Index

Numerics	about 125, 129	of interradicular sites in mandibular
3-D (three-dimensional) dentition	hard tissue factor: bone depth	buccal region
model, reconstructing 451,	125, 127, 130	about 335
452, 453, 454, 455, 456, 457	hard tissue factor: bone	hard tissue factor: bone
3-D (three-dimensional) design of	width 127, 130-131	depth 336, 338
insertion guides, for	hard tissue factor: cortical	hard tissue factor: bone
mini-implants	thickness 128, 129	width 336, 339-340
about 451, 461, 463	soft tissue factor: labial	hard tissue factor: cortical
combining guide plate and guide	frenum 127, 132	thickness 335-336
cylinder 461	soft tissue factor: mucogingival	hard tissue factor: shape of
determining area of guide plate on	junction 127, 132, 133	cortical plate 336, 340
digital dental model 461	of buccal shelf of mandibular	soft tissue factor: buccal
establishing digital data of mini-	buccal region	frenum 341, 342
implants and	about 364, 365-366	soft tissue factor: soft tissue
screwdrivers 457	hard tissue factor: bone depth	types 340–341
generating guide cylinder 461, 464	364, 369, 370	vital structures 341–342
generating guide plate 461	hard tissue factor: cortical	of interradicular sites of mandibular
reconstructing three-dimensional	thickness 364, 367–368	labial region
dentition model 451, 452,	hard tissue factor: plateau	about 303, 304
453, 454, 455, 456, 457	features 364, 366–367	hard tissue factor: bone
virtual placement of mini-implants	soft tissue factor: soft tissue	depth 307, 308-310
459, 460, 461, 462	thickness 369, 371	hard tissue factor: bone
3-D printing, generating actual	soft tissue factor: soft tissue type	width 307, 310-311
insertion guide	369, 371	hard tissue factor: cortical
through 464, 466	vital anatomical structure: inferior	thickness 305, 306-307
	alveolar nerve 369, 371	hard tissue factor: root
a	of infrazygomatic crest (IZC)	prominence 307, 311
accuracy, as an advantage of insertion	hard tissue factor: bone	soft tissue factor: attached
guides 446, 447-448	depth 188, 190, 192, 190-191	gingiva 307, 311, 312
adverse consequences, of soft tissue	hard tissue factor: cortical	soft tissue factor: labial
complications 519, 521	thickness 188, 189	frenum 307, 311
age, as a basic condition 26, 27	hard tissue factor: crest shape	of interradicular sites of maxillary
alveolar bone 33, 34	187–188, 187, 188	labial region
anaesthesia	hard tissue factor: dental	about 95, 98
appropriate technique for 497, 498	roots 192, 192–193	hard tissue factor: bone depth
for clinical procedures with insertion	soft tissue factor: maxillary	99–100, 100, 101
guides 476, 477	sinus 194, 195	hard tissue factor: bone
anatomical characteristics	soft tissue factor: soft tissue	width 100-102, 102, 103,
of anterior nasal spine (ANS)	type 192, 194	104, 105

anatomical characteristics (cont'd)	soft tissue factor: buccal frenum	about 56, 57
hard tissue factor: cortical	156, 157	dental roots 56-59, 60
thickness 98-99	soft tissue factor: soft tissue	maxillary sinus 60, 62-63
hard tissue factor: root	type 154–156, 155–156	nasal cavity 60, 64
prominence 103, 106	of maxillary tuberosity	neurovascular bundle 59-60,
soft tissue factor: labial	about 223–224, 224–225	61-62
frenum 103, 106	hard tissue factor: bone	ANS. See anterior nasal spine (ANS)
soft tissue factor: mucogingival	density 225, 226	anterior intrusion, as a clinical
junction 103, 106	hard tissue factor: bone	application with
of interradicular sites on maxillary	dimension 226–227, 228	infrazygomatic crest 208,
palatal region	hard tissue factor: cortical	209, 217
hard tissue factor: bone depth	thickness 226, 227	anterior nasal spine (ANS)
240-241, 241, 242	soft tissue factor: soft tissue	anatomical features 125, 127, 132,
hard tissue factor: bone	thickness 228	128–132, 133
width 241, 243, 243, 244	soft tissue factor: types of soft	biomechanical considerations
hard tissue factor: cortical	tissue 228	132, 133
thickness 238–240, 239–240	of midpalatal suture	clinical applications 136, 138–143
hard tissue factor: inclination of	about 297–298	insertion techniques 134–136, 137
cortical plate 244, 245	hard tissue factor: bone depth	selection of appropriate insertion
soft tissue factor: soft tissue	297–298	sites 132, 134
thickness 246, 247	soft tissue factor: soft tissue	anterior retraction
soft tissue factor: soft tissue	thickness 298	as a clinical application for
type 246, 246	vital structures 298	interradicular sites 252–269
vital structures 246–248, 248	of paramedian sites on maxillary	for interradicular sites of mandibula
of mandibular ramus	palatal region	buccal region 350–353
anatomical location 389,	about 270	in sagittal dimension 11, 12, 13
390, 391	hard tissue factor: bone	applications, clinical
hard tissue considerations 389,	depth 271, 272	for anterior nasal spine 136,
391, 392–393	hard tissue factor: cortical	138–143
optimal insertion sites 394–395,	thickness 270–271	for buccal shelf of mandibular
394, 396	soft tissue factor: soft tissue	buccal region
soft tissue considerations 391,	thickness 271, 272	mandibular dentition
394, 394–395	vital anatomical	distalisation 376, 377,
of mandibular symphysis	structures 272–273, 272, 273	378, 381
about 320–321	undesirable for mini-	molar uprighting 379, 381–384
hard tissue factor: bone	implants 422, 424–428	orthodontic traction of impacted
depth 322, 323	anatomical location, of mandibular	teeth 379, 384–386
hard tissue factor: cortical	ramus 389, 390–391	for infrazygomatic crest (IAC)
thickness 321, 322	anatomical sites	anterior intrusion 208, 209, 217
soft tissue factors 323, 324–325	anatomy-driven paradigm	molar distalisation 201, 202,
of maxillary buccal region	about 64, 65	203–208, 209, 210–212,
about 145, 147	mandible 68, 71, 72–74	213–214, 215
hard tissue factor: bone	maxilla 64, 65–68, 69–71	molar intrusion 209, 213,
density 146, 147	available for mini-plates 418,	218, 219–221
hard tissue factor: bone depth	419–420	orthodontic traction of impacted
149–151	anatomy-driven paradigm	teeth 214, 218, 222–223
hard tissue factor: bone width	about 56	for interradicular sites of mandibula
151, 153, 152–154	available anatomical sites	buccal region 350–363
hard tissue factor: buccal	about 64, 65	anterior retraction 350–353
exostosis 153, 154–155		molar intrusion 354, 358,
hard tissue factor: cortical	mandible 68, 71, 72–74	
	maxilla 64, 65–68, 69–71	359, 360–361
thickness 146, 148–149	general principles	molar protraction 353–358

molar uprighting 358, 359,	biomechanical considerations	as a hard tissue factor
361–363	of anterior nasal spine 132, 133	of interradicular sites of
for interradicular sites of maxillary	of buccal shelf in mandibular buccal	mandibular labial region
buccal region	region 369, 372	307, 310–311
en masse anterior retraction 164,	of interradicular sites	of interradicular sites of maxillary
166, 167, 168, 169, 170, 171,	about 107	buccal region 151, 152–154
172–173, 174	of mandibular buccal region	of interradicular sites of maxillary
molar intrusion 170,	343, 344	labial region 100–102, 103,
171, 177–180	of mandibular labial region 311,	104, 105
molar protraction 168, 170,	312, 313	of maxillary palatal region 241,
175–176	of mandibular symphysis 323, 325	243, 244
occlusal canting 171, 174,	biomechanics-driven paradigm	Brodie bite, in transverse
180–183, 184	about 75, 76, 77	dimension 18, 19
for interradicular sites of maxillary	incisor intrusion 79, 80–81	buccal exostosis, as a hard tissue factor
labial region	maxillary molar	in interradicular sites of
correction of gummy smile 118,	uprighting 76, 77, 78	maxillary buccal region
121–122, 123–124	molar intrusion 77, 79, 80	153, 154–155
correction of occlusal	molar protraction 82, 84, 85	buccal frenum, as a soft tissue factor in
canting 122, 125, 126,	orthodontic traction of impacted	interradicular sites of
127, 128	molars 79, 82, 83	maxillary buccal
incisor intrusion 114, 115,	bisphosphonates 28, 29-30	region 156, 157
117-118, 119-120	bone density	buccal interradicular region, placement
for interradicular sites of maxillary	about 33, 35–36	of mini-implants with
palatal region	as a hard tissue factor	insertion guides in
anterior retraction 252–269	of interradicular sites of maxillary	480-481, 482
molar distalisation 257, 259,	buccal region 146, 147	buccal shelf
261–262, 263, 264	of maxillary tuberosity 225, 226	mandibular buccal region
molar intrusion 257, 260-261	bone depth	anatomical characteristics
molar protraction 263, 265-269	about 33, 35, 37, 38–39	364–369, 370, 371
for paramedian sites	as a hard tissue factor	biomechanical
mini-implant-assisted skeletal	of buccal shelf of mandibular	considerations 369, 372
expansion 286, 288–289	buccal region 364, 369, 370	clinical
molar anchorage	of infrazygomatic crest	applications 376, 377–386
reinforcement 280, 284-286,	(IZC) 188, 190, 191, 192	insertion techniques 160-164,
287, 288	of interradicular sites of	165, 166
molar distilisation 280-282, 284	mandibular labial	selection of appropriate insertion
molar intrusion 293, 295	region 307, 308-310	sites 371–372
traction of impacted	of interradicular sites of maxillary	placement of mini-implants with
teeth 289–293, 294	labial region 99–100, 101	insertion guides on 481,
attached gingiva, as a soft tissue factor	of interradicular sites of maxillary	483, 484
of interradicular sites of	buccal region 149–151	
mandibular labial region	of mandibular symphysis in	C
307, 311, 312	mandibular labial	causative factors, removal of
-	region 322, 323	528, 529
b	of maxillary palatal	characteristics
basic conditions	region 240-241, 242	drilling methods 5, 6
age 519, 521	of midpalatal suture 297–298	materials 2
gender 26, 27	bone dimension, as a hard tissue factor	morphology 4–5, 11
biocortical engagement, monocortical	of maxillary tuberosity	clinical applications
engagement versus 540	226–227, 228	for anterior nasal spine 136, 138–143
biomechanical advantages,	bone width	for buccal shelf of mandibular
of mini-plates 422, 428–430	about 37, 38, 39, 40–42	buccal region

clinical applications (cont'd)	mini-implant-assisted skeletal	inserting mini-implants
mandibular dentition	expansion 286, 288–289	476, 477–478
distalisation 376, 377,	molar anchorage	removing insertion guides 479
378, 381	reinforcement 280, 284-286,	verifying fit of insertion
molar uprighting 379, 381–384	287, 288	guides 473-475
orthodontic traction of impacted	molar distilisation 280-282, 284	for mandibular ramus
teeth 379, 384–386	molar intrusion 293, 295	insertion 399-401, 402
for infrazygomatic crest (IAC)	traction of impacted teeth	postinsertion 401
anterior intrusion 208, 209, 217	289–293, 294	preinsertion preparation 399
molar distalisation 201, 202,	clinical decisions, for mini-implant	for removing fractured mini-
203-208, 209, 210-212,	fractures in different clinical	implants 511, 512
213–214, 215	scenarios 511	complications, potential 19-32
molar intrusion 209, 213,	clinical features, of mini-plates	cortical thickness
218, 219–221	advantages and	about 37, 39, 42
orthodontic traction of impacted	disadvantages 417-418	as a hard tissue factor
teeth 214, 218, 222-223	available anatomical	of buccal shelf of mandibular
for interradicular sites of mandibular	sites 418, 419–420	buccal region 364, 367–368
buccal region 350-363	structure 415, 416-417	of infrazygomatic crest
anterior retraction 350-353	clinical indications	(IZC) 188, 189
molar intrusion 354, 358,	about 9–10	of interradicular sites of
359, 360–361	mini-plates	mandibular labial
molar protraction 353-358	about 418	region 305, 306-307
molar uprighting 358,	anatomical factors undesirable for	of interradicular sites of maxillary
359, 361–363	mini-implants 422, 424–428	buccal region 146, 148-149
for interradicular sites of maxillary	biomechanical	of mandibular symphysis in
buccal region	advantages 422, 428-430	mandibular labial
en masse anterior retraction 164,	orthopaedic treatment for skeletal	region 322, 323
166, 167, 168, 169, 170, 171,	discrepancy 420,	of maxillary labial region 98-99
172–173, 174	421–422, 423	of maxillary palatal region 238–240
molar intrusion 170,	sagittal dimension 11-12, 13-14	of maxillary tuberosity 226, 227
171, 177–180	transverse dimension 16, 18, 19	cost, as a disadvantage of insertion
molar protraction 168,	vertical dimension 12,	guides 449
170, 175–176	15–16, 17–18	crest shape, as a hard tissue factor in
occlusal canting 171, 174,	clinical manifestations	infrazygomatic crest
180–183, 184	of root contact 488–499	(IZC) 187–188
for interradicular sites of maxillary	of soft tissue complications	
labial region	about 516	d
correction of gummy smile 118,	soft tissue hyperplasia 516, 518	debridement, local 528
121–122, 123–124	soft tissue infection 517, 519	density, bone
correction of occlusal	soft tissue lesion 517, 519	about 33, 35–36
canting 122, 125, 126,	soft tissue swelling 516, 517	as a hard tissue factor in interradicular
127, 128	clinical procedures	sites of maxillary buccal
incisor intrusion 114, 115,	for inserting mini-implants	region 146, 147
117–118, 119–120	insertion of mini-implants 86,	as a hard tissue factor of maxillary
for interradicular sites of maxillary	87–89, 91	tuberosity 225, 226
palatal region	post-insertion	dental models, digitalization of 451,
anterior retraction 252–269	examination 90, 91–92	452, 453
molar distalisation 257, 259,	preinsertion	dental roots
261–262, 263, 264	preparation 85–86, 87	as a general principle 56, 57–59, 60
molar intrusion 257, 260–261	for insertion guides	as a hard tissue factor in
molar protraction 263, 265–269	anaesthesia 476, 477	infrazygomatic crest
for paramedian sites	detaching screwdrivers 479	(IZC) 192–193

depth, bone	efficiency, as an advantage of insertion	insertion site-associated
about 33, 35, 37, 38–39	guides 446, 448-449	factors 507-508
as a hard tissue factor	en masse anterior retraction, for	operator-associated
of buccal shelf of mandibular	interradicular sites 164, 166,	factors 504-505
buccal region 364, 369, 370	167, 168, 169, 170, 171,	
of infrazygomatic crest	172–173, 174	g
(IZC) 188, 190, 191, 192	evolution	gender, as a basic condition 26, 27
of interradicular sites of	of insertion guides	general principles, of anatomy-driven
mandibular labial	concept of guided surgery 437,	paradigm
region 307, 308-310	438, 439, 440	about 56, 57
of interradicular sites of maxillar	for mini-implants 439, 440–445	dental roots 56, 57–59, 60
labial region 99-100, 101	of orthodontic temporary anchorage	maxillary sinus 60, 62–63
of interradicular sites of maxillary	devices 1–2, 3	nasal cavity 60, 64
buccal region 149–151	extra-alveolar bone 33, 34	neurovascular bundles 59,
of mandibular symphysis in	extrusion, in vertical dimension	60, 61–62
mandibular labial	16, 18	geometry, as a risk factor for failure
region 322, 323	10, 10	of orthodontic temporary
of maxillary palatal	f	anchorage devices
region 240–241, 242	failure, of orthodontic temporary	541, 542
of midpalatal suture 297–298	anchorage devices	gingiva, attached, as a soft tissue factor
design, as a risk factor for failure of	about 533, 534, 544, 545	of interradicular sites of
orthodontic temporary	management of 544	mandibular labial
anchorage devices 541, 542	prevention of 543	region 307, 311, 312
diabetes, as a systemic disease 28, 29	primary stability 534–536	glucocorticoids 30, 31
digital models	risk factors	guide cylinders
creating for guide cylinders	implant-associated 541–542	combining with guide plate 461
457, 459	operator-associated 538–541	creating digital models for 457, 459
creating for mini-implants 457, 459	patient-associated 537–538	generating 461, 464
creating for screwdrivers 457, 459	secondary stability 534–536	guide plates
dimension, bone, as a hard tissue factor	force loading, for mini-	combining with guide cylinder 461
of maxillary	implants 523, 524	determining area of, on digital dental
•	fractures, of orthodontic temporary	model 461
tuberosity 226–227, 228		
direct anchorage, indirect anchorage	anchorage devices about 501–503, 512	generating 461 guided surgery, evolution of insertion
versus 8–9		
distalisation, molar	management of mini-implant	guides for 437, 438,
as a clinical application with	fracture	439, 440
infrazygomatic crest 201,	clinical decisions in different	gummy smile, correction of 118,
202, 203–208, 209, 210–212,	clinical scenarios 511	121–122, 123–124
213–214, 215	clinical techniques for removing	h
for interradicular sites 257, 259,	fractured mini-	
261–262, 263, 264	implants 511, 512	habits 30, 31–32
for paramedian sites 280–282, 284	prevention of mini-implant fracture	hard tissue
in sagittal dimension 11–12, 13–15	appropriate insertion techniques	about 32–33
drainage, local 528	508, 510	alveolar bone and extra-alveolar
drilling methods 5, 6	judicious selection of appropriate	bone 33, 34
drugs	mini-implants 508, 510	bone density 33, 35–36
bisphosphonates 28, 29–30	prudent selection of insertion	bone depth 33, 35, 37, 38–39
glucocorticoids 30, 31	sites 508, 509	bone width 37, 38, 39, 40–42
	risk factors for mini-implant fracture	cortical thickness 37, 39, 42
e	about 504	mandibular ramus 389,
ease of insertion, as an advantage of	implant-associated	391, 392–393
insertion guides 446, 449	factors 505-507	selection of optimal sites 39, 43

hard tissue factor	for paramedian sites	hard tissue factor: cortical
for buccal shelf of mandibular	bone depth 271, 272	thickness 188, 189
buccal region	cortical thickness 270-271	hard tissue factor: crest
bone depth 364, 369, 370	hyperplasia, soft tissue 516, 518	shape 187–188
cortical thickness 364, 367–368	hypertrophic soft tissue,	hard tissue factor: dental
plateau features 364, 366–367	excision of 530	roots 192–193
for infrazygomatic crest (IZC)		soft tissue factor: maxillary
bone depth 188, 190, 191, 192	i	sinus 194, 195
cortical thickness 188, 189	image superimposition 451, 455–457	soft tissue factor: soft tissue
crest shape 187-188	implant-associated risk factors	type 192, 194
dental roots 192–193	of failure of orthodontic temporary	biomechanical considerations 194,
for interradicular sites of mandibular	anchorage devices	195, 196
buccal region	about 541, 542	clinical applications
bone depth 336, 338	design 541, 542	anterior intrusion 208, 209, 217
bone width 336, 339–340	geometry 541, 542	molar distalisation 201, 202,
cortical thickness 335–336	shape 541, 542, 543	203–208, 209, 210–212,
shape of cortical plate 336, 340	surface topology 543	213–214, 215
for interradicular sites of mandibular	of fractures of orthodontic	molar intrusion 209, 213,
labial region	temporary anchorage	218, 219–221
bone depth 307, 308–310	devices 505–507	orthodontic traction of impacted
bone width 307, 310–311	incisor intrusion	teeth 214, 218, 222–223
cortical thickness 305, 306–307	biomechanics-driven	insertion techniques
root prominence 307, 311	paradigm 79, 80–81	insertion recentiques 197–201,
for interradicular sites of maxillary	in maxillary labial region 114, 115,	202, 203
buccal region	117–118, 119–120	preinsertion 196, 197
bone density 146, 147	in vertical dimension 16, 17	selection of appropriate insertion
bone depth 149–151	inclination of cortical plate, as a hard	sites 196, 197
bone width 151, 153, 152–154	tissue factor of maxillary	
buccal exostosis 153, 154–155	palatal region 244, 245	initial procedures, for mandibular
	indications, clinical	ramus 397, 398 insertion
cortical thickness 146, 148–149	about 9–10	for buccal shelf of mandibular
for interradicular sites of maxillary		
labial region	mini-plates about 418	buccal region 160–164,
bone depth 99–100, 100, 101	anatomical factors undesirable for	165, 166
bone width 100–102, 102, 103,		for interradicular sites of mandibular
104, 105	mini-implants 422, 424–428	buccal region 345–350
cortical thickness 98–99	biomechanical	for mandibular ramus
root prominence 103, 106	advantages 422, 428–430	biomechanical analysis 401, 402
for mandibular symphysis	orthopaedic treatment for skeletal	clinical procedures 399–401, 402
bone depth 322, 323	discrepancy 420,	initial procedures 397, 398
cortical thickness 321, 322	421–422, 423	insertion on skulls 397, 398
for maxillary palatal region	sagittal dimension 11–12, 13–14	for paramedian sites 160–164,
bone depth 240–241, 241, 242	transverse dimension 16, 18, 19	165, 166
bone width 241, 243, 243, 244	vertical dimension 12,	insertion angle, as a risk factor of
cortical thickness 238–240,	15–16, 17–18	failure of orthodontic
239–240	indirect anchorage, direct anchorage	temporary anchorage
inclination of cortical plate	versus 8–9	devices 539, 540, 541
244, 245	infection, soft tissue 517, 519	insertion angulation
for maxillary tuberosity	infrazygomatic crest (IZC)	meticulous design of 496, 497
bone density 225, 226	anatomical characteristics	as a risk factor 496–498
bone dimension 226–227, 228	about 183, 185–186	insertion depth, as a risk factor of failure
cortical thickness 226, 227	hard tissue factor: bone	of orthodontic temporary
for midpalatal suture 297-298	depth 188, 190, 191, 192	anchorage devices 539, 540

insertion guides	determining area of guide plate on	insertion site-associated risk
about 437	digital dental model 461	factors 507-508
advantages of	establishing digital data of	insertion sites
accuracy and	mini-implants and	for anterior nasal spine 132, 134
precision 446, 447-448	screwdrivers 457	for buccal shelf in mandibular
ease of insertion 446, 449	generating guide cylinder	buccal region 371-372
efficiency 446, 448-449	461, 464	for interradicular sites of maxillary
clinical procedures	generating guide plate 461	labial region
anaesthesia 476, 477	reconstructing three-dimensional	about 107
detaching screwdrivers 479	dentition model 451, 452,	U1-U1 site 107-110, 111-112
inserting mini-	453, 454, 455, 456, 457	U1-U2 site 110, 112-114,
implants 476, 477-478	virtual placement of mini-	115, 116
removing insertion guides 479	implants 459, 460, 461, 462	U2-U3 site 110, 112-114,
verifying fit of insertion	verifying fit of 473–475	115, 116
guides 473–475	insertion height, as a risk factor 494,	for mandibular buccal
disadvantages	539, 540	region 343, 344
cost 449	insertion on skulls, mandibular ramus	for mandibular ramus 394–395, 396
no change during	and 397, 398	for mini-implants 459, 461, 462
insertion 449–450	insertion principles	prudent selection of 496, 497,
time needed for CAD-CAM 449	about 55, 56	507, 508
evolution of	anatomy-driven paradigm	as a risk factor 493
concept of guided surgery 437,	about 56	selecting for prevention of soft tissue
438, 439, 440	available anatomical sites 64-74	complications 525, 526
for mini-implants 439, 440–445	general principles 56-64	insertion techniques
manufacturing insertion guides	biomechanics-driven paradigm	for anterior nasal
adding supporting components for	about 75, 76, 77	spine 134–136, 137
insertion guide 464, 465	incisor intrusion 79, 80-81	appropriate 497, 498, 508, 510
examples of insertion guides for	maxillary molar	for buccal shelf of mandibular
different anatomical	uprighting 76, 77, 78	buccal region
sites 466, 468–470	molar intrusion 77, 79, 80	insertion 160-164, 165, 166
exporting STL file 464	molar protraction 82, 84, 85	postinsertion 373, 377
generating actual insertion guide	orthodontic traction of impacted	preinsertion 372
through 3-D printing 464, 466	molars 79, 82, 83	for infrazygomatic crest (IZC)
polishing insertion	clinical procedures for inserting	insertion procedures 197-201,
guide 464, 467	mini-implants	202, 203
removing supporting components	insertion of mini-implants 86,	preinsertion 196, 197
for insertion guide 464, 467	87–89, 91	for interradicular sites of mandibular
try-in on dental model 464, 467	post-insertion	buccal region 345-350
placement of mini-implants with	examination 90, 91–92	insertion 345–350
insertion guides at	preinsertion preparation 85-86, 87	postinsertion 350
different sites	insertion requirements	preinsertion 345
buccal interradicular	about 25, 26, 51	for interradicular sites of mandibular
region 480–481, 482	local requirements	labial region 313–320
buccal shelf 481, 483, 484	about 32	for interradicular sites of maxillary
labial interradicular region 479	hard tissue 32-40, 41-43	labial region
palatal region 480, 483	soft tissue 40, 43–45, 46	about 107
removing 479	systemic requirements	insertion procedures 160-164,
three-dimensional design of, for	about 26, 27	165, 166
mini-implants	basic conditions 26, 27	preinsertion 160
about 451, 461, 463	drugs 28–30, 31	U1-U1 site 107-110, 111-112
combining guide plate and guide	habits 30, 31–32	U1-U2 site 110, 112–114, 115, 116
cylinder 461	systemic diseases 28, 29	U2-U3 site 110, 112–114, 115, 116

insertion techniques (cont'd)	in maxillary labial region 350–363	in vertical dimension 16, 17
for mandibular symphysis 325–330	molar intrusion 170,	molar
for maxillary tuberosity	171, 177–180	biomechanics-driven
insertion procedures 229-230, 231	molar protraction 168,	paradigm 77, 79, 80
postinsertion 230	170, 175–176	as a clinical application with
preinsertion 229	occlusal canting 171, 174,	infrazygomatic crest 209,
for mini-plates 431–433	180-183, 184	213, 218, 219-221
for paramedian sites	insertion techniques	for interradicular sites of
insertion 160–164, 165, 166	insertion procedure 160–164,	mandibular buccal
postinsertion 279	165, 166	region 354, 358,
preinsertion 273, 275, 276	in maxillary labial	359, 360–361
for prevention of soft tissue	region 107–114, 115, 116	for interradicular sites of maxillary
complications 525, 526, 527	preinsertion 160	buccal region 170,
interradicular sites	mandibular buccal region	171, 177–180
anatomical characteristics for	anatomical	for interradicular sites of
maxillary labial region	characteristics 335–342	maxillary palatal
about 95, 98	biomechanical	region 257, 260–261
hard tissue factor: bone	considerations 343, 344	for paramedian sites 293, 295
depth 99-100, 101	clinical applications 350–363	in vertical dimension 12, 15,
hard tissue factor: bone	insertion techniques 345–350	16, 17–18
width 100-102, 103, 104, 105	selection of appropriate insertion	IZC (infrazygomatic crest)
hard tissue factor: cortical	sites 343, 344	anatomical characteristics
thickness 98–99	mandibular labial region	about 183, 185–186
hard tissue factor: root	anatomical	hard tissue factor: bone
prominence 103, 106	characteristics 305–311, 312	depth 188, 190, 191, 192
soft tissue factor: labial	biomechanical perspectives 311,	hard tissue factor: cortical
frenum 103, 106	312, 313	thickness 188, 189
soft tissue factor: mucogingival	determining optimal sites 312,	hard tissue factor: crest
junction 103, 106	313, 314	shape 187–188
anatomical characteristics of	insertion techniques 313–320	hard tissue factor: dental
maxillary buccal region	maxillary palatal region	roots 192–193
about 145, 147	anatomical	soft tissue factor: maxillary
hard tissue factor: bone	characteristics 238–248	sinus 194, 195
density 146, 147	biomechanical considerations 248	soft tissue factor: soft tissue
hard tissue factor: bone	clinical applications 252–269	type 192, 194
depth 149–151	insertion	biomechanical considerations 194,
hard tissue factor: bone	techniques 248, 249–251	195, 196
width 151, 152–154	selection of appropriate insertion	clinical applications
hard tissue factor: buccal	sites 248, 249	anterior intrusion 208, 209, 217
exostosis 153, 154–155	selection of appropriate insertion	molar distalisation 201, 202,
hard tissue factor: cortical	sites 107, 158–160	203–208, 209, 210–212,
thickness 146, 148–149	interradicular space, limited, as a risk	213–214, 215
soft tissue factor: buccal	factor 493, 494	molar intrusion 209, 213,
frenum 156, 157	intrusion	218, 219–221
soft tissue factor: soft tissue	anterior, as a clinical application	orthodontic traction of impacted
type 154–156	with infrazygomatic	teeth 214, 218, 222–223
biomechanical considerations 103,	crest 208, 209, 216–217	insertion techniques
107, 156, 157, 158	incisor	insertion procedures 197–201,
clinical applications	biomechanics-driven	202, 203
en masse anterior retraction 164,	paradigm 79, 80–81	preinsertion 196, 197
166, 167, 168, 169, 170, 171,	in maxillary labial region 114,	selection of appropriate insertion
172–173, 174	115, 117–118, 119–120	sites 196, 197

j	anatomical	traction of lingually angulated
jaw model, acquisition of 451,	characteristics 335–342	impacted mandibular second
453–454	biomechanical	molar 405, 407, 408–409
100 10 1	considerations 343, 344	traction of mandibular third molar
l	clinical applications 350–363	away from inferior alveolar
labial frenum	insertion techniques 345–350	canal 409, 410–412
as a soft tissue factor of interradicular	selection of appropriate insertion	uprighting mesioangulated
sites of mandibular labial	sites 343, 344	impacted mandibular second
region 307, 311	mandibular dentition distalisation, as a	molars 402-405
as a soft tissue factor of	clinical application for buccal	mandibular symphysis, in mandibular
interradicular sites of	shelf in mandibular buccal	labial region
maxillary labial	region 376, 377-386	about 320, 321
region 103, 106	mandibular labial region	anatomical features 320, 321-323,
labial interradicular region, placement	about 303–304	324, 325
of mini-implants with	interradicular sites	biomechanical
insertion guides in 479	anatomical	considerations 323, 325
lesion, soft tissue 517, 519	characteristics 305-311, 312	insertion techniques 325-330
lingually angulated impacted	biomechanical perspectives 311,	selection of optimal sites 325
mandibular second molars,	312, 313	mandibular third molars away from
traction of 405, 407–409	determining optimal sites 312,	inferior alveolar canal,
loading time, as a risk factor of	313, 314	traction of 409, 410–412
failure of orthodontic	insertion	manifestations, clinical
temporary anchorage	techniques 313, 315-320	of root contact 488, 489
devices 540–541	mandibular symphysis	soft tissue complications
local factors, as risk factors of failure of	about 320, 321	about 516
orthodontic temporary	anatomical features 320,	soft tissue hyperplasia 516, 518
anchorage devices 537–538	321-323, 324-325	soft tissue infection 517, 519
local requirements	biomechanical	soft tissue lesion 517, 519
about 32	considerations 323, 325	soft tissue swelling 516, 517
hard tissue 32–40, 41–43	insertion techniques 325-330	manufacturing insertion guides
soft tissue 40, 43–45, 46	selection of optimal sites 325	adding supporting components for
	mandibular ramus	insertion guide 464, 465
m	about 389, 390, 413	examples of insertion guides for
management	anatomical considerations	different anatomical
of failure of orthodontic temporary	anatomical location 389,	sites 466, 468–470
anchorage devices 544-545	390, 391	exporting STL file 464
of root contact 498	hard tissue considerations 389,	generating actual insertion guide
mandible, as an available anatomical	391, 392, 393	through 3-D
site 68, 71–74	optimal insertion	printing 464, 466
mandibular buccal region	sites 394, 395–396	polishing insertion guide 464, 467
about 333, 334–335, 386	soft tissue considerations 391,	removing supporting components
buccal shelf	394, 395	for insertion guide 464, 467
anatomical characteristics	insertion procedure	try-in on dental model 464, 467
364–369, 370–371	biomechanical analysis 401, 402	materials
biomechanical	clinical procedures 399–401, 402	as a factor associated with mini-
considerations 369, 372	insertion procedures 397, 398	implants 523, 524
clinical applications 376, 377–386	insertion on skulls 397, 399	for orthodontic temporary anchorage
insertion	mini-implant selection 396-397	devices 2
techniques 372-376, 377	versatile clinical applications	maxillary arch expansion
selection of appropriate insertion	orthodontic traction of vertically	as an available anatomical site 64,
sites 371, 372	impacted mandibular second	66–68, 69–71
interradicular sites	molars 405, 406, 407	in transverse dimension 16, 18

maxillary buccal region	insertion techniques 107-114,	biomechanical considerations 228
about 145, 146, 147, 232	115, 116	clinical applications 230, 231–232
infrazygomatic crest (IZC)	selection of appropriate insertion	insertion techniques
anatomical characteristics 183,	sites 107	insertion procedures 229–230, 231
185–194, 195	maxillary molar uprighting, in	postinsertion 230
biomechanical	biomechanics-driven	preinsertion 229
considerations 194, 195, 196	paradigm 76, 77, 78	selection of appropriate insertion
clinical applications 201, 202,	maxillary palatal region	sites 229
203, 204–223	about 235-237, 301	mechanical retention
insertion techniques 196,	interradicular sites	about 5, 6, 7
197–201, 202, 203	anatomical	direct versus indirect
selection of appropriate insertion	characteristics 238-248	anchorage 8–9
sites 196, 197	biomechanical	primary stability 7–8
interradicular sites	considerations 248	secondary stability 7–8
anatomical characteristics	clinical applications 252-269	mesioangulated impacted mandibular
145–146, 147, 148–156, 157	insertion techniques 248,	second molars,
biomechanical	249, 250–251	uprighting 402–405
considerations 156, 157, 158	selection of appropriate insertion	midpalatal suture, in maxillary
clinical applications 164, 166,	sites 248, 249	palatal region
167–183, 184, 185	midpalatal suture	about 296–297
insertion techniques 160-164,	about 296–297	anatomical features 297–298
165, 166	anatomical features 297–298	clinical applications 299, 300
selection of appropriate insertion	clinical applications 299, 300	insertion techniques 299, 300
sites 158–160	insertion techniques 299, 300	optimal insertion sites 298, 299
maxillary tuberosity	optimal insertion sites 298, 299	mini-implant-assisted skeletal
anatomical	paramedian sites	expansion, for paramedian
characteristics 223–228	anatomical	sites 286, 288–289
biomechanical	characteristics 270–273, 274	mini-implants
considerations 228	biomechanical	about 4–5
clinical applications 230,	considerations 273, 274, 275	anatomical factors undesirable
231, 232	clinical applications 280–295	for 422, 425–428
insertion techniques 229–230, 231	insertion techniques 273, 275–279	creating digital models for 457, 459
selection of appropriate insertion	selection of optimal insertion	establishing digital data of 457, 459
sites 229	sites 273, 275	evolution of insertion guides for
maxillary labial region	maxillary sinus	mini-implants 439, 440–445
about 95, 96–98, 143	as a general principle 60, 62, 63	factors associated with 523, 524
anterior nasal spine (ANS)	as a soft tissue factor in infrazygomatic	inserting 85–92, 476, 477–479
anatomical features 125, 127,	crest (IZC) 194	judicious selection of
129–132, 133	maxillary tuberosity	appropriate 508, 510
biomechanical considerations	about 223–225	management of fractures in
132, 133	anatomical characteristics	clinical decisions in different
clinical applications 136, 138–143	about 223–225	clinical scenarios 511
insertion techniques 134–136, 137	hard tissue factor: bone	clinical techniques for removing
selection of appropriate insertion	density 225–226	fractured mini-
sites 132, 134	hard tissue factor: bone	implants 511, 512
interradicular sites	dimension 226, 227, 228	placement of, with insertion guides
anatomical features 95,	hard tissue factor: cortical	at different sites
98–103, 104–106	thickness 226, 227	buccal interradicular region 480,
biomechanical	soft tissue factor: soft tissue	481, 482
considerations 103, 107	thickness 228	buccal shelf 481, 483–484
clinical applications 114, 115,	soft tissue factor: types of soft	labial interradicular region 479
117–125, 126, 127, 128	tissue 228	palatal region 480, 483
		·

position of 522–523, 524	biomechanical advantages 422,	mucogingival junction, as a soft tissue
post-insertion examination of 90,	428-430	factor 103, 106
91, 92	orthopaedic treatment for skeletal	
preinsertion preparation for	discrepancy 420-422, 423	n
85–86, 87	insertion techniques 431–433	nasal cavity, as a general principle
prevention of fractures in	removal techniques 433-434	60, 64
appropriate insertion	model post-processing 457, 458–459	neurovascular bundles, as a general
techniques 508, 510	molar anchorage reinforcement, for	principle 59, 60, 61–62
judicious selection of appropriate	paramedian sites 280,	no change during insertion, as a
mini-implants 508, 510	284–286, 287, 288	disadvantage of insertion
prudent selection of insertion	molar distalisation	guides 449, 450
sites 508, 509	as a clinical application with	
prognosis of 490-491	infrazygomatic crest 201,	0
risk factors for fractures in	202, 203, 204–223	occlusal canting
about 504	for interradicular sites 257, 259,	correction of 122, 125, 126, 127, 128
implant-associated factors	261–263, 264, 265	for interradicular sites 171–173,
505–507	for paramedian sites 280, 281, 282,	188-204
insertion site-associated factors	283, 284	operator-associated risk factors
507–508	in sagittal dimension 11, 12, 13	failure of orthodontic temporary
operator-associated factors	molar intrusion	anchorage devices
504–505	biomechanics-driven	about 538, 539
selecting 396–397	paradigm 77, 79, 80	biocortical versus monocortical
three-dimensional design and	as a clinical application with	engagement 540
manufacture of insertion	infrazygomatic crest 209,	insertion angle 539–540, 541
guides for	213, 214, 218–223	insertion depth 539, 540
combining guide plate and guide	for interradicular sites 170, 171,	insertion height 539, 540
cylinder 461	177–180, 257, 260, 261	loading time 540–541
determining area of guide plate on	for interradicular sites of mandibular	root proximity 538, 539
digital dental model 461	buccal region 354, 358, 359,	self-tapping versus
establishing digital data of	360, 361	self-drilling 540
mini-implants and	for paramedian sites 293, 295	fracture of orthodontic temporary
screwdrivers 457, 459	in vertical dimension 12, 15, 16, 17	anchorage devices
generating guide	molar protraction	504, 505–506
cylinder 461, 464	biomechanics-driven	for soft tissue
generating guide plate 461	paradigm 82, 84–85	complications 522, 523–524
reconstructing three-dimensional	for interradicular sites 168, 170,	optimal sites
dentition model 451–457,	175–176, 263, 265–269	determining for interradicular sites
458, 459	for interradicular sites of mandibular	of mandibular labial
virtual placement of mini-	buccal region 353,	region 312–313, 314
implants 459, 460–461, 462	354, 355–358	for mandibular symphysis 323, 325
mini-plates	in sagittal dimension 11, 12, 13, 14	selection of 37, 43, 45–50
about 5, 6, 415, 416, 434	molar uprighting	oral hygiene care
clinical features	as a clinical application for buccal	as a habit 31
available anatomical sites	shelf in mandibular buccal	for prevention of soft tissue
418–420	region 379, 381–384	complications 525, 526
advantages and disadvantages	for interradicular sites of mandibular	orthodontic temporary anchorage
417–418	buccal region 358,	devices (TADs)
structure 415, 416–417	359, 361–363	about 1, 21
clinical indications	monocortical engagement, biocortical	characteristics of
about 420	engagement <i>versus</i> 540	drilling methods 5, 6
anatomical factors undesirable for	morphology, of orthodontic temporary	materials 2
mini-implants 422, 425–428	anchorage devices 4–5, 6	morphology 2–5
IIIpiaiio 722, 723 720		

orthodontic temporary anchorage	p	mini-implant-assisted skeletal
devices (TADs) (cont'd)	palatal region, placement of mini-	expansion 286, 288-289
clinical indications for	implants with insertion	molar anchorage
about 9–11	guides in 480, 483	reinforcement 280, 286–287
sagittal dimension 9,	paradigms	molar distilisation 280, 281-282,
11–12, 13–15	anatomy-driven	283, 284
transverse dimension 14–19	about 55	molar intrusion 293, 295
vertical dimension 15, 16–18	available anatomical sites	traction of impacted teeth 289–294
evolution of 1–3	about 62, 64	patient-associated risk factors
failure of	mandible 66, 71–73	failure of orthodontic temporary
about 534, 535, 546	maxilla 64–66, 67–68, 69–71	anchorage devices
management of 544	general principles	about 537
prevention of 543	about 55, 56	local factors 537–538
primary stability 534–536, 537	dental roots 56–59	systemic factors 537
risk factors 537–541, 542, 543	maxillary sinus 60, 62, 63	for soft tissue complications 517,
secondary stability 534–536, 537	nasal cavity 62, 64	519, 520, 521–522
fractures of	neurovascular bundle	peri-implant irrigation and scaling
about 501, 502, 503, 512	59–60, 61	528, 529
management of mini-implant	biomechanics-driven	periodontal tissues, dental roots and
fracture 511, 512	about 75, 75–76, 77	491–492, 496, 497
prevention of mini-implant	incisor intrusion 79, 80–81	plateau features, as a hard tissue factor
fracture 508, 509, 510	maxillary molar	of buccal shelf of mandibular
risk factors for mini-implant	uprighting 76–77, 78	buccal region 364, 366–367
fracture 504, 505,	molar intrusion 77, 79, 80	polishing insertion guides 464, 467
505–507, 508	molar protraction 82, 84, 85	postinsertion
mechanical retention of	orthodontic traction of impacted	for buccal shelf of mandibular
about 5, 7	molars 82, 83	buccal region 376, 377
direct versus indirect	paramedian sites	for interradicular sites of mandibular
anchorage 6, 8–9	insertion techniques	buccal region 350
primary stability 5–6, 8	insertion 271, 276, 277, 278	for paramedian sites 279
secondary stability 5–6, 8	postinsertion 279	precision, as an advantage of insertion
potential complications 19–21	-	guides 446, 447–448
orthodontic traction	preinsertion 273, 275, 276	preinsertion
of impacted molars in	maxillary palatal region	for buccal shelf of mandibular
biomechanics-driven	about 270	buccal region 372
paradigm 82, 83	anatomical characteristics 270,	for interradicular sites of mandibular
of impacted teeth	271, 270–274	buccal region 345
as a clinical application for	biomechanical considerations	for mandibular ramus 397, 401
buccal shelf in mandibular	273, 274–275	for paramedian sites 273, 275, 276
buccal region 214–215,	clinical applications 280, 300,	prevention
384–386	280–293, 295–297	of failure of orthodontic temporary
as a clinical application with	hard tissue factor: bone	anchorage devices 543–544
infrazygomatic crest 214,	depth 270, 271, 276, 277	root contact
216, 222–223	hard tissue factor: cortical	appropriate anaesthesia and
of vertically impacted mandibular	thickness 270, 271	insertion technique 497, 498
second molars 405,	insertion techniques 271, 273,	meticulous design of insertion
	275, 277, 278, 279	_
405, 406–407	selection of optimal insertion	angulation 496, 497
orthopaedic treatment, for skeletal	sites 273, 275	prudent selection of insertion sites 496, 497
discrepancy 420–421,	soft tissue factor: soft tissue	
423, 424	thickness 272	soft tissue complications
osteoporosis, as a systemic	vital anatomical	meticulous oral hygiene care
disease 28	structures 272, 273–274	525, 526

prevention of excessive soft tissue	risk factors	management of 498
trauma 526–527	root contact	prevention
prudent selection of insertion	insertion angulation 495, 496	appropriate anaesthesia and
sites 525, 526	insertion height 494	insertion technique 497, 498
sophisticated insertion techniques	insertion site 493	meticulous design of insertion
525–526	limited interradicular space	angulation 496–497
primary stability 5–6, 8, 534–536, 537	493–494	prudent selection of insertion
procedures, clinical	soft tissue complications	sites 496, 497
for inserting mini-implants	factors associated with	prognosis
insertion of mini-implants 86–90	mini-implants 523–524	mini-implants 490–491
post-insertion examination	operator factors 522–523, 522,	periodontal tissues and dental
90, 91	523, 524	roots 491, 492
preinsertion preparation 85–86, 87	patient factors 520–521, 521, 522	risk factors
for insertion guides	risk factors, implant-associated	insertion angulation 495, 496
anaesthesia 476, 477	of failure of orthodontic temporary	insertion height 494
detaching screwdrivers 479	anchorage devices	insertion site 493
inserting mini-implants 476,	about 541, 542	limited interradicular space
477, 478–479	design 541, 542	493–494
removing insertion guides 479	geometry 541, 542	root prominence
verifying fit of insertion	shape 541, 542, 543	as a hard tissue factor of interradicular
guides 473–474, 475	surface topology 543	sites in maxillary labial
mandibular ramus	of fractures of orthodontic	region 103, 106
insertion 397, 399, 402, 403	temporary anchorage	as a hard tissue factor of
postinsertion 401	devices 505–506, 506–507	interradicular sites of
preinsertion preparation 399	risk factors, operator-associated	mandibular labial
for removing fractured	of failure of orthodontic temporary	region 307, 311
mini-implants 511, 512	anchorage devices	root proximity, as a risk factor of failure
prognosis, of root contact	about 538, 539	of orthodontic temporary
mini-implants 490, 491	biocortical versus monocortical	anchorage devices 538, 539
periodontal tissues and dental	engagement 540	anchorage devices 330, 337
roots 491–492, 495, 496	insertion angle 539–540, 541	S
protraction, molar	insertion depth 539, 540	sagittal dimension, of orthodontic
biomechanics-driven paradigm 82,	insertion height 539, 540	temporary anchorage
84, 85	loading time 540–541	devices 11–12, 13–15
for interradicular sites 168–169,	root proximity 538, 539	screwdrivers
175, 176, 252, 253, 275–279	self-tapping versus	creating digital models for 457, 459
for interradicular sites of mandibular	self-drilling 540	detaching 479
buccal region 354,	fracture of orthodontic temporary	establishing digital data of 457, 459
356, 378–382	anchorage devices 504, 505	secondary stability 7, 8, 534–535,
in sagittal dimension 12, 13–14	for soft tissue complications 522,	535–536
in sagittal difficusion 12, 13–14	523, 524	self-drilling drilling method
r	risk factors, patient-associated	about 5, 6
removal techniques, for mini-plates	of failure of orthodontic temporary	self-tapping versus 540
433, 434	anchorage devices	self-tapping drilling method
retraction, anterior	about 537	about 5, 6
as a clinical application for	local factors 537–538	self-drilling versus 540
interradicular sites 252–253,	systemic factors 537, 538	shape, as a risk factor for failure of
254, 255, 256–257	for soft tissue complications	orthodontic temporary
for interradicular sites of mandibular	520–521, 522	anchorage devices 541,
buccal region 350–351,	root contact	542, 543
352–353, 354	about 487–488, 488, 499	skeletal discrepancy, orthopaedic
in sagittal dimension 11	clinical manifestations 488, 489	treatment for 420–422, 423
III DUCIUMI MIIIIVIIDIVII II	CHIRCAL HAIHLORALUMA 400, 407	11 CHILICITE IO 1 TAUT TAVE 47.1

skeletal orthopaedics, in sagittal	for interradicular sites of mandibular	stainless steel 2
dimension 12, 15	buccal region	STL file, exporting 464
smoking	buccal frenum 341, 342	structure, of mini-plates 415, 416-417
as a habit 30, 31, 32	soft tissue types 340–341	surface properties, as a factor
as a risk factor for soft tissue	for interradicular sites of mandibular	associated with
complications 521	labial region	mini-implants 523-524
soft tissue	attached gingiva 307, 311, 312	surface topology, as a risk factor for
about 40, 43	labial frenum 307, 311	failure of orthodontic
mandibular ramus 391, 394, 395	for interradicular sites of maxillary	temporary anchorage
selection of optimal sites 45-50	buccal region	devices 543
thickness of 40, 45, 46	buccal frenum 156, 157	swelling, soft tissue 516, 517
types of 40, 44	soft tissue type 154–156	systemic diseases
soft tissue complications	for interradicular sites of maxillary	diabetes 28, 29
about 515, 516, 530	labial region	osteoporosis 28
adverse consequences 519, 520	labial frenum 103, 106	systemic factors, as risk factors of
clinical manifestations	mucogingival junction 103, 106	failure of orthodontic
about 516, 517	for mandibular	temporary anchorage
soft tissue hyperplasia 516, 518	symphysis 323, 324–325	devices 537, 538
soft tissue infection 517, 519	for maxillary palatal region	systemic requirements
soft tissue lesion 517, 519	soft tissue thickness 246, 247	about 26, 27
soft tissue swelling 516, 517	soft tissue type 246	basic conditions
prevention	for maxillary tuberosity	age 26, 27
meticulous oral hygiene	soft tissue thickness 228	gender 26, 27
care 525	types of soft tissue 228	drugs
prevention of excessive soft tissue	for midpalatal suture 298	bisphosphonates 28–29, 30
trauma 526, 528	for paramedian sites 271–272	glucocorticoids 30, 31
prudent selection of insertion	soft tissue hyperplasia 516, 518	habits 31
sites 525, 526	soft tissue infection 517, 519	systemic diseases
sophisticated insertion	soft tissue lesion 517, 519	diabetes 28, 29
techniques 525–526, 527	soft tissue swelling 516, 517	osteoporosis 28
risk factors	soft tissue thickness	1
factors associated with	about 40, 45, 46	t
mini-implants 523-524	as a soft tissue factor for midpalatal	TADs (temporary anchorage devices)
operator factors 522, 523, 524	suture 298	about 1, 21
patient factors 520–521, 522	as a soft tissue factor of buccal shelf	characteristics of
treatment	of mandibular buccal	drilling methods 5, 6
excision of hypertrophic soft	region 369, 371	materials 2
tissue 530	as a soft tissue factor of maxillary	morphology 4-5, 6
local debridement and	palatal region 246, 247	clinical indications for
drainage 528	as a soft tissue factor of maxillary	about 9, 10
peri-implant irrigation and	tuberosity 228	sagittal dimension 11–12, 13–15
scaling 528, 529	soft tissue type	transverse dimension 16, 18–19
removal of causative	as a soft tissue factor in infrazygomatic	vertical dimension 12, 15–18
factors 528, 529	crest (IZC) 192, 194	evolution of 1-2, 3
soft tissue factor	as a soft tissue factor in interradicular	failure of
for buccal shelf of mandibular	sites of maxillary buccal	about 533, 534, 546
buccal region	region 154–156	management of 544, 545
soft tissue thickness 369, 371	as a soft tissue factor of buccal shelf	prevention of 543–544
soft tissue type 369, 371	of mandibular buccal	primary stability 534–536
for infrazygomatic crest (IZC)	region 369, 371	risk factors 537–543, 537–542
maxillary sinus 194, 195	as a soft tissue factor of maxillary	secondary stability 534-536
soft tissue type 192, 194	palatal region 246	fractures of
· · · · · · · · · · · · · · · · · ·		

about 501, 502, 503, 512	3-D (three-dimensional) design of	for interradicular sites of maxillary
management of mini-implant	insertion guides, for	labial region 95, 98–103, 98,
fracture 511, 512	mini-implants	99, 100, 101, 102, 103, 104,
prevention of mini-implant	about 451, 461, 463	105, 106
fracture 508, 509–510	combining guide plate and guide	for mandibular
risk factors for mini-implant	cylinder 461	symphysis 321–323
fracture 504–507,	determining area of guide plate on	for maxillary palatal
505-507, 508	digital dental model 461	region 238–245
mechanical retention of	establishing digital data of mini-	for maxillary
about 5, 6, 7	implants and	tuberosity 225–227, 228
direct versus indirect	screwdrivers 457, 459	for midpalatal suture 297–298
anchorage 8–9	generating guide cylinder 461, 464	for paramedian
primary stability 7, 8	generating guide plate 461	sites 270–271, 272
secondary stability 7, 8	reconstructing three-dimensional	soft
potential complications 19–21	dentition model 451, 452,	about 40, 43
temporary anchorage devices (TADs)	453, 454, 455, 456, 457,	mandibular ramus 391, 394, 395
about 1, 21	458, 459	selection of optimal sites 45–50
characteristics of	virtual placement of mini-	thickness of 40, 45, 46
drilling methods 5, 6	implants 459, 460, 461, 462	types of 40, 44
materials 2	3-D printing, generating actual	soft, complications with
morphology 4–5, 6	insertion guide	about 515, 516, 530
clinical indications for	through 464, 466	adverse consequences 519, 520
about 9, 10	time needed for CAD-CAM, as a	clinical manifestations 516–519,
sagittal dimension 11–12, 13–15	disadvantage of insertion	517–519
transverse dimension 16, 18–19	•	
vertical dimension 12, 15–18	guides 449	prevention 525–526, 525–528
	tissue	risk factors 520–524, 521–524
evolution of 1–2, 3	hard	treatment 528–530, 529–530
failure of	about 32–33	soft tissue factor
about 533, 534, 546	alveolar bone and extra-alveolar	for buccal shelf of mandibular
management of 544, 545	bone 33, 34, 35	buccal region 369, 371
prevention of 543–544	bone density 33, 35–37	for infrazygomatic crest
primary stability 534–536	bone depth 33, 34, 37, 38–39	(IZC) 192, 194, 195
risk factors 537–543	bone width 37, 38, 40–42	for interradicular sites of
secondary stability 534–536	cortical thickness 37, 39, 42	mandibular buccal
fractures of	mandibular ramus 389,	region 340–341, 342
about 501, 502, 503, 512	391, 392–393	for interradicular sites of
management of mini-implant	selection of optimal sites 39, 43	mandibular labial
fracture 511, 512	hard tissue factor	region 307, 311, 312
prevention of mini-implant	for buccal shelf of mandibular	for interradicular sites of maxillary
fracture 508, 509–510	buccal region 364,	buccal region 154–156, 157
risk factors for mini-implant	366–369, 370	for interradicular sites of maxillary
fracture 504–507, 508	for infrazygomatic crest (IZC)	labial region 103, 106
mechanical retention of	187–192, 193	for mandibular symphysis 323,
about 5, 6, 7	for interradicular sites of	324–325
direct versus indirect	mandibular buccal region	for maxillary palatal region
anchorage 8–9	335–336, 337–340	246, 247
primary stability 7, 8	for interradicular sites of	for maxillary tuberosity 228
secondary stability 7, 8	mandibular labial	for midpalatal suture 298
potential complications 19-21	region 305, 307-311	for paramedian sites 271–272
3-D (three-dimensional) dentition model,	for interradicular sites of maxillary	soft tissue thickness
reconstructing 451, 452, 453,	buccal region 146, 147,	as a soft tissue factor for
454, 455, 456, 457, 458, 459	148–153, 154, 155	midpalatal suture 298

tissue (cont'd) of vertically impacted mandibular of lingually angulated impacted as a soft tissue factor of buccal second molars 405, 406-407 mandibular second shelf of mandibular buccal transverse dimension, of orthodontic molar 405, 407-409 region 369, 371 temporary anchorage of mandibular third molar away as a soft tissue factor of maxillary devices 16, 18-19 from inferior alveolar palatal region 246, 247 treatment, of soft tissue complications canal 409, 410-412 as a soft tissue factor of maxillary uprighting mesioangulated impacted excision of hypertrophic soft tuberosity 228 tissue 530 mandibular second molars 402-405 soft tissue type local debridement and as a soft tissue factor in drainage 528 vertical dimension, of orthodontic infrazygomatic crest peri-implant irrigation and scaling temporary anchorage devices 12, 15-18 (IZC) 192, 194 528, 529 as a soft tissue factor in removal of causative factors vertically impacted mandibular second interradicular sites of maxillary 528, 529 molars, orthodontic traction try-in, for insertion guides on dental of 405, 406-407 buccal region 154-156 as a soft tissue factor of buccal model 464, 467 vital structures shelf of mandibular buccal inferior alveolar nerve and buccal shelf of mandibular buccal region 369, 371 U1-U1 site 107, 109-110, 108-110, as a soft tissue factor of maxillary region 369, 371 111, 112 palatal region 246 in interradicular sites of mandibular U1-U2 site 110, 112-114, 115, 116 titanium alloy 2 buccal region 341-342 U2-U3 site 110, 112-114, 115, 116 traction maxillary palatal region 246-248 uprighting of impacted molars in biomechanicsmidpalatal suture 298 as a clinical application for buccal driven paradigm 79, 82-83 paramedian sites 272-273 shelf in mandibular buccal vitallium 2 of impacted teeth region 379, 381-384 as a clinical application for W for interradicular sites of buccal shelf in mandibular width, bone mandibular buccal region buccal region 379, 384, about 37, 38, 40-42 358-359, 361-363 385, 386 as a hard tissue factor for mesioangulated impacted as a clinical application with mandibular second molars of interradicular sites of mandibular infrazygomatic crest 214, labial region 307, 310-311 402-405 218, 222-223 of interradicular sites of maxillary for paramedian sites buccal region 151, 153, 289-293, 294 versatile clinical applications, for 152 - 154of lingually angulated impacted mandibular ramus of interradicular sites of maxillary mandibular second molars orthodontic traction of vertically labial region 100-102, 102, 405, 407-409 impacted mandibular second 103, 104, 105 of mandibular third molars away molars 405, 406-407 of maxillary palatal region 241, from inferior alveolar traction 243, 242, 243, 244 canal 409, 410-412