Contents

1. Introduction, Anatomy and Biomechanics **1**
Anatomy of Elbow 2
Functional Anatomy 3
Elbow Biomechanics 10

2. Arthroscopy and Soft Tissue Involvement around Elbow **18**
Injuries around Elbow Including Athletic Injury of Elbow 19

3. Tennis Elbow—Lateral Epicondylitis **20**

4. Medial Epicondylitis—Golfer's Elbow **25**

5. Pronator Teres Syndrome (Anterior Elbow Pain) **27**
Treatment 30

6. Anterior Interosseous Syndrome **31**
Differential Diagnosis 34

7. Posteromedial Elbow Impingement **36**
Clinical Findings 36
Diagnostic Tests: X-ray 36
Treatment 37
Differential Diagnosis 37

8. Valgus Extension Overload Syndrome **38**

9. Triceps Tendon Rupture **40**

10. Biceps Tendon Rupture **44**
Biceps Tendon Tear at the Shoulder (Long Head of Biceps) 44
Biceps Tendon Tear at the Elbow—Distal Biceps Rupture 46

11. Fractures of Distal Humerus in Adults **54**
Surgical Anatomy of Distal Humerus 55
Radiographic Evaluation 58
Classification 58
Conservative or Surgical Treatment 60
Role of Primary Total Elbow Replacement 80

12. Fractures of Capitellum and Trochlea **96**
Anatomy 97
Fracture Classification 98
Clinical Examination 101
Radiology 103
Natural History 104

Treatment 104
Postoperative Management 113
Complications 114

13. Fractures of Olecranon 117
Clinical Features 118
Anatomy 119
Classification 120
Treatment 122
Postoperative Rehabilitation 140
Complications 140

14. Coronoid Fractures 147
Anatomy 147
Classification 149
Mechanism of Injury 151
Treatment 154
Postoperative Care 161
Discussion 162

15. Radial Head Fractures 173
Anatomy 173
Biomechanics of Radial Head 176
Classification 179
Role of Coronoid Process 182
Treatment 182
Open Reduction and Internal Fixation of Radial Head 184
Radial Head Arthroplasty 191
Postoperative Care 194

16. Ipsilateral Fracture of Humerus with Forearm Fractures in Adults (Floating Elbow in Adults) 200
Discussion 201

17. Elbow Dislocation and Instability 207
Components that Contribute to Stability of the Elbow 207
Acute Elbow Dislocation 210
Complex Elbow Dislocation 220
Complications of Elbow Dislocation 225
Open Reduction and Arthrolysis 232
Elbow Instability 238
Rehabilitation 260

18. Bony Injuries around Elbow in Children 264

19. Supracondylar Fractures of the Humerus in Children 266
Physical Examination 266
Radiographic Anatomy 268
Classification 273
Transphyseal Fractures of the Distal Humerus 278

Percutaneous Pinning 280
Pink Pulseless Hand 285

20. Fractures of the Lateral Humeral Condyle 291
Mechanism of Injury 291
Clinical Presentation 292
Imaging (Radiography) 294
Classification 296
Management 300
Growth Disturbance 311
Tardy Ulnar Nerve Palsy 314
Pearls 314
Pitfalls 314

21. Medial Condyle Fracture of Humerus 317
Classification 318
Anatomy 321
Mechanism of Injury 322
Pathophysiology 324
Presentation and Diagnosis 325
Management 326

22. Medial Epicondylar Apophysis Fracture in Children 329
Anatomy 329
Mechanism of Injury 331
Classification 331
Diagnosis 335
Imaging 336
Management 338
Surgical Technique 340
Complications 340

23. Distal Humeral Physeal Injuries in Children 345
Carrying Angle 345
Ossification of Distal Humerus 345
Pearls: Pediatric Distal Humeral Injuries 346

24. Fractures Involving Entire Distal Humeral Physis 347
Classification 347
Treatment 347
T - Condylar Fracture 348
Pearls: Pediatric Distal Humeral Injuries 349

25. Malunited Supracondylar Fracture of Humerus (Cubitus Varus and Valgus Deformity) 350
Prevention 351
Criteria for Closed Reduction 351
Treatment of Cubitus Varus Deformity 351
Complications 355

26. Nonunion Lateral Humeral Condyle Fracture **357**

27. Olecranon Fractures in Children **360**

28. Fractures of Radial Head-Neck in Children **361**
Radiographic Evaluation 361
Classification 361
Management 364
Percutaneous Reduction 364
Intramedullary Pin Reduction 366
Open Reduction 367
Complications 368

29. Ipsilateral Fracture of Distal Humerus with Forearm Fractures in Children (Floating Elbow in Children) **370**
Discussion 372

30. Panner's Disease and Osteochondritis Dissecans of the Capitellum **376**
Panner's Disease 376
Osteochondritis Dissecans 379

Index *387*