Index

A
Achilles tendon allograft technique, 118
Allograft extensor mechanism reconstruction, 118, 126.
see also Whole extensor mechanism allograft technique
Anderson Orthopedic Research Institute (AORI) classification, bone loss, 146
porous tantalum augments, 151
radiographic signs of loosening, 143, 144
salvage prostheses, 152
stemmed femoral and tibial components, 148, 149
trabecular metal cones, 147, 148
type 1 defects, 149
type 2 defects, 149–150
type 3 defects, 150
ultraporous metals, 151–152

B
Bone loss, revision TKA
AORI classification grade, 146
aseptic etiology, 145
case presentation, 143–145
Clatworthy and Gross classification scheme, 150–151
filling options, 146
metallosis, 145, 153
osteolysis, 145
osteo lytic defect, 147, 148
polyethylene insert, full-thickness wear of, 147
polymethylmethacrylate, 151, 152

C
Charlson comorbidity index, 95
Chronic right knee PJI
case presentation, 101–102
complications, 108
diagnosis/assessment of, 102–104
diaphyseal peri-spacer femoral fracture, 107
dynamic spacer implantation, 104
erthrocyte sedimentation rate and C-reactive protein, 104
ICM recommendations, 108–109
Chronic right knee PJI (cont.)
inflammatory markers, 105
intravenous vancomycin, 104
long-term suppressive
antibiotic therapy,
109, 110
periprosthetic fungal infection, 108
prosthesis reimplantation, 106
spacer exchange procedure,
105, 108
two-stage exchange
arthroplasty, 107, 108
Clatworthy and Gross
classification scheme,
150–151
Complex skin incisions
bilateral knee osteoarthritis,
69, 70
case presentation, 69–71
complex regional pain
syndrome, 71
dry eschar formation, 76, 77
hyperbaric oxygen therapy, 78
incisional wound VAC, 76
knee with skin necrosis, 73
MRI, 71, 72
preoperative consultation, 71
prior flaps, 74
prior incisions, 73
sham incisions, 74
soft necrosis, 77, 78
soft tissue expanders, 74, 77, 79
surgical outcomes, 76–77
surgical technique, 74–76
vascular malformations, 72
Computer-assisted surgery
(CAS), posttraumatic
arthritis, 51–52

D
Distal femoral replacement,
48–49
Distal femur periprosthetic
fractures. See

Periprosthetic distal
femur fractures
Dynamic spacers, 108

E
Extensor mechanism (EM)
disruption
allograft reconstruction, 118,
126 (see also Whole
extensor mechanism
allograft technique)
average extensor lag, 125, 126
case presentation, 113–114
clinical follow-up, 125
CT scan and MRI, 117
iatrogenic injury, 114
incidence, 114–115
nonoperative treatment, 117
outcomes, 124–125
patella, primary repair of, 115
patient history, 116
physical exam, 116
plain radiographs, 116
preventive efforts, 126
primary repair, 117–118
quadriceps tendon rupture,
114–115
radiographs, 113, 114
risk factors, 114–115
Extra-articular deformity. See
Lower extremity
extra-articular
deformity

F
Flexion contracture, 41
case presentation, 29–30
coronal plane imbalance
correction, 35, 36
diagnosis/assessment, 30–32
distal femoral resection, 32, 33
extension space with spacer
block, 34
knee after closure, 38
### Index

<table>
<thead>
<tr>
<th><strong>G</strong></th>
<th>Gap balancing, 22–24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H</strong></td>
<td>Hyperbaric oxygen therapy, 78</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>Irrigation and debridement strategy</td>
</tr>
<tr>
<td></td>
<td>PJI, 84–85, 88</td>
</tr>
<tr>
<td></td>
<td>with polyethylene exchange,</td>
</tr>
<tr>
<td></td>
<td>late acute</td>
</tr>
<tr>
<td></td>
<td>hematogenous</td>
</tr>
<tr>
<td></td>
<td>infection, 93, 97, 98</td>
</tr>
<tr>
<td><strong>K</strong></td>
<td>Krackow classification, of valgus</td>
</tr>
<tr>
<td></td>
<td>knee, 18</td>
</tr>
<tr>
<td><strong>L</strong></td>
<td>Late acute hematogenous</td>
</tr>
<tr>
<td></td>
<td>infection</td>
</tr>
<tr>
<td></td>
<td>antibiotic cement, 94</td>
</tr>
<tr>
<td></td>
<td>antibiotic-loaded articulating</td>
</tr>
<tr>
<td></td>
<td>spacer, insertion of, 93, 94</td>
</tr>
</tbody>
</table>

betadine scrub brushes, 93

case presentation, 91–92
characterization, 98
C-reactive protein, 96, 97
diagnosis, 92
empiric intravenous |
| | antibiotics, 98 |
| | erythrocyte sedimentation |
| | rate, 96, 97 |
| | irrigation and debridement |
| | with polyethylene |
| | exchange, 93, 97, 98 |
| | oral Rifampin, 93 |
| | outcomes, 94–95 |
| | peripherally inserted central |
| | catheter, 93 |
| | physical therapy, 93, 94 |
| | polyethylene insert, 93 |
| | postoperative management, 93 |
| | risk factors, 95–96 |
| | two-stage revision |
| | arthroplasty, 98, 99 |
| | Ligamentous instability, 155 |
| | anterior knee pain, 158 |
| | antibiotic impregnated |
| | cement, 162 |
| | case presentation, 156, 157 |
| | clinical history, 157–158 |
| | component malrotation, |
| | 158, 159 |
| | CT scan, 159, 167 |
| | evaluation, 157 |
| | intraoperative demonstration, |
| | 160, 161 |
| | femoral component, |
| | improper rotational |
| | alignment of, 161, 162 |
| | management, 164–165 |
| | coronal instability, 165–166 |
| | flexion instability, 165 |
| | global instability, 166–167 |
| | microsagittal saw, 161 |
| | midline parapatellar |
| | arthrotomy, 160 |
| | multiple aseptic aspirations, 159 |
| | outcomes, 163 |
Ligamentous instability (cont.)
patellar inversion technique, 160
physical exam, 158
preoperative planning, 160
radiographic analysis, 159
rotating hinge prosthesis, 166
routine inflammatory markers, 159
symptoms, 158
varus-valgus constrained insert, 164
Lower extremity extra-articular deformity
case presentation, 55
computer-assisted navigation, 59
computer-assisted study, 63
custom-made cutting guides, 65
diagnosis/assessment, 55–57
exhaustive preoperative planning, 65–66
extra-articular correction, 60
extra-articular osteotomy, 60
of femur, 59
full-length extremity films, 59
hardware removal, 63, 64
intra-articular correction, 57, 58, 60
intramedullary femoral instrumentation, 64
management, 57
medial opening wedge osteotomy, 60, 62
minimal sagittal plane deformity, 60, 61
outcomes, 58
physical examination, 55–56
tibia and femur, coronal plane deformity of, 60, 61

M
Medial opening wedge osteotomy, 60, 62
Medial unicompartmental arthroplasty, 6

Musculoskeletal Infection Society (MSIS) guidelines, 97

P
Patellar inversion technique, 160
Patellar osteonecrosis, 25
Patellar tendon rupture, 115, 117
Patellar tracking problems, 25
Periprosthetic distal femur fractures
epidemiology, 130
external fixation, 131
incident rates, 129
nonoperative treatment, 131
operative fixation technique, 130
risk factors, 130
Rorabeck and Taylor classification, 130–131
with stable implants, type 2
intramedullary nail usage, 132–134
locking distal femur plate, 136, 137
non-displaced fracture extension ending, 132, 133
transverse with mild comminution, 135
with suspected loose implant, type 2 vs. 3
CT scan, 137–139
distal femur replacement, 139, 140
metaphyseal bone stock, 138–139
prosthesis type, 138
revision arthroplasty, 138
Periprosthetic joint infection (PJI), 46–47
AAOS clinical guidelines, 103
antibiotic administration, 83–84
case presentation, 81–82
cementless knee devices, 86
definition, 103
hematogenous infection (see Late acute hematogenous infection)
irrigation and debridement strategy, 84–85, 88
oral antibiotic suppressive therapy, 86
outcomes, 87
posterior synovectomy, 85
postoperative management, 86
serum C-reactive protein, 82, 83, 87–88
synovial fluid white blood cell counts, 83, 88
wound closure, 85
Peroneal nerve palsy, 25
PJI. See Periprosthetic joint infection (PJI)
Polymethylmethacrylate (PMMA), 151, 152
Posterior capsule release, flexion contracture, 35–37
Posttraumatic arthritis
arthroplasty reconstruction with long-stem components, 45, 46
case presentation, 43–44
complete hardware removal, 45
complication rates, 52, 53
hardware management, 47–48
implant selection, 48–49
intraoperative considerations
computer-assisted surgery, 51–52
computer navigation, 51
incision design, 49
quadriceps snip technique, 50, 51
skin flap viability, 50
soft tissue handling, 49, 50
outcomes, 52, 53
periprosthetic joint infection, 46–47
preoperative considerations, 46
resection arthroplasty, 45
serologic evaluation, 44
Proximal tibial osteotomy, 8

R
Ranawat classification, of valgus knee, 18
Rorabeck and Lewis classification, of distal femur periprosthetic fractures, 129–131

S
Serum C-reactive protein, PJI, 82, 83, 87–88
Soft tissue expanders, 74, 77, 79
Spacer exchange procedure, 105, 108
Synovial fluid white blood cell counts, PJI, 83, 88

U
Unicompartmental knee arthroplasty, 8–9

V
Valgus knee
case presentation, 13–14
Krackow and Ranawat classifications of, 18
management of, 14
postoperative outcome, 14–15
postoperative X-rays, 16
preoperative X-rays, 15
total knee arthroplasty, 16–18
alignment techniques, 20–22
gap balancing, 22–24
surgical approach, 19
treatment complications, 25–26
Varus knee
case presentation, 1–2
diagnosis/assessment of osteoarthritis, 3–4
management of, 5
Valgus knee (cont.)
  post-conservative management failure
  proximal tibial osteotomy, 8
  total knee arthroplasty, 9–10
  unicompartmental knee arthroplasty, 8–9
  postoperative outcome, 6–7
  postoperative radiographs, 6–7
  preoperative radiographs, 2–5
  treatment complications, 10–11
Varus-valgus constrained (VVC) insert, 164

W
Whiteside algorithm, lateral soft tissue release, 23

Whole extensor mechanism
  allograft technique
  allograft preparation, 119, 120
  closure, 123, 124
  host quadriceps tendon, 121–123
  host tibia, preparation of, 119, 121, 122
  pants-over-vest technique, 122, 123
  postoperative management, 123–124
  presurgical allograft inspection, 119
  proximal portion, of allograft tendon, 121–122
  surgical exposure, 119