures	
30. Corpus Callosotomy.....	261
<i>Tai-Tong Wong, Shang-Yeong Kwan, and Kai-Ping Chang</i>	
31. Multiple Subpial Transections in Children with Refractory Epilepsy.....	268
<i>Zulma Tovar-Spinoza and James T. Rutka</i>	
32. Hippocampal Transection.....	274
<i>Hiroyuki Shimizu</i>	
E. Neuromodulation Procedures	
33. Vagus Nerve Stimulation.....	279
<i>David D. Limbrick Jr. and Matthew D. Smyth</i>	
34. Cortical and Deep Brain Stimulation	290
<i>Eric H. Kossoff and George I. Jallo</i>	
F. Radiosurgery	
35. Radiosurgical Treatment for Epilepsy.....	295
<i>Jean Régis, Marc Lévêque, Fabrice Bartolomei, Didier Scavarda, and Patrick Chauvel</i>	
III. Outcome	
36. Surgical Failure and Reoperation.....	309
<i>Jeffrey P. Blount, Hyunmi Kim, Curtis J. Rozzelle, and Pongkiat Kankirawatana</i>	
37. Postoperative Seizure Control	320
<i>Seema Adhami and Chellamani Harini</i>	
38. Postoperative Neuropsychological and Psychosocial Outcome	332
<i>Mary Lou Smith, Irene Elliott, and Suncica Lah</i>	
IV. Recent Advances	
39. New Techniques in Electrophysiological Assessment of Pediatric Epilepsy	341
<i>Tomoyuki Akiyama, Derrick Chan, and Hiroshi Otsubo</i>	
40. New Imaging Techniques in Pediatric Epilepsy Surgery	348
<i>Christoph M. Michel and Margitta Seeck</i>	
41. Optical Imaging Techniques in Neocortical Epilepsy	357
<i>Daryl W. Hochman and Michael M. Haglund</i>	
Index.....	363