Contents

Chapter 1 The Anterior Mandible

3D diagnosis and planning 2
  Pronounced residual ridge atrophy 2
  Shortage of space, insufficient distance to the neighboring teeth 4

Single-tooth gap 5

Typical treatment course 6
  Late implant placement with immediate loading 6
Atypical treatment course – problematic baseline situation 9
  Immediate implant placement following extraction 9
  Note: Narrow and high gap between neighboring teeth 12

Problems and complications 13
  Horizontal augmentation of a knife-edge residual ridge 13

Immediate restoration 16
  Immediate implant placement and immediate loading 16

Multi-tooth gap 18

Typical treatment course 18
  Replacement of three incisors on two implants 18
Atypical treatment course – problematic baseline situation 22
  Preventive horizontal augmentation 22

Problems and complications 26
  Implant placement in an extensive bone defect 26

Immediate loading 30
  Immediate fixed partial denture loaded onto definitive implants 30
  Flapless implant placement and augmentation with immediate loading 34

Chapter 2 The Posterior Mandible 39

3D diagnosis and SimPlant planning 40
  3D planning of a single-tooth implant 40
  3D planning of a free-end situation 42

Single-tooth gap 44

Typical treatment course 45
  Replacing a molar with two implants 45
  Replacement of a molar with an implant with vertical mucosal distraction 47
Atypical treatment course – problematic baseline situation 50
  Replacement of a molar with one implant in a large gap 50

Problems and complications 54
  Fracture of a non-WP implant 54
  Note: Iatrogenic complication with nerve involvement 58

Immediate loading 60
  Immediate provisional loading of a definitive implant 60
Multi-tooth gap and free-end situation 63

Typical treatment course 63
  Two-session approach with augmentation 63

Atypical treatment course – problematic baseline situation 67
  Single-session approach with augmentation and transmucosal healing 67
  Large bone defect following the loss of implants 70

Problems and complications 75
  Fracture of an implant with a tooth/implant-supported fixed partial denture 75
  Failed augmentation with a bone block in a patient with an extremely narrow residual ridge 79

Immediate loading of provisional implants 85

Typical treatment course 85
  Bilateral free-end situation 85

Atypical treatment course 88
  Customizing provisional implants 88

Problems and complications 93
  Loosened blade implant, provisional implants to protect the augmentation material 93

Immediate loading of definitive implants 98

3D implant planning and its surgical implementation 98
  Diagnostic possibilities of cone beam CT imaging 98
  Stereolithographic surgical guides 102

Implant placement with the stereolithographic SurgiGuide surgical template 106
  Navigation technique 109

Chapter 3 The Edentulous Mandible 111

Diagnosis 112
  3D CBCT diagnosis and SimPlant planning 112
  3D diagnosis and SimPlant planning for the fabrication of the Sliwowski Overdenture System (SOS) SurgiGuide template 114
  Note. Extremely narrow mandible 117

Rehabilitation with implant placement only in the interforaminal region 118

Removable prostheses on two implants 119

Typical treatment course 119
  Removable immediate prosthesis on two implants and one prefabricated bar – the SOS method 119
  Notes on the SOS method 127

Atypical treatment course – problematic baseline situation 128
  Treatment of an extremely narrow residual ridge with the SOS method 128
  SOS with osteoplasty and augmentation 132
  Immediate implant placement following extraction and direct loading with SOS without a template 136

Problems and complications 141
  Early loss of an SOS implant and re-implantation 141
  Large mandibular defect and unexpected complication due to a slight change in position of the template 150
  Note on impression taking 155
Contents

Removable prostheses on several implants 156

Typical treatment course 156
Immediate fixed bridge on five implants and definitive bar-retained restoration 156
Note: Connecting bar with a locking mechanism 160

Atypical treatment course – problematic baseline situation 161
Immediate loading with a provisional bar and an age-appropriate, definitive telescopic crown-retained prosthesis 161

Problems and complications 165
Inadequate dental prosthesis on two non-preservable implants – implant re-insertion and immediate loading 165

Fixed bridges on several implants 169

Typical treatment course 169
Fixed immediate bridge – implant placement with a 3D template 169

Atypical treatment course – problematic baseline situation 175
Extraction, immediate implant placement and immediate fixed bridge 175
Immediate fixed bridge loaded onto provisional implants 180

Problems and complications 185
Destruction of the residual ridge due to peri-implantitis 185
Removal of an incorrectly placed implant 190

Full rehabilitation including implant placement in the posterior mandible 194

Typical treatment course 195
Fixed bridges for prosthetic restoration of the entire mandible 195
Immediate mandibular prosthetic restoration loaded onto provisional implants 198

Atypical treatment course – problematic baseline situation 201
Fixed immediate prosthesis following extensive dental treatment and augmentation 201
Selective extractions for the optimal positioning of definitive implants 205

Problems and complications 210
Premature loosening of provisional implants 210
Iatrogenic complication during the removal of provisional implants and peri-implantitis after 10 years of functional use 214

Immediate loading of definitive implants 221
Immediate loading of permanent implants with a fixed bridge 221

Chapter 4: The Anterior Maxilla 227

Diagnosis with esthetic considerations 228
3D diagnosis and SimPlant planning 230

Single-tooth replacement 233

Typical treatment course 233
Single-tooth implant – Simpler in Practice technique 233
Note Simpler in Practice Technique 237
Fabrication of the provisional restoration – Simpler in Practice 237
Esthetic requirements dictated by a high smile line 240

Atypical treatment course – problematic baseline situation 245
Single-tooth implants in an adolescent girl presenting with shortage of space 245
Note Implants in adolescents 250
Emergency implant placement following traumatic loss of an anterior tooth 251
Contents

Problems and complications 255
  Spontaneous perforation of the mucosa 255
  Note: Fracture risk of ceramic abutments 258
  Biological and mechanical complications: suture dehiscence and loosening of the screw retention 259
  Development of an apical cyst at an anterior dental implant 262
Immediate loading of a single-tooth implant in the presence of a well-preserved residual ridge 266
  Immediate implant placement and immediate loading following extraction of the primary canines 266
Immediate restoration of a single-tooth implant 270
  Immediate implant placement following an inflammatory process around tooth 22 270
Premolar implants and several single-tooth implants 274
  Premolar implant in a patient with a high smile line 274
  Several single-tooth gaps following traumatic tooth loss 277
  Restoration of several single-tooth gaps 282
Restoration of multi-tooth gaps 286
  Typical treatment course 286
    Replacement of four missing incisors on four implants 286
    Replacement of four missing incisors on two implants 289
  Atypical treatment course – problematic baseline situation 291
    Restoration of a multi-tooth gap with preservation of the anatomical structures 291
    Note: The "corkscrew technique" 294
    Simultaneous immediate and delayed implant placement to replace two central incisors 298
Problems and complications 305
  Implant treatment following the loss of an implant-supported restoration 305
  Note: Mucosal graft technique 310
  Immediate restoration loaded onto provisional implants following loss of the old implant-supported restoration 312

Chapter 5: The Posterior Maxilla

Diagnosis 320
  Conventional diagnosis 320
  Fabrication of a radiologic or surgical template 320
  Note: Shaping the surgical template 323
  3D diagnosis and planning 324

Restoration of single- and multi-tooth gaps 327
  Typical treatment course 327
    Fixed bridge with multiple abutments 327
    Note: Cosine curve technique to improve the gingival situation 330
  Atypical treatment course – problematic baseline situation 331
    Restoration in a case of pronounced, one-sided residual ridge atrophy 331
    Note: The cast coping laboratory method (relating to the case history on page 331) 338
    Sinus floor elevation with vertical and horizontal augmentation and single-tooth implant with orthodontic treatment 340
Problems and complications 347
  Sinus floor elevation with reconstruction of the residual ridge and gingiva 347
  Implant treatment after sinus floor elevation in two sessions 353
Immediate loading 359
  Immediate loading of a restoration on both provisional implants and natural teeth 359
363
Note Aligning IPIs
Sinus floor elevation with horizontal augmentation, implant placement and immediate restoration loaded onto IPIs
Immediate restoration supported on definitive implants and one natural tooth

Free-end situation

371
Simple treatment course (without sinus floor elevation)
Restoration in the form of an abbreviated dental arch without sinus floor elevation
Implant placement without sinus floor elevation with a 3D template

Typical treatment course
Sinus floor elevation with lateral augmentation and mucosal distraction
Note: Sinus elevation (sinus floor elevation, sinus lift)
Implant placement with sinus floor elevation using the two-session approach

Atypical treatment course – problematic baseline situation
Implant placement with sinus floor elevation accompanied by concomitant apicoectomy and lateral bone augmentation
Extensive augmentation in several directions

Problems and complications
Sinus floor elevation involving avoidance of a blood vessel and perforation of the maxillary sinus mucosa
Apical granuloma on a smooth machined implant

Immediate loading
Immediate restoration with concomitant sinus floor elevation
Sinus floor elevation, implant placement and immediate restoration loaded onto IPIs

Chapter 6 The Edentulous Maxilla

419
3D diagnosis with a custom template
Note on the stabilization of the template

Rehabilitation without reconstruction of the posterior maxilla

424
Typical treatment course
Bar connector restoration on six implants
Note: Exposure technique
Cantilever implant bridge on nine implants

Atypical treatment course – problematic baseline situation
Removable restoration – incidental finding by CT imaging

Problems and complications
Fixed restoration with a change in implant inclination – a mechanical complication
Note. Mechanical complications

Immediate loading
Immediate loading of definitive implants with NobelGuide
Note: Immediate restoration on healing abutments

Rehabilitation with reconstruction of the posterior maxilla

442
Typical treatment course
Sinus floor elevation and implant placement in a single session
Severe residual ridge atrophy: sinus floor elevation and vertical augmentation prior to implant placement
Note: Several augmentative procedures in one operation