

Contents

Part I Pre-Surgical Treatment of Cleft Lip and Palate 1

1 The Role of Nasoalveolar Molding in the Presurgical Management of Infants Born with Cleft Lip and Palate..... 3

1.1 Introduction..... 3

1.2 Treatment Objectives and Clinical Indications of NAM 3

1.3 NAM Plate Fabrication 6

1.4 Alveolar Molding..... 10

1.5 Nasal Molding..... 16

1.6 Potential Complications and Clinical Pearls 22

1.7 Controversy to Conclusion 30

References..... 31

Part II Primary Repair of Unilateral Cleft Lip 35

2 Feature of Complete Unilateral Cleft Lip.....37

References..... 42

3 Geometric Analysis of Classic Cheiloplasty.....43

3.1 Geometric Analysis of Marking in Cheiloplasty..... 44

3.2 Analysis of Tennison’s Technique and Millard’s Technique 46

3.3 The Geometric Correlation between Tennison’s Technique and Millard’s Technique 48

References..... 50

4 West China Technique of Unilateral Cleft Lip Repair51

4.1	Reconstruction Principles	51
4.2	Marking (Using a Complete Cleft Lip as an Example).....	53
4.3	Incisions.....	55
4.4	Surgical Manipulation.....	55
4.5	Suturing.....	59
4.6	Basic Theory of the Technique	72
	References.....	74
5	Sommerlad's Technique of Unilateral Cleft Lip Repair	77
5.1	Introduction.....	77
5.2	Patient	77
5.3	Design.....	79
5.4	Prolabium Incision.....	79
5.5	Lateral Incision	80
5.6	Vomerine Flap	81
5.7	Dissection of Lip.....	83
5.8	Closure of Lip	85
5.9	Suture Technique of Nasal Deformity	88
5.10	Conclusion	89
	References.....	90
6	Cutting's Technique of Unilateral Cleft Lip Repair	93
6.1	Evolution of Cutting's Variant of the Mohler Repair	93
6.2	Statement on Nasoalveolar Molding.....	97
6.3	Markings.....	98
6.4	Surgical Technique	99
	References	101
7	Chang Gung Technique of Unilateral Cleft Lip Repair.....	105
7.1	Introduction	105
7.2	Integrated Approach	108
7.3	Surgical Refinements.....	112
7.4	Postoperative Care and Maintenance.....	150

7.5	Summary	154
	References	155
Part III	Primary Repair of Bilateral Cleft Lip	159
8	Features of Bilateral Cleft Lip	161
	References	164
9	West China Technique of Bilateral Cleft Lip Repair.....	167
9.1	Characteristic Deformities of Patients with Bilateral Cleft Lip Before and After Primary Cheiloplasty	167
9.2	Presurgical Treatment for Patients with Bilateral Cleft Lip	168
9.3	Surgical Principles of Treating Patients with Bilateral Cleft Lip	168
9.4	Incision Design for Patients with Bilateral Cleft Lip.....	171
9.5	Surgical Procedures	173
9.6	Tips on Cheiloplasty for Bilateral Cleft Lip	178
	References	180
10	Sommerlad's Technique of Bilateral Cleft Lip Repair	183
10.1	Introduction.....	183
10.2	Design	184
10.3	Vomerine Flap for Hard Palate Cleft	185
10.4	Prolabium Incision.....	186
10.5	The Lateral Incision for the Vomerine Flap.....	187
10.6	Closure of Vomerine Flap.....	188
10.7	Dissection of the Lip.....	189
10.8	Closure of Alar Base, Muscle, Mucosa and Skin.....	190
10.9	Suture Technique of Nasal Deformity	193
10.10	Follow-up.....	194
10.11	Conclusion	195
	References.....	195
11	Cutting's Technique of Bilateral Cleft Lip Repair.....	197
11.1	The Upper Lip Deformity	197

11.2	The Nasal Deformity.....	198
11.3	Presurgical Molding Options	198
11.4	Nasoalveolar Molding.....	199
11.5	Alveolar Molding and Gingivoperiosteoplasty	199
11.6	Nasal Molding.....	200
11.7	Early Principles of Lip and Nasal Reconstruction	201
11.8	Current Principles of Lip and Nasal Reconstruction.....	201
11.9	Technique.....	203
	References.....	208
12	Chang Gung Technique of Bilateral Cleft Lip Repair	211
12.1	Introduction.....	211
12.2	The Integrated Approach	211
12.3	Presurgical Management.....	213
12.4	Surgical Refinements	217
12.5	Conclusion	241
	References.....	242
Part IV	Primary Repair of Cleft Palate	245
13	Biological Basis and Geometry in Cleft Palate Repair.....	247
13.1	Exploit the Maximum Muscular Potential in Velopharyngeal Closure	248
13.2	Histological Changes of the Levator Veli Palatini Muscle Caused by Reconstruction in Primary Palatoplasty.....	256
13.3	Geometrical Basis of Using Palatal Mucoperiosteal Flaps to Close the Cleft without Leaving a Denuded Surface.....	262
	References.....	264
14	Sommerlad's Technique of Cleft Palate Repair	265
14.1	Introduction.....	265
14.2	Design.....	266
14.3	Closure of Nasal Mucosa	267
14.4	Dissection of Velo Palatine Levator	271

14.5	Closure of Oral Mucosa	274
14.6	Conclusion	275
	References.....	275
15	West China Technique of Cleft Palate Repair	277
15.1	The Correlation between the Objectives of Palatoplasty and Surgical Technique	277
15.2	The Need to Change the Concept of Palatoplasty	278
15.3	Geometric Basis of Modified Palatoplasty	279
15.4	Reconstruction of the Levator Veli Palatine Muscle is Central to Modern Palatoplasty	279
15.5	Complementary Approaches to Improve Palatoplasty Outcomes...	283
	References.....	284
Part V	Bone Grafting of Cleft Palate.....	285
16	Cutting's Technique of Cleft Palate Repair	287
16.1	Introduction.....	287
16.2	Technique.....	289
	References.....	294
17	The Foundation of a Finite Element Model for Cleft Palate and Analysis of Biomechanical Properties	297
17.1	Introduction to the Biomechanics of the Cleft Maxilla.....	297
17.2	Conclusions and Controversies.....	309
	References.....	309
18	West China Technique of Alveolar Bone Grafting.....	311
18.1	The Clinical Manifestations of Alveolar Cleft.....	312
18.2	The Goals of Bone Grafting in Cleft Alveolar Repair	312
18.3	Timing.....	313
18.4	Presurgical Orthodontic Management of Alveolar Cleft	314
18.5	The Choice of Graft Source	315
18.6	Bone Grafting in Unilateral Alveolar Cleft.....	315
18.7	Bone Grafting in Bilateral Alveolar Cleft.....	319

18.8	Simultaneous Surgical Retraction of Premaxilla and Bone Grafting in Bilateral Alveolar Cleft Repair.....	320
	References.....	322
19	Chang Gung Technique of Alveolar Bone Grafting.....	323
19.1	Introduction.....	323
19.2	Timing of Alveolar Bone Grafting.....	324
19.3	Presurgical Preparation	325
19.4	Indications for Presurgical Orthodontic Treatment.....	325
19.5	Surgical Technique	326
19.6	Flap Design	327
19.7	Source of Bone Graft	327
19.8	Operative Techniques for Unilateral Clefts	328
19.9	Operative Techniques for Bilateral Clefts.....	331
19.10	Post-operative Care.....	334
19.11	Evaluation of Results	334
19.12	Results.....	334
19.13	Complications	336
19.14	Discussion.....	339
19.15	Summary.....	341
	References.....	341
	Index.....	343