Subject Index

Illustrations are comprehensively referred to from the text. Therefore, significant material in illustrations and tables have only been given a page reference in the absence of their concomitant mention in the text referring to that figure.

Abbreviations: CWD, canal wall down; CWU, canal wall up.

A

abdominal fat (packing or obliteration with) in cochlear implantation 574
in revision surgery 583
in paraganglioma 389, 447
case 429, 434, 439, 447
hints and pitfalls 448
in subtotal petrosectomy 536, 541, 548
acoustic canal, external see auditory canal, external
adhesive otitis media, ossiculoplasty 188
cases 204–214
considerations 188
aditus ad antrum 3
in CWD tympanoplasty 246, 264
in paraganglioma surgery 418, 422
air cells, mastoid (exposure/removal/exteriorization/closure)
canalplasty 78, 90
cholesteatoma of external auditory canal 120
CWD tympanoplasty 327, 337
exostosis or osteoma surgery 95
mastoidectomy 246
subtotal petrosectomy 541
ampullae of semicircular canals 3
subtotal petrosectomy 539
anatomy (temporal bone and surrounding areas) 1–18
radiological 19–33
variants 500–503
cases 506–510
anesthesia 48–51
hints and pitfalls 51
myringoplasty 185
ossiculoplasty for second-stage operation 238
stapes surgery 48, 51, 460, 511
annular ligament
paraganglioma surgery 402, 422
stapes surgery 473, 483
annulus, tympanic
anatomy 3, 4
in CWD tympanoplasty 327, 334–335, 344, 351
in modified Bondy technique 362, 372
in CWD tympanoplasty in revision surgery 321–322
in myringoplasty 122, 185, 186
problems and solutions relating to 175
in revision surgery 179, 181, 182, 183, 184
in transcanal approach 171
in ossiculoplasty 205

in paraganglioma surgery 402, 404, 413, 425
in stapes surgery 473
antrum/cavity, mastoid 3
aperture/opening see aditus ad antrum
cholesteatoma and its removal 252
case 284–291, 292, 337
in CWD tympanoplasty 336, 337
in modified Bondy technique 357
in CWD tympanoplasty 274, 292
saucerization 249, 261, 262, 323, 324
in second-stage surgery 304
in mastoidectomy 246
in meningoencephalic herniation repair 455–456
in paraganglioma surgery
saucerization 435–436
tumor reaching antrum 418, 421, 422, 431
approaches
CWU tympanoplasty, second-stage or revision surgery 301
ossiculoplasty 187–188
stapes surgery 460, 461–463
see also specific approaches
arachnoid membrane insults, CFS leakage 585
artificial biocompatible prostheses in ossiculoplasty
with fixed stapes footplate 204
hints and pitfalls 239
in revision surgery 240
with stapes superstructure absent 201
with stapes superstructure present 197
atelectatic tympanic membrane
myringoplasty 176
ossiculoplasty 185
case 189–190
considerations 188
in retroauricular approach, material for reconstruction 65
attic of tympanic cavity 2–3
CWD tympanoplasty for cholesteatoma involving, cases 260–261, 334, 343, 351, 357
in modified Bondy technique 357,
360–361, 371, 373, 374, 377
in CWD tympanoplasty for cholesteatoma involving 250
cases 298, 299, 317–318
paraganglioma involving 423, 431–432, 441
subtotal petrosectomy for recurrent cholesteatoma involving 538
atricantotomy in CWD tympanoplasty 326
atticotomy in CWD tympanoplasty, case 336
in CWU tympanoplasty 249, 250, 302, 324
case 265
in facial nerve overhanging 506
in ossiculoplasty 194, 195
case 209, 586
in paraganglioma surgery 389–399
case 423
in stapes surgery 462–463
cases 474, 483–484, 489–490
structure visible 4, 5
auditory (acoustic) canal, external 70–77
anatomy 1
narrow canal 500
approach via see transcanal approach
exostosis see exostosis
fascial grafting in retroauricular myringoplasty and the 131–132
incision and exposure 70–77
osteoma see osteoma
paraganglioma as polypoid mass in 430, 440
reconstruction see canalplasty
stenosis see stenosis
tympanoplasty and the see tympanoplasty
auricular nerve in facial nerve reconstruction, greater 586
autologous incus for reconstruction 430
cases 210, 237, 319, 320
hints and pitfalls 238

B

basal turn ossification, cochlear implantation in 575–577, 582
bimanual technique in stapes surgery 461
biocompatible prostheses in ossiculoplasty
see artificial biocompatible prostheses
bicapsular coagulation 38
meningoencephalic and dural herniation 454, 457, 458, 544–545
paragangliomas 389–390, 396
cases 399, 400, 414–415, 415–416, 420, 422, 424, 425, 431, 432, 436, 441, 443
hints and pitfalls 448
stapedial artery 502
bleeding (and its prevention/control–hemostasis) 52, 54, 585
CWD tympanoplasty 251–252, 282, 287
second-stage surgery 308, 318
drilling 52
from facial nerve sheath 4
paraganglioma surgery 389, 390, 414, 422, 423, 432, 446
hints and pitfalls 448
retroauricular myringoplasty 127, 138, 146, 159
in overlay technique 132

Sanna et al. Middle Ear and Mastoid Microsurgery. ISBN 9783131320926 © 2012 Georg Thieme Verlag/Thieme Publishers
stapes surgery 461, 470
see also specific materials used
Bondy technique, modified 354–378
bone formation, new, with cholesteatoma 454
bone graft material in ossiculoplasty 187
see also specific ossicles
bone paste
CWD tympanoplasty 330, 353
in revision surgery 384–385
CWU tympanoplasty 249, 254, 301, 324
cases 284, 290, 296, 297, 300
labyrinthine fistula 449, 451
mastoectomy 245
ossiculoplasty 219, 222
bone tumor, benign see osteoma
Brackmann type suction irrigators 38
brain tissue herniation 454
canal wall up (closed) mastoidectomy with bone tumor, benign 454
brain tissue herniation 454
canal wall up (closed) tympanoplasty 15
in CWD tympanoplasty
in CWU tympanoplasty
in modified Bondy technique 374, 375, 376
CWU tympanoplasty 254
cases 268, 290, 296, 300
meningoecephalic herniation repair 459
ossiculoplasty 187, 193, 199, 239
atelectatic ear and adhesive otitis media 188
cases 189, 219, 226–227, 230–232, 234, 242, 243, 244
in revision surgery 240, 243, 244
with stapes superstructure present 174–175, 199
stapes revision surgery 532
transcanal myringoplasty 172
see also perichondrium
cerebrospinal fluid leakage (otorrhea) 585–586
ghusher 302
subtotal petrosectomy 534, 541, 543
cholesteatoma 118
antral canal antrostomy
attic see attic
congenital, case 269–281
CWD tympanoplasty 326
cases 333–353, 356–377
in modified Bondy technique 354, 356–377, 378
CWU tympanoplasty with 252–254
attic cholesteatoma 250, 252
cases 269–301, 304–324
revision surgery see revision surgery
second-stage surgery see second-stage surgery
dural matrix involvement, subtotal petrosectomy 342, 343
external auditory canal 118
meningoecephalic herniation with 534, 547
new bone formation 454
only hearing ear 55
ossiculoplasty with 186
cases 221–225, 227–232
hints and pitfalls 238
postoperative (iatrogenic) of external auditory canal 118
following mastoidectomy 246
postoperative (iatrogenic) of middle ear following myringoplasty 179, 186
recurrent (in CWU tympanoplasty) 248, 251, 326
cases 315–325, 349–353, 537–541
hints and pitfalls 325
subtotal petrosectomy 537–541
staging strategy 56
cholesterol granuloma and ventilation tube insertion 58
chorda tympani nerve 2, 3–4, 8, 16
identifying and handling and avoiding damage 4
CWD tympanoplasty 354
CWU tympanoplasty 251, 258, 265
stapes surgery 461–462, 473, 474, 475, 483, 488–489
with overhanging facial nerve, inferior dislocation 506
severance/sacrifice
cochlear implantation 550, 551
paraganglioma surgery 398, 419
unhooked prosthetic wire adhering to 519
closed (CWU) mastoidectomy see canal wall up mastoidectomy
closed (CWU) tympanoplasty see canal wall up tympanoplasty
cogulation 38
paragangliomas see bipolar coagulation
cochlea nucleus
hinds and pitfalls 584
making a bed for 568–571
cochlear aqueduct, CT 27–29
cochlear implantation 549–584
anatomy in case 550–556
indications 549
revision surgery 574–578
cochlear window see round window
cochleariform process 2, 4
cholesteatoma matrix remaining on 279
in cochlear implantation 571
CT 25, 27, 31
in CWD tympanoplasty 352, 354
in paraganglioma surgery 427
cochleostomy 549, 553, 556, 577, 579, 584
cog (anterior attic bony spur) 2, 4
in CWD tympanoplasty 354
in CWU tympanoplasty 224
in posterior epitympanotomy 250
in paraganglioma surgery 424
Cohlear implant 564
columella
in CWD tympanoplasty 328, 352, 353
in CWU tympanoplasty (in second-stage surgery) 308, 310–311
in ossiculoplasty
cases 212–214, 213, 214, 216, 218, 220–221, 225, 234, 237, 238
hinds and pitfalls 238, 239
in revision surgery 239–240
in revision surgery, artificial columella 240
with stapes superstructure absent 201
with stapes superstructure present 197, 198, 199, 201
computed tomography (CT) 19–33
CWD tympanoplasty 324
congenital cholesteatoma 269
concha (and conchal cartilage) in CWD tympanoplasty 330, 354
in metaplasty 331–332, 333, 340, 353
in ossiculoplasty 193
conchoplasty 78
congenital cholesteatoma case 269–281
Cottonoid
CWD tympanoplasty, in metaplasty 331
CWU tympanoplasty 260, 264, 276, 282, 285, 287, 298
for retraction pocket 250
Sanna et al. Middle Ear and Mastoid Microsurgery. ISBN 9783131320926 © 2012 Georg Thieme Verlag/Thieme Publishers
Subject Index
in paraganglioma surgery 428
in stapes surgery 475, 480, 484, 486, 490, 491, 492, 494
in tympanoplasty 523, 524, 525, 528, 529, 530, 531
 tympanosclerosis 191
forceps 46
for prosthesis placement in stapes surgery 471
fossa cranii see cranial fossa
fasial incision 1, 14, 16, 23
in CWU tympanoplasty 276, 287
fracture, stapes 504, 586

G

Gelfoam
in CWD tympanoplasty 333
cases 342, 348, 349, 353, 366, 369, 372, 373, 374
in meatoplasty 331
in modified Bondy technique 366, 369, 372, 373, 374
in CWU tympanoplasty 255
cases 268, 281, 283, 295, 309, 314, 315
in revision surgery 314, 315
in second-stage surgery 309, 311
in myringoplasty 177
by retroauricular approach 127, 136, 137, 140, 144, 147, 149, 150, 154, 156, 157, 158, 162
in revision surgery 183, 185
by transcanal approach 172, 173, 174
in ossiculoplasty
cases 207, 216, 217, 218, 221, 225, 226, 231, 232, 233, 234
at closure 204
in revision surgery 240, 244
with stapes superstucture absent 201
with stapes superstucture present 197, 199
in paraganglioma surgery 391
cases 406, 408, 417
in stapes surgery 470, 471
in revision surgery 525
general anesthesia 48
geniculate ganglion 3
glomus tumor see paraganglioma grafts
atleatic tympanic membrane 189
cholesteatoma of external auditory canal 118, 121
CWD tympanoplasty 330
cases 340, 341–342, 349, 353, 364–365, 373, 374, 375, 375–376
in modified Bondy technique 356, 364–365, 373, 374, 375, 375–376
CWU tympanoplasty 268
cases 281, 282, 283, 284, 290–291, 295–296, 300, 301, 315, 324
revision surgery 315, 324
facial nerve reconstruction 452, 586–587
harvesting material for 63–69
labyrinthine fistula 453
meningoencephalic herniation repair 457, 459
myringoplasty 122, 185
complications 179
in revision surgery 183–184
transcanal 172, 174–175
ossiculoplasty 187, 193, 199, 239
atleatic ear and adhesive otitis media 188
cases 189, 207, 208, 219, 226–227, 230–232, 234, 242, 243, 244
in revision surgery 240, 243
with stapes superstucture present 199
paraganglioma surgery 391
cases 404, 407, 417
stenosis of external auditory canal 109, 117–118
see also specific graft materials

H

hand(s) (surgeon’s—and fingers), position and support 36–37, 47
drilling 52
stapes surgery 461
handpieces 44, 52
head position (patient) 35
hearing
no serviceable, in canal wall down cavity 334, 337–341
in otosclerosis, loss 460
poor, paraganglioma B2 with 421
risk of loss in surgery
of only hearing ear 55–56
in primary stapes surgery 510
in revisional stapes surgery 533
hemostasis see bleeding
herniation, meningoencephalic and dural 454–459, 534, 543–548
homologous ossicles for reconstruction 187
incus 187, 188, 197, 201
cases 220, 224, 242, 352
horns 46
hydrops and the stapedotomy hole 469
hypotympanum
anatomy 2
cholesteatoma involving 253–254
paragangliomas involving see paraganglioma (classes B1 and B2)

I

iatrogenic injuries/trauma 504, 585–592
cholesteatoma associated with see cholesteatoma
stapes surgery for 501
implants see cochlear implants; prostheses
incision site preparation 36
incudomalleal joint
disarticulation 194, 210
in CWU tympanoplasty 346, 356
unintended/iatrogenic 412, 504
luxation 270
incudostapedial joint
in cochlear implantation 559
in CWU tympanoplasty
disarticulation 338, 346
in modified Bondy technique, visualization
on 363
in CWU tympanoplasty 299
cases 263, 270
controlling area around (in posterior tympanotomy) 251
disarticulation 249
erosion of 188, 193
in facial nerve overhanging, dislocation 506
in ossiculoplasty 188, 193
cutting/disarticulation 194
in paraganglioma surgery 411
disarticulation 423, 448
in stapes surgery 474
disarticulation/cutting 466, 479, 484–485, 487, 491–492, 496
incus 193–194
anatomy 1
anomalies 500
autologous see autologous incus
in cochlear implantation 550, 558
in revision surgery 581–582
conditions requiring removal 194
in CWU tympanoplasty 328
homologous 352
in modified Bondy technique 355, 359, 363, 364, 374, 377, 378
in CWU tympanoplasty
cases 256, 263, 264, 265, 266, 274, 275, 280, 289–290, 293, 308–309, 310, 319, 320
in posterior epitympanotomy 249
in second-stage surgery 308–309, 310, 319, 320
disarticulation (=incudomalleal joint disarticulation), unintended/iatrogenic 412, 504, 586
erosion 186, 512, 523, 525, 530, 532
in facial nerve overhanging 507
fixation 498
fossa for see fossa incudis
lenticular process see lenticular process in mastoidectomy, identification of short process 246
in myringoplasty 153
erosion 186
tympansclerosis involving 177
in ossiculoplasty 193–194, 210
artificial columnella manufactured from 240
hints and pitfalls 238–239
in revision surgery 239, 240, 243, 244
with stapes superstucture absent 201
with stapes superstucture present 197–199
in paraganglioma surgery 423, 441
horns and pitfalls 448
short process 410, 419
in stapes surgery 471
cases 475, 478, 481, 482, 483, 484, 485, 487, 496, 522–523, 524, 525, 527
measuring distance between stapes and lateral surface of long process of incus 463, 475, 485, 490
in revision surgery 522–523, 524, 525, 527, 530, 532
infection, preoperative management 91

Sanna et al. Middle Ear and Mastoid Microsurgery. ISBN 9783131320926 © 2012 Georg Thieme Verlag/Thieme Publishers
inflammatory stenosis of external auditory canal see postinflammatory stenosis injuries, surgical/iatrogenic see iatrogenic injuries instruments 38–47 irrigation see suction and irrigation

jugular bulb 3, 11 bleeding from 585 CT of fine channel between cochlea and 27–29 in paraganglioma surgery 393, 419, 420, 443, 448

keratosis obturans vs cholesteatoma of external auditory canal 3, 11

K

labyrinth 3 fistula involving 54, 252, 324, 353, 380, 449–452, 586 management 449–452, 586 labyrinthine segment of facial nerve 3 lateralization of tympanic membrane see tympanic membrane in revision surgery 243 local anesthesia 48 myringoplasty 185 ossiculoplasty for second-stage operation 238 stapes surgery 460, 511

M


Sanna et al. Middle Ear and Mastoid Microsurgery. ISBN 9783131320926 © 2012 Georg Thieme Verlag/Thieme Publishers
problems and solutions 175–179
retroauricular see retroauricular incision revision 57, 178–179
transcanal see transcanal approach
myringotomy for ventilation tube insertion 58

N
neoplasms (tumors)
bone, benign see osteoma
glomus see paraganglioma
in only hearing ear 55
ventilation tube contraindicated 58
nerve graft in facial nerve reconstruction 452, 586–587
NeuroLip 461
nitrous oxide 48
Nucleus System 554

O
obliteration of middle ear see petrosectomy, subtotal
obliterative otosclerosis 497, 511
open (CWD) mastoidectomy with paraganglioma, cases 421, 440
open (CWD) tympanoplasty see canal wall down tympanoplasty
operating room setup 34–60
arrangement of room 34
hints and pitfalls 47
operating site preparation 36
Osseostap microdrill 466, 469, 501, 502, 511, 513, 514, 515, 516, 533
cases 480, 481, 485, 486, 491, 493, 520, 524, 531
ossicular structure forming near cholesteatoma matrix 454
ossicular chain 1
in CWD tympanoplasty 326–385, 334, 336, 344, 345, 346
in modified Bondy technique 355, 360, 363, 370, 373, 374, 377, 378
in CWU tympanoplasty (for cholesteatoma) 324
dissection from 288, 289–290
erosion, myringoplasty and 122, 186
fixation 463, 498–499, 512
homologous see homologous ossicles
management in ossiculoplasty 192–193
revision surgery see revision surgery verifying status 193, 239
meatal skin incision 70
in myringoplasty
assessing integrity 122, 125, 147
in revision surgery 182
in paraganglioma surgery 389, 391, 400, 401, 423, 431, 441
revision surgery see ossiculoplasty
revision surgery due to problems in 512
see also specific ossicles
ossiculoplasty (ossicular chain reconstruction) 35, 187–247
approaches 187–188
contraindications 187
CWD tympanoplasty 328, 354
in revision surgery 380
hints and pitfalls 238–239
indications 187

P
packing (canal or meatus) CWD tympanoplasty 333
CWU tympanoplasty 255
myringoplasty 133, 177
Gelfoam see Gelfoam
paraganglioma (glomus tumor) 386–448
cases 387–447
class A1 386, 389, 390–390, 390–400, 448
class A2 386, 389, 390, 400–409, 448
class B1 387, 389, 392, 409–417, 448
class B2 387, 389, 393, 418–429, 448
with poor hearing 421–429
class B3 387, 389, 429–447, 448
class C and D 389
classification 386–387
hints and pitfalls 448
surgical steps 389–394
surgical strategy 389
pars flaccida in CWU tympanoplasty 287
pars tensa
in ossiculoplasty, status 188
repair of perforation 135–137
position 35
stapes surgery 36, 461
selection 55
perichondrium, tragal (for reconstruction) 65–69
in incus fixation 498
in revision surgery 532, 535, 528, 533
transcanal myringoplasty 172
perilymph fluid 303, 304, 305
removal 3
CWD tympanoplasty 329, 354, 385
CWU tympanoplasty 303, 307
perilymph outflow, mild but sustained 502
perilymphatic fistula 516
petrosal sinus, bleeding from 585
petrosectomy, subtotal (middle ear obliteration) 534–548
cochlear implantation with case 575–577
hints and pitfalls 584
indications for 549
indications for 534
in cochlear implantation 549
paraganglioma 389, 396
case 421
Plastipore partial ossicular replacement prosthesis (PORP) 239
with staped superstructure present 196, 197, 199
Plastipore total ossicular replacement prosthesis (TORP) with fixed stapes footplate 204
in revision surgery for CWU tympanoplasty 314
for ossiculoplasty 242
with stapes superstructure absent 197, 201
case 226
pneumatized temporal bone in CWD tympanoplasty, management 329–330
polypoid mass in external auditory canal, paraganglioma as 430, 440
position
patient see patient surgeon
36
surgeon’s hands see hands
postauricular incision for revision mastoidectomy 379
postinflammatory stenosis of external auditory canal 107–109
case 110–114
following myringoplasty 179, 186
postoperative period
care/management 91
cholesteatoma see cholesteatoma stenosis of external auditory canal 107–109
following myringoplasty 179, 186
preoperative care 91
prostheses in ossiculoplasty see artificial biocompatible prostheses
prostheses in stapes surgery (incl. stapedotomy)
anomalous incus 500
cutting jig 47
facial nerve overhanging 507
failure 513–514
radiology 19–33
CWU tympanoplasty 324
congenital cholesteatoma 269
retraction pocket 250, 254, 297
in modified Bondy technique of CWD tym-
cases 333, 349
retractors, mastoid 43
retroauricular incision and approach 61–62
anaesthesia 48, 51
cochlear implantation 535, 537, 544
CWD tympanoplasty, cases 333, 349
in modified Bondy technique 369 in revision surgery 381
CWU tympanoplasty cases 257, 269, 284, 297 in second-stage or revision surgery 215, 301, 302, 312
exostosis 92
external auditory canal cholesteatoma 118, 119
external auditory canal stenosis 109, 110, 115 material for reconstruction of atelectatic tympanic membrane 65
myringoplasty 124–170, 185 cases 135–170 surgical steps 124–133
osteoma 92
paraganglioma 389, 390, 435 site preparation 36
skin closure following 90
surgeon’s hand positions 36 surgical steps 61
retroauricular scar tissue for grafts 63–66 in stenosis of external auditory canal 109
retroauricular–transcanal approach, para-
ganglioma 389, 392, 401
retroauricular–transmastoid approach, para-
ganglioma 392
retroauricular–transmeatal approach, ossi-
culoplasty 187
retrofacial cell drilling/removal
CWU tympanoplasty 329
paraganglioma surgery 419, 442, 447
retrofacial tympanotomy, paragangliomas 389, 448
retrosigmoid cells in subtotal petrosectomy 538 revision surgery 57
cochlear implantation 578–584
CWU tympanoplasty (for cholesteatoma) 57, 326, 379–385
CWU tympanoplasty (for cholesteatoma) 57, 301–303 cases 312–315, 320–324 surgical steps 302–303
myringoplasty 57, 178–179
ossiculoplasty 57, 239–240, 303 case 242–244
stapes surgery 57, 511–533 round (cochlear) window, and its membrane 2 in cochlear implantation 549, 551–553, 559, 560, 561, 562, 563, 565, 571–572, 574, 576, 580, 582, 584 closure 566–568 hints and pitfalls 584 ossified 576
in revision surgery 580
CT 27 in CWU tympanoplasty 267
cholesteatoma involving 253 in second-stage surgery 307 landmark in oval window location 515 myringoplasty and epithelialization involving 176 in ossiculoplasty cases 222, 223, 242, 243, 278 in revision surgery 242, 243 in paraganglioma surgery 391, 416, 425, 444 in stapes revision surgery 533 round window niche in cochlear implantation 551, 559, 575, 579 obliterated niche in open cavity 571–574 in revision surgery 579

sandwich technique of canal wall reconstruc-
tion 254, 284, 296
Sanna prosthesis 463, 465, 498, 499 case 476 in incus fixation 498 in malleus fixation 499 scala tympani in cochlear implantation 549, 553, 554, 556, 571, 577 scalpel handles and blades 43 scissors 45, 46
scrub nurse 34
second-stage surgery 48, 56 cholesteatoma 56 myringoplasty see subheadings below in CWD tympanoplasty (for cholesteatoma) 227–238, 379 in CWU tympanoplasty (for cholesteatoma) 238, 248 cases 304–311, 315–320 hints and pitfalls 325 ossiculoplasty as see subheading below surgical steps 302–303 ossiculoplasty (after tympanoplasty—predominantly closed) 187, 188, 191–192, 238, 301–303 approaches 187, 188, 301 cases 214–219, 221–238

semicircular canals 3, 10
CT 21, 23
lateral 3, 10
in CWU tympanoplasty 267, 274
facial nerve and the 4
in mastoidectomy 246
septal cartilage, CWU tympanoplasty 283 sigmoid sinus bleeding and its control (hemostasis) 54, 585 in CWU tympanoplasty 327, 340, 353 in modified Bondy technique 357 in revision surgery 379, 382 in CWU tympanoplasty 260, 272, 294 in revision surgery 323 in mastoidectomy 245 in paraganglioma surgery 418, 431, 440 Silastic sheeting
CWU tympanoplasty, case 348
CWU tympanoplasty 254 cases 269, 280, 281, 283, 295, 300, 304, 316, 317, 318, 323 hints and pitfalls 325 in second-stage or revision surgery 302, 303, 304, 316, 317, 318, 323 myringoplasty 176, 177 ossiculoplasty 188, 192 cases 214, 228, 233, 235
paraganglioma surgery 421
sinodural angle
CWD tympanoplasty 327
CWU tympanoplasty 15, 246, 249 cases 261, 274, 294, 317, 384 in revision surgery 379, 383, 384 site of incision, preparation 36 skin incision, cochlear implantation 564–565 see also specific approaches
meatal see meatal skin retroauricular, closure 90 retroauricular 133
skin graft 69 cholesteatoma of external auditory canal 118
CWU tympanoplasty revision surgery 324 retroauricular myringoplasty 132, 149–150, 168, 170 stenosis of external auditory canal 109, 117–118 speculums, ear 43 in stapes surgery 461
speech processor 556, 568 spiral lamina in cochlear implantation 577 spiral ligament in cochlear implantation 553, 554 split-thickness skin graft 69 cholesteatoma of external auditory canal 118 retroauricular myringoplasty 132, 149–150, 168, 170 stenosis of external auditory canal 109, 117–118 Spongel 114 cochlear implantation 563, 572 CWU tympanoplasty 290, 291 ossiculoplasty 212, 225, 236, 237, 238 stapes surgery 482 staging of surgery 56 myringoplasty 186 in myringoplasty with extensive epithelia-
ization in middle ear 176 see also second-stage surgery

Sanna et al. Middle Ear and Mastoid Microsurgery. ISBN 9783131320926 © 2012 Georg Thieme Verlag/Thieme Publishers
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/14/2012 5:12:16 PM</td>
<td>Buch 1.indb 600</td>
</tr>
</tbody>
</table>

stapedectomy
medial problems after 514–516
stapedotomy vs 460
stapedial artery (remnant/persistent) 502, 509–510
stapedial muscle tendon
cholesteatoma involving 253
in paraganglioma surgery 411
stapes fixed at or movement limited by 497, 319
in stapes surgery 475, 485
cutting 319, 479–480, 485
stapedotomy 191
anteriorly performed, correction 514
creating/drilling the hole 466, 469–470
cases 481, 486, 491, 496, 507, 508, 520, 524, 527, 529, 531, 532
hints and pitfalls 511
in narrow oval window niche 508–509
in obliterator otosclerosis 497
in overhanging facial nerve 507
in revision surgery 511, 513, 515, 520, 524, 526, 527, 529, 531, 532
in stapedial artery persistence 510
prosthesis see prostheses
revision surgery with cochlear ossification after 581–584
stapedotomy vs see stapedotomy
structures to be cut 466–468
stapes 191, 196–197, 460–533
anatomy 1
in cochlear implantation 559
CT 25
in CWD tympanoplasty 330, 341, 342, 348
in CWU tympanoplasty 265, 267, 277–278, 280, 289, 293–294
in second-stage surgery 307, 308, 319
distance between lateral surface of long process of incus and, measurement 463, 475, 485, 490
floating 504
footplate see footplate
fracture 504, 586
in myringoplasty 176, 177, 186
in ossiculoplasty
cases 205, 206, 208, 209, 210, 212, 213, 215, 216, 217, 225, 226, 228, 229, 231, 233, 234
hints and pitfalls 238
with superstructure absent 201, 225
with superstructure present 197–201, 209–217
in paraganglioma surgery 411, 415, 416, 428, 444, 447
surgery 191, 196–197, 460–533
for anatomical variations 500–502
anesthesia 48, 51, 460
approach 460, 461–463
cases 473–496, 506–510
contraindications 460
in disease states 497–499
hints and pitfalls 510–511
indications 460
instruments 42
only hearing ear 56
patient selection 55
problems and solutions 497–510
revision (for failed surgery) 57, 511–533
special considerations 35–36
staging strategy 56
steps in 461–473

---

in surgical trauma 504
in tympanosclerosis 191, 196–197, 460
stenosis of external auditory canal 107–121, 178, 186
hints and pitfalls 118
postinflammatory see postinflammatory
stenosis of external auditory canal postoperative see postoperative period
surgical steps 109–110
subcutaneous tissue flaps 502
cochlear implantation 504
CWD tympanoplasty, in revision 379, 380
CWU tympanoplasty 255
second-stage or revision surgery 302
subtotal petrosectomy 536
subfacial tympanotomy, paragangliomas 393, 396, 443, 445
suction and irrigation 53–54
instruments 38, 44
mastooidectomy 246
supralabyrinthine area in CWD tympanoplasty in modified Bondy technique 376
in revision surgery 384
subfacial recess 338, 345, 347
CWD tympanoplasty 294
modified Bondy technique 377
paraganglioma surgery 423, 424
sural nerve in facial nerve reconstruction 586
surgeon 34
hand position see hands
position of 36
in stapes surgery 35–36
Surgicel, paraganglioma surgery 390, 396, 448
cases 420, 429, 432, 443, 446

---

technical considerations (general) 52–54
tegmen
bone erosion 452
herniated brain tissue 456
television monitor 24
temporalsis fascial grafts see fascial grafts
temporomandibular joint (accidental exposure) canalplasty 78, 87, 90 exostosis or osteoma surgery 95
tendon of malleus, cutting 195–196
of stapedius see stapedial muscle tendon of tensor tympani see tensor tympani
tensor tympani canal of 4
tendon 2
preservation in CWD tympanoplasty 330
myringoplasty and (its treatment) 190, 195
tendon, cutting
CWD tympanoplasty 339, 347
CWU tympanoplasty 272
myringoplasty 131
tragal cartilage see tagus
transcanal approach (via external auditory canal) anesthesia 48, 51
CWU tympanoplasty, in second-stage or revision surgery 301

---

exostosis 92
material for reconstruction of tympanic membrane 65
myringoplasty 171–175, 185
elevation of posterior annulus 126
surgical steps 171–172
underlay technique 127, 128
operating site preparation 36
ossiculoplasty 187, 191
cases 219–221, 232–234
hints and pitfalls 238
ostecoma 92
paragangliomas 389, 397, 448
speculum 43
surgeon’s hand positions 37
see also transmastoid–transcanal approach
transcortical mastoidectomy in CWD tympanoplasty 326
transmastoid approach, ossiculoplasty 188, 191–192
hints and pitfalls 238
see also retroauricular–transmastoid approach
transmastoid–transcanal approach, ossiculoplasty 187–188
cases 217–219, 225–227
transmeatal (endomeatal) approach
CWD tympanoplasty 327
exostosis or osteoma surgery, inadvisability 107
ossiculoplasty 188, 192
paraganglioma surgery 392
speculum 43
surgeon’s hand positions 37
trauma, surgical/iatrogenic see iatrogenic injuries
triangle of attack, closed tympanoplasty 245, 274
tumors see neoplasms
 tympanic annulus see annulus
 tympanic cavity 1–3, 4
 attic see attic; atticotomy
 bleeding from, prevention 54
 in CWD tympanoplasty, management 327–328
 medial wall 2
 mucosa see mucosa
 in ossiculoplasty, closure 204
 posterior wall 2
 promontory 2
 cholesteroloma covering 277–278
 in cochlear implantation, drilling 578
 overhanging (= narrow oval window niche) 502, 508–509
 reconstruction see tympanoplasty
 in retroauricular myringoplasty, preparation 127
 in tympanosclerosis, management 192
 tympanic membrane (eardrum) 1
 atelectatic see atelectatic tympanic membrane
 in canalplasty
 checking location 90
 perforation 90
 epithelialization of medial aspect, myringoplasty and 176
 in exostosis and osteoma surgery 92–94, 95
 intact, tympanosclerosis with 191
 lateralization 179, 185, 515
 revision 312–315, 515
 material for reconstruction 65
pars flaccida in CWU tympanoplasty 287
pars tensa status in ossiculoplasty 188
perforation and tears 107, 122, 504, 586
management schemes for various types 124, 127–129, 185, 504, 575
recurrence after myringoplasty 178, 186
in revision ossiculoplasty 239–240
in stenosis of external auditory canal 109
see also epitympanum; hypotympanum; mesotympanum; myringoplasty; myringotomy; protympanum; tympanoplasty
tympanic orifice of eustachian tube in retroauricular myringoplasty 124, 154
tympanic segment of facial nerve 3
in CWU tympanoplasty 276
in paraganglioma surgery 420, 422
in stapes surgery 490
in revision surgery 533
in subtotal petrosectomy 109
see also epitympanum; hypotympanum; mesotympanum; myringoplasty; myringotomy; protympanum; tympanoplasty
tympano-epitympanum 124, 185
– 127, 135, 137, 139, 140, 152, 153, 161, 165, 166
in tympanoplasty 248–325
calibration of bony canal for 78
incision and exposure 70
preserved see canal wall up tympanoplasty
removal procedure 326–327
removed see canal wall down tympanoplasty
mastoidectomy see mastoidectomy
patient selection 55
revision surgery (with cholesteatoma) see revision surgery
tympanosclerosis 122, 190–238
cochlear implantation in 571, 575
macropscopic and histologic features 190
in myringoplasty 175, 177
– 151–152, 153, 167
in retroauricular approach 125, 138, 151–152, 153, 167
in revision ossiculoplasty 171
ossiculoplasty considerations 190–238
stapes management 191–197, 460
tympanotomy tube
CWU tympanoplasty 254
only hearing ear 55
tympanotomy, posterior 9, 16, 18, 251
cochlear implantation 549, 584
cases 550–551, 552, 557–558, 558–559, 562, 565
CWU tympanoplasty 248, 251
cases 277, 278, 280, 293, 304, 307, 311
ossiculoplasty 187–188
paragangliomas 389, 392, 393, 448
cases 410, 411, 412, 414, 416, 417, 418, 419
see also epitympanotomy
tympanotomy, retrofacial, paragangliomas 389, 448
tympanotomy, subfacial, paragangliomas 393, 396, 443, 445
underlay technique in myringoplasty 122, 127, 131, 178, 179, 185
vascular nature of paraganglioma 389
ventilation tube 39
insertion 58–60
indications and contraindications 58
vestibular window see oval window