- Foreword (p. xi)
- Preface (p. xiii)
- Acknowledgments (p. xv)
- **1. Normal Anatomy** (p. 1)
- Embryology (p. 1)
- Patellar Morphology (p. 2)
- Anterior Surface
- Posterior Surface
- Articular Surface
- Medial Facet
- Lateral Facet
- Base of the Patella
- Apex of the Patella
- Paramedian Borders
- Osseous Structure (p. 9)
- Trochlear Surface of the Femur (p. 10)
- Lateral (External) Trochlear Facet
- Supratrochlear Fossa
- Trochlear Condylar Junctions
- Synovium of the Patellofemoral Joint (p. 12)
- Suprapatellar Pouch
- Peripatellar Synovium
- Infrapatellar Synovium
- Soft-Tissue Stabilizers (p. 14)
- Passive Stabilizers
- Active Stabilizers
- Vascular Anatomy of the Patellofemoral Joint (p. 20)
- Arterial Supply
- Venous Drainage
- Functional Aspects of the Vascular Supply
- 2. Biomechanics of the Patellofemoral Joint (p. 24)
- **Biomechanics** (p. 24)
- Functions of the Patella (p. 24)
- **Statics** (p. 25)
- Calculation of Patellofemoral Compression
- Patellofemoral Contact Areas (p. 30)
- **Dynamics** (p. 34)
- Knee Extension Against Resistance (p. 38)
- Law of Valgus (p. 38)
- **Abnormal Biomechanics** (p. 39)
- 3. History and Physical Examination (p. 43)
- **History** (p. 43)
- The Complaint
- Onset of the Problem
- What Is the Nature of the Pain?
- History of Overuse?

- History of Surgeries
- Other Medical History
- Patient Goals and Expectations
- Pain Diagrams
- Physical Examination (p. 47)
- Evidence of Malalignment
- Reproducing the Patient's Pain
- Putting It All Together
- 4. Imaging the Patellofemoral Joint (p. 76)
- Standard Views (p. 76)
- Anteroposterior View
- Lateral View
- Tangential (Axial) View
- Computed Tomography (p. 89)
- Performing Patellofemoral CT
- Determining Subluxation and Tilt Using Tomographic Images (p. 94)
- **Arthrography** (p. 97)
- Patellofemoral Radiographic Evaluation in Children (p. 98)
- Birth to 5 Years
- Five to Eleven Years
- After 11 Years
- Magnetic Resonance Imaging (p. 100)
- **Radionuclide Imaging** (p. 102)
- Other Imaging Techniques (p. 103)
- Practical Algorithm for Imaging the Patellofemoral Joint (p. 104)
- 5. Arthroscopy of the Patellofemoral Joint (p. 107)
- Basic Setup and Technique (p. 107)
- Classification of Articular Lesions (p. 114)
- Arthroscopic Debridement (p. 118)
- Arthroscopic Lateral Release (p. 119)
- Arthroscopic Medial Imbrication (p. 122)
- Arthroscopic Arthroplasty (p. 122)
- Symptomatic Plica and Synovial Resection (p. 125)
- **Summary** (p. 127)
- **6. Dysplasias** (p. 129)
- Patellar Dysplasias (p. 129)
- Aplasia
- Hypoplasia
- Partial Hypoplasia
- Patella Fragmentation
- Marginal Patellar Defects
- Patellar Reduplication
- Hyperplasia or Patella Magna
- Superior and Inferior Patella Malposition (p. 137)
- Patella Alta
- Patella Baja or Infera

- Trochlear Dysplasias (p. 139)
- Hypoplasia of the Medial Condyle
- Aplasia of the Medial Trochlea
- Global Dystrophy of the Trochlea
- **Soft-Tissue Dysplasia** (p. 141)
- 7. Nonarthritic Anterior Knee Pain (p. 143)
- Clinical Features (p. 144)
- Symptoms
- Physical Findings
- **Retinacular Pain** (p. 149)
- Plica or Synovitis (p. 150)
- Patellar Tendinitis (Jumper's Knee) (p. 151)
- Prepatellar Bursitis
- Retropatellar Tendon Bursitis
- Pes Anserinus Bursitis
- Fat Pad Syndrome
- Meniscal Lesions (p. 153)
- Cruciate Ligament Deficiency and Reconstruction (p. 154)
- **Hemangioma** (p. 154)
- **Runners' Knee** (p. 154)
- Iliotibial Friction Band Syndrome (p. 155)
- **Referred Pain** (p. 155)
- Rehabilitation of Soft-Tissue Problems (p. 155)
- 8. Patellar Tilt Compression and the Excessive Lateral Pressure Syndrome (p. 160)
- Clinical Features (p. 160)
- Signs and Symptoms
- Natural History of the Tilt Compression Syndrome (p. 163)
- Radiographic Features (p. 165)
- Axial View Arthrography
- CT and MRI
- Indirect Signs of Excessive Pressure
- **Etiology** (p. 170)
- Excessive Lateral Ligamentous Tension
- Causes of Excessive Lateral Ligamentous Tension
- Disruption of Medial Stabilizers
- Residual Retinacular Band
- Treatment of Patients with Tilt Compression (Nonoperative)
- Lateral Release for the Patient with Tilt Compression Syndrome (p. 177)
- Technique of Lateral Retinacular Release (p. 178)
- Complications of Lateral Retinacular Release
- Case Histories (p. 180)
- Patient 1 (32-Year-Old Female Hairdresser)
- Patient 2 (16-Year-Old Girl)
- Patient 3 (30-Year-Old Man)
- Patient 4 (27-Year-Old Woman)
- **9. Patellar Subluxation** (p. 185)

- Types of Subluxation (Translation) (p. 185)
- Minor Recurrent Lateral Subluxation
- Major Recurrent Lateral Subluxation
- Persistent Lateral Patella Displacement
- **Etiology** (p. 186)
- Congenital Subluxation
- Secondary Subluxation
- Natural History
- Clinical Features of Subluxation (p. 190)
- History
- Physical Findings
- Diagnosis
- Radiologic Features
- **Treatment** (p. 198)
- Nonoperative Treatment
- Operative Treatment
- **10. Patellar Dislocation** (p. 211)
- Etiology of Patellar Dislocation (p. 212)
- Bony Abnormalities
- Soft-Tissue Abnormalities
- Direct Patellar Trauma Without Dislocation (p. 215)
- Acute Patellar Dislocation (p. 216)
- Clinical Picture
- Radiologic Features
- Pathoanatomy
- Treatment
- Fulkerson's Approach to Acute Patellar Dislocation
- Recurrent Patellar Dislocation (p. 220)
- Clinical Features
- Radiologic Features
- Treatment
- Permanent Patellar Dislocation (p. 226)
- Congenital Form
- Acquired Form
- Etiology
- Clinical Features
- Radiologic Features
- Treatment
- 11. Articular Cartilage Lesions in Patellofemoral Pain Patients (p. 239)
- Historical Review (p. 239)
- Neurotrophins and Patellofemoral Pain (p. 240)
- Patellar Articular Cartilage Breakdown (p. 241)
- Anatomic Aspects of Patellar Cartilage Breakdown (p. 244)
- Closed Chondromalacia
- Open Chondromalacia
- Chondrosclerosis

- Tuft Formation
- Superficial Surface Changes
- Global Chondromalacia
- Outerbridge Classification
- Location of Lesions (p. 250)
- Microscopic Aspects of Patellar Articular Cartilage Degeneration (p. 253)
- Closed Chondromalacia
- Open Chondromalacia
- Chondrosclerosis
- Mechanical Pathogenesis of Arthrosis (p. 274)
- Origin of Arthrosis: Its Mechanical Nature
- Initiation of Arthrosis
- Patellar Articular Cartilage Healing
- Articular Cartilage Lesions in the Patient with Chronic Patellar Tilt (p. 279)
- Articular Cartilage Lesions Related to Patellar Subluxation (p. 280)
- Clinical Features--Chondromalacia Related to Malalignment (p. 281)
- Trauma and Infrapatellar Contracture
- Symptoms and Physical Findings in Patient with Chondromalacia-Arthrosis (p. 282)
- Clinical Forms
- Radiologic Features
- Osteochondritis Dissecans and Osteonecrosis (p. 288)
- 12. Nonoperative Treatment (p. 292)
- Planning Treatment (p. 292)
- Malposition
- Chondrosis-Arthrosis
- Retinacular Pain
- Plica
- Synovitis
- Muscle-Tendon Pain
- Referred Pain
- Forms of Treatment (p. 303)
- Injection
- Compartment Syndrome Treatment
- Home Therapy
- Physical Therapy
- **Rehabilitation** (p. 306)
- Kinetic Chain Mobilization, Alignment, and Proprioception
- Stretching the Kinetic Chain
- Patellofemoral Taping
- Strengthening
- Braces
- Activity Modification
- 13. Surgical Treatment of Patellofemoral Articular Lesions (p. 318)
- Patellofemoral Arthroscopy (p. 319)
- Patellofemoral Reconstruction (p. 321)
- Selecting Appropriate Patients for Lateral Release

- Anteromedial Tibial Tubercle Transfer
- Other Surgical Alternatives for the Patient with Patellar Arthrosis (p. 344)
- Patellectomy
- Tibial Tubercle Anteriorization with Bone Graft
- Cellular Resurfacing
- Infrapatellar Contracture Syndrome
- Patellofemoral Replacement
- Patellofemoral Joint Resurfacing in Knee Joint Replacement Surgery (p. 355)
- Osteotomy of the Patella
- Anterolateral Transfer of the Tibial Tubercle
- **Subject Index** (p. 363)