Contents

Part I  Facial Embryology and Neonatal Palatal Cleft Morphology

1 Embryogenetics of Cleft Lip and Palate  ......................... 3
Geoffrey H. Sperber and Steven M. Sperber

2 The Value of Longitudinal Facial and Dental Casts Records in Clinical Research and Treatment Analysis ............... 35
Samuel Berkowitz

3 Facial and Palatal Growth  ........................................... 45
Samuel Berkowitz

Part II  Types of Clefts

4 The Effect of Clefting of the Lip and Palate and the Palatal Arch Form ............................................... 61
Samuel Berkowitz

5 Alternative Method Used to Correct Distorted Neonatal Cleft Arch Forms .................................................. 87
Samuel Berkowitz

6 Complete Unilateral Cleft of the Lip and Palate ............... 95
Samuel Berkowitz

7 Complete Bilateral Cleft Lip and Palate .......................... 133
Samuel Berkowitz

8 Lip Pits: Orthodontic Treatment, Dentition, and Occlusion – Associated Skeletal Structures .......................... 227
Samuel Berkowitz

Part III  Facial Growth in Cleft Palate Children

9 Characteristics of Facial Morphology and Growth in Infants with Clefts .................................................. 245
Sven Kreiborg, Nuno V. Hermann, and Tron A. Darvann
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>A 25-Year Longitudinal Facial Growth Study of Unilateral Cleft Lip and Palate Subjects from the Sri Lankan Cleft Lip and Palate Project</td>
<td>Brijesh Patel and Michael Mars</td>
<td>259</td>
</tr>
<tr>
<td>11</td>
<td>Airway Management in Patients with Robin Sequence</td>
<td>Kevin D. Han, Mitchel Seruya, Diego A. Preciado, and Albert K. Oh</td>
<td>279</td>
</tr>
<tr>
<td>12</td>
<td>Pierre Robin Sequence</td>
<td>Samuel Pruzansky and Julius B. Richmond</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td><strong>Part IV  Audiology/Otology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Management of Otopathology and Hearing Loss in Children with Cleft Palate and Craniofacial Anomalies</td>
<td>Amelia F. Drake and Jackson Roush</td>
<td>299</td>
</tr>
<tr>
<td></td>
<td><strong>Part V  Effects of Surgery and How It Was Utilized</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Palatal Wound Healing: The Effects of Scarring on Growth</td>
<td>Johannes W. Von den Hoff, Jaap C. Maltha, and Anne Marie Kuijpers-Jagtman</td>
<td>309</td>
</tr>
<tr>
<td>15</td>
<td>Facial Growth Related to Surgical Methods</td>
<td>Gunvor Semb and William C. Shaw</td>
<td>325</td>
</tr>
<tr>
<td></td>
<td><strong>Part VI  Lip and Palate Surgery: Millard–Berkowitz Protocol</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>The Influence of Conservative Surgery on Growth and Occlusion</td>
<td>Samuel Berkowitz</td>
<td>347</td>
</tr>
<tr>
<td>17</td>
<td>Choosing the Best Time for Palatal Surgery</td>
<td>Samuel Berkowitz</td>
<td>389</td>
</tr>
<tr>
<td></td>
<td><strong>Part VII  Another Tested Good Surgical Procedure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Two-Stage Palatal Surgery with Early Veloplasty and Delayed Hard Palate Repair: A Balanced View on Speech and Midfacial Growth Outcome</td>
<td>Hans Friede, Jan Lilja, and Anette Lohmander</td>
<td>413</td>
</tr>
<tr>
<td></td>
<td><strong>Part VIII  Facial Growth: Time Is the Patient’s Ally</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Management of the Premaxilla/Maxilla in Bilateral Cleft Lip and Palate</td>
<td>Karin Vargervik and Snehlata Oberoi</td>
<td>441</td>
</tr>
</tbody>
</table>
## Part IX Presurgical Orthopedics

**20 Neonatal Maxillary Orthopedics: Past to Present**
Anne Marie Kuijpers-Jagtman and Charlotte Prahl

**21 A Comparison of the Effects of the Latham–Millard POPLA Procedure with a Conservative Treatment Approach on Dental Occlusion and Facial Aesthetics in CUCLP and CBCLP**
Samuel Berkowitz and Martha Mejia

## Part X Midfacial Orthodontic/Orthopedic and/or Surgical Changes

**22 Protraction Facial Mask**
Samuel Berkowitz

**23 Protraction Facial Mask for Early Correction of Midfacial Retrusion: The Bergen Rationale**
Rolf S. Tindlund

**24 LeFort I Osteotomy**
S.A. Wolfe and Samuel Berkowitz

## Part XI Orthognathic Surgery

**25 Cleft Jaw Deformities and Their Management**
Jeffrey C. Posnick

**26 Secondary Bone Grafting of Alveolar Clefts**
Frank E. Abyholm, Sayuri Otaki, and Masatomo Yorimoto

**27 The Need for Differential Diagnosis in Treatment Planning**
Samuel Berkowitz

## Part XII Distraction Osteogenesis

**28 Rigid External Distraction: Its Application in Cleft Maxillary Deformities**
John W. Polley and Alvaro A. Figueroa

**29 Remodeling the Mandible by Distraction Osteogenesis**
Fernando Molina

**30 Management of Maxillary Deformities in Growing Cleft Patients**
Eric J.W. Liou and Philip K.T. Chen

**31 Preventing Relapse Following Distraction Osteogenesis for the Cleft Midface in Adults**
N.K. Koteswara Prasad, Syed Altaf Hussain, and Jyotsna Murthy
Part XIII  Speech

32  Diagnostic Procedures and Instruments Used in the Assessment and Treatment of Speech  707
Samuel Berkowitz

33  Variations in Nasopharyngeal Skeletal Architecture  715
Samuel Berkowitz

34  The Velopharyngeal Mechanism  741
Robert J. Shprintzen

35  Surgical Management of Velopharyngeal Dysfunction  759
Richard E. Kirschner and Adriane L. Baylis

36  Velopharyngeal Dysfunction Management Algorithms  777
Jeffrey L. Marsh

37  Optimal Age for Palatoplasty to Facilitate Normal Speech Development: What Is the Evidence?  787
Sally J. Peterson-Falzone

38  Speech, Language, and Velopharyngeal Dysfunction: Management Throughout the Life of an Individual with Cleft Palate  803
John E. Riski

39  Prosthetic Speech Appliances for Patients with Cleft Palate  821
Mohammed Mazaheri

40  Palatal Lift Prosthesis for the Treatment of Velopharyngeal Incompetency and Insufficiency  839
Mohammed Mazaheri

Part XIV  Third World Cleft Treatment

41  Cleft Palate Treatment in Developing Countries of Africa  855
Fadekemi O. Oginni and Wasiu L. Adeyemo

42  Birthing and Building Nascent Cleft Teams in Developing Countries  871
Emad Hussein, Hala Borno, and John van Aalst

43  Challenges in Cleft Care in Underdeveloped Countries  879
Isaac L. Wornom III

Part XV  Psychological/Team Function

44  Examining the Team Process: Developing and Sustaining Effective Craniofacial Team Care  885
Lynn M. Fox and Patricia Ann Stone
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Living with a Cleft: Psychological Challenges, Support and Intervention</td>
<td>Nichola Rumsey and Nicola Marie Stock</td>
<td>907</td>
</tr>
<tr>
<td>46</td>
<td>Managing Teasing and Bullying</td>
<td>Sara Shavel-Jessop, Joanna Shearer, Elizabeth McDowell, and Daniela Hearst</td>
<td>917</td>
</tr>
<tr>
<td></td>
<td><strong>Part XVI</strong> Multicenter Clinical Reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Part XVII</strong> Recording Patient Orthodontic/Surgical Findings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Berkowitz Recording Patient Information Form</td>
<td>Samuel Berkowitz</td>
<td>947</td>
</tr>
<tr>
<td></td>
<td><strong>Part XVIII</strong> The Patient’s World</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Social, Ethical, and Health Policy Issues in the Care of Children with Major Craniofacial Conditions</td>
<td>Ronald P. Strauss</td>
<td>955</td>
</tr>
<tr>
<td></td>
<td>Index</td>
<td></td>
<td>967</td>
</tr>
</tbody>
</table>