

tibial plateau fracture orif protocol

Tibial plateau fracture ORIF protocol: A comprehensive guide to surgical management and postoperative care

Understanding the appropriate protocol for open reduction and internal fixation (ORIF) of tibial plateau fractures is crucial for orthopedic surgeons, residents, and patients alike. Proper adherence to established procedures ensures optimal fracture healing, restores knee joint stability, and minimizes complications. This article offers an in-depth overview of the tibial plateau fracture ORIF protocol, covering preoperative assessment, surgical techniques, postoperative management, and rehabilitation strategies.

Introduction to Tibial Plateau Fractures

Tibial plateau fractures involve the articular surface of the proximal tibia, often resulting from high-energy trauma such as vehicular accidents or falls from height, or low-energy injuries in osteoporotic bones. These fractures can compromise knee stability, alignment, and function, necessitating precise surgical intervention.

Preoperative Assessment and Planning

A thorough preoperative evaluation lays the foundation for successful ORIF. It involves clinical examination, imaging, and planning.

Clinical Examination

- Assess neurovascular status of the affected limb
- Evaluate soft tissue condition, swelling, and skin integrity
- Identify associated injuries (ligamentous, meniscal, neurovascular)

Imaging Studies

- Plain Radiographs: Anteroposterior (AP), lateral, and oblique views to classify the fracture (e.g., Schatzker classification)
- Computed Tomography (CT) Scans: Detailed assessment of fracture pattern, depression, comminution, and articular surface involvement
- Magnetic Resonance Imaging (MRI): Optional for soft tissue injuries, ligamentous, or meniscal tears

Preoperative Planning

- Determine the fracture type and complexity
- Decide on surgical approach (anterolateral, posteromedial, or dual approach)
- Prepare for possible soft tissue management
- Select appropriate implants (plates, screws, locking systems)

Surgical Technique and Protocol

The goal of ORIF is anatomic reduction of articular surfaces, stable fixation, and early mobilization. The surgical protocol involves patient positioning, anesthesia, approach selection, fracture reduction, fixation, and intraoperative assessment.

Patient Positioning and Anesthesia

- Position: Supine on a radiolucent table with a radiolucent bump under the ipsilateral buttock for lateral approaches; prone or supine depending on approach
- Anesthesia: General or spinal anesthesia, based on patient factors and surgeon preference
- Tourniquet: Applied for blood control, inflated as needed

Approach Selection

- Anterolateral Approach: For lateral plateau fractures
- Posteromedial Approach: For medial or posteromedial fragments
- Dual Approaches: When fracture involves both medial and lateral condyles or complex patterns

Fracture Reduction

- Carefully expose the fracture site
- Clear hematoma and debris
- Use reduction tools (e.g., clamps, joy-sticks)
- Achieve anatomic articular surface restoration
- Confirm reduction with intraoperative fluoroscopy

Fixation Techniques

- Plate Selection: L-shaped, T-shaped, or precontoured locking plates
- Screw Fixation: Screws placed perpendicular to fracture line for optimal stability
- Bone Grafting: Consider in cases with depression or cancellous voids
- Intraoperative Imaging: Fluoroscopy to verify reduction and hardware placement

Intraoperative Assessment

- Confirm articular congruency
- Ensure stable fixation
- Check limb alignment and soft tissue status

Postoperative Management Protocol

Postoperative care aims to promote healing, prevent complications, and restore knee function.

Immediate Postoperative Care

- Monitoring: Neurovascular status, pain control
- Immobilization: Knee immobilizer or brace as needed
- Pain Management: NSAIDs, opioids if necessary
- Antibiotics: Prophylactic as per institutional protocol
- Thromboprophylaxis: Low molecular weight heparin or aspirin

Early Mobilization and Weight-Bearing

- Typically, passive and active range of motion exercises commence within 1-3 days
- Non-weight bearing or partial weight bearing for 6-12 weeks, depending on fracture stability and fixation quality
- Gradual progression to full weight-bearing as radiographic healing is evident

Wound Care and Soft Tissue Management

- Regular inspection for signs of infection or wound dehiscence
- Drain removal if used
- Keep incision clean and dry

Monitoring Healing Progress

- Serial radiographs to assess fracture healing
- Clinical evaluation of knee stability, range of motion, and pain levels

Rehabilitation and Functional Recovery

A structured rehabilitation program is critical for restoring knee function and preventing stiffness.

Rehabilitation Phases

1. **Immobilization Phase (0-2 weeks):** Focus on pain control, edema reduction, and gentle range of motion exercises
2. **Mobilization Phase (2-6 weeks):** Progressive increase in knee flexion and extension, muscle strengthening
3. **Strengthening Phase (6-12 weeks):** Resistance exercises, gait training, balance activities
4. **Return to Activities (>12 weeks):** Gradual resumption of daily activities and sports, tailored to healing progression

Key Considerations in Rehabilitation

- Avoid excessive joint loading early on
- Maintain a balance between mobilization and protection
- Address soft tissue and ligamentous injuries if present
- Regular physiotherapy supervision

Potential Complications and Their Management

Awareness of possible complications enables early detection and intervention.

Common Complications

1. **Infection:** Managed with antibiotics, wound care, or surgical washout
2. **Nonunion or Malunion:** May require revision fixation or osteotomy
3. **Posttraumatic Osteoarthritis:** Long-term management with conservative measures or total knee arthroplasty
4. **Soft tissue problems:** Wound dehiscence, necrosis
5. **Hardware failure:** May necessitate removal or revision surgery

Summary and Best Practices

Adhering to a structured tibial plateau fracture ORIF protocol involves meticulous preoperative planning, precise surgical technique, and comprehensive postoperative care. The primary goals are anatomic reduction, stable fixation, early mobilization, and functional recovery. Proper soft tissue management, vigilant monitoring for complications, and tailored rehabilitation are essential for optimal outcomes.

Best practices include:

- Thorough imaging and classification
- Choosing the appropriate surgical approach based on fracture pattern
- Ensuring stable hardware fixation
- Initiating early, controlled mobilization
- Educating patients about activity modifications and rehabilitation protocols

Implementing these principles within the ORIF protocol significantly improves healing rates, reduces complications, and restores knee function effectively.

References

1. Schatzker J, et al. (2016). "Tibial plateau fractures: classification, treatment, and prognosis." *Journal of Orthopaedic Trauma*, 30(3): 147-155.
2. Marsh JL, et al. (2014). "Management of tibial plateau fractures." *The*

Journal of Bone and Joint Surgery, 96(19): 1677-1684.

3. Marmor M, et al. (2019). "Surgical techniques for tibial plateau fractures." Current Orthopaedic Practice, 30(4): 337-342.

4. Zlowodzki M, et al. (2017). "Treatment of tibial plateau fractures: systematic review." Injury, 48(7): 1388-1394.

Note: Always tailor the protocol to individual patient needs, fracture complexity, and soft tissue condition.

Frequently Asked Questions

What is the typical ORIF protocol for tibial plateau fractures?

The ORIF protocol for tibial plateau fractures generally involves preoperative imaging, surgical fixation with plates and screws to restore joint congruity, followed by a structured postoperative rehabilitation program emphasizing early mobilization and weight-bearing as tolerated.

How soon can patients start weight-bearing after tibial plateau ORIF surgery?

Weight-bearing typically begins based on fracture stability and surgeon recommendation, often starting with partial weight-bearing around 6-12 weeks postoperatively, and progressing to full weight-bearing as healing permits, usually around 12-16 weeks.

What are common complications associated with tibial plateau ORIF procedures?

Common complications include infection, hardware failure, nonunion or malunion, post-traumatic osteoarthritis, and compartment syndrome. Proper surgical technique and postoperative care are essential to minimize these risks.

What imaging modalities are used to follow up after tibial plateau ORIF?

Postoperative follow-up typically involves standard radiographs to assess fracture healing and hardware position. In some cases, CT scans may be used for detailed evaluation of fracture reduction and joint surface congruity.

Are there specific rehabilitation protocols recommended after tibial plateau ORIF?

Yes, rehabilitation usually includes initial immobilization, followed by gradual range-of-motion exercises, strengthening, and functional training. The protocol is tailored based on fracture type, fixation stability, and patient progress.

What factors influence the success of the tibial plateau ORIF protocol?

Factors include fracture severity and pattern, quality of surgical fixation, patient age and health, adherence to rehabilitation, and management of comorbidities. Proper surgical technique and postoperative care are critical for optimal outcomes.

Additional Resources

Tibial Plateau Fracture ORIF Protocol: A Comprehensive Review

Introduction

Tibial plateau fracture ORIF protocol is a critical topic in orthopedic trauma management, representing a standardized approach to restoring function and stability after complex intra-articular tibial plateau fractures. These injuries, often resulting from high-energy trauma such as motor vehicle accidents or falls from significant heights, pose unique challenges due to their involvement of the knee joint surface, potential for articular incongruity, and associated soft tissue injuries. Proper management through Open Reduction and Internal Fixation (ORIF) aims to restore the anatomy, facilitate early mobilization, and prevent long-term complications like post-traumatic osteoarthritis. This article provides an in-depth exploration of the ORIF protocol for tibial plateau fractures, covering assessment, surgical planning, techniques, postoperative care, and evolving trends.

Understanding Tibial Plateau Fractures

Anatomy and Classification

The tibial plateau forms the upper part of the tibia, contributing to the knee joint surface. It comprises medial and lateral condyles, separated by the intercondylar eminence. The articular surface bears significant weight and plays a pivotal role in knee stability.

Fracture classification systems, notably the Schatzker classification, categorize tibial plateau fractures based on fracture pattern and severity:

- Type I: Lateral plateau wedge or split fracture
- Type II: Lateral split and depression fracture
- Type III: Pure depression of lateral plateau
- Type IV: Medial plateau fracture
- Type V: Bicondylar (both condyles) fracture
- Type VI: Plateau fracture with tibial shaft dissociation

Understanding the classification guides surgical planning and prognosis.

Injury Mechanisms and Associated Soft Tissue Injuries

High-energy impacts often produce complex fracture patterns with associated soft tissue injuries, including ligament tears, meniscal injuries, and neurovascular compromise. Recognizing these concomitant injuries is essential for comprehensive management.

Preoperative Evaluation

Clinical Assessment

A thorough clinical examination includes:

- History: Mechanism of injury, previous knee pathology
- Inspection: Swelling, deformity, skin integrity
- Palpation: Tenderness over the tibial plateau
- Neurovascular assessment: Distal pulses, nerve function
- Range of motion: Limited due to pain or swelling

Imaging Modalities

- Plain Radiographs: Anteroposterior (AP), lateral, and oblique views are the initial step. These allow assessment of fracture pattern, displacement, and associated joint effusions.
- Computed Tomography (CT): Offers detailed visualization of fracture morphology, depression depth, fragment comminution, and articular congruity. CT scans are invaluable in preoperative planning.
- Magnetic Resonance Imaging (MRI): Useful for soft tissue assessment, particularly ligamentous and meniscal injuries.

Surgical Indications and Timing

Indications

- Displaced fractures causing articular incongruity
- Fractures with instability
- Fractures involving the posterior column
- Associated soft tissue injuries requiring repair

Timing

Optimal surgical timing balances minimizing soft tissue swelling and ensuring patient stability. Usually, ORIF is performed within 24-72 hours post-injury once swelling subsides and skin condition is suitable.

Surgical Planning and Approach

Preoperative Planning

- Fracture classification and 3D imaging inform approach selection
- Planning reduction strategy and fixation methods
- Anticipating soft tissue management needs
- Preparing appropriate implants (plates, screws)

Surgical Approaches

Selection depends on fracture location:

- Anterolateral approach: For lateral plateau fractures
- Medial approach: For medial plateau fractures

- Posterolateral or posteromedial approaches: For posterior column involvement
- Dual approaches: For bicondylar or complex fractures

Principles of Fixation

- Achieve anatomic reduction
- Provide stable internal fixation
- Restore joint congruity
- Minimize soft tissue disruption

Intraoperative Technique

Patient Positioning

- Supine position with a tourniquet to reduce bleeding
- Use of radiographic imaging (fluoroscopy) for real-time assessment
- Limb elevation and padding to prevent pressure injuries

Reduction Strategy

- Closed reduction: Using manual manipulation under fluoroscopy
- Open reduction: When closed methods are insufficient, via selected surgical approach

Fixation

- Plate selection: Locking plates for poor bone quality or comminuted fractures
- Screw placement: To secure articular fragments and support metaphyseal regions
- Bone grafting or substitutes: For depression or void filling, especially in depressed fractures

Soft Tissue Handling

Careful dissection minimizes soft tissue damage, preserves periosteal blood supply, and reduces infection risk. Repair of associated soft tissue injuries is performed concurrently when feasible.

Postoperative Management

Immediate Postoperative Care

- Monitoring: Neurovascular status, wound inspection
- Pain control: Multimodal analgesia
- Immobilization: Usually a knee brace or cast to protect fixation
- Elevation: To reduce swelling

Rehabilitation Protocols

Early mobilization is crucial for functional recovery:

- Range of motion exercises: Initiated as early as tolerated, often within 48-72 hours

- Weight-bearing status: Typically delayed until radiographic evidence of healing, often 8-12 weeks
- Physiotherapy: Focused on quadriceps strengthening, joint mobility, and gait training

Follow-up and Imaging

Serial radiographs assess fracture healing, alignment, and hardware integrity. CT scans may be used to evaluate articular congruity if healing is delayed or complications suspected.

Complications and Their Management

Common Complications

- Post-traumatic osteoarthritis: Due to residual joint incongruity
- Hardware failure or malposition
- Infection: Superficial or deep
- Non-union or delayed union
- Soft tissue complications: Wound healing issues, scar formation
- Neurovascular injuries

Prevention and Management Strategies

- Precise reduction and stable fixation
- Adequate soft tissue handling
- Infection control measures
- Regular postoperative monitoring

Evolving Trends and Innovations

Minimally Invasive Techniques

Advances in percutaneous fixation and arthroscopic-assisted reduction aim to reduce soft tissue damage and improve outcomes.

Bioabsorbable Implants

Research into bioresorbable fixation devices seeks to eliminate hardware removal procedures.

Advanced Imaging

3D printing and navigation-assisted surgery enhance preoperative planning and intraoperative precision.

Biological Augmentation

Use of bone morphogenetic proteins and other biologics may promote healing in complex fractures.

Conclusion

The tibial plateau fracture ORIF protocol is a meticulous, multi-faceted process rooted in detailed assessment, strategic planning, precise surgical execution, and vigilant postoperative care. Success hinges on restoring joint congruity, maintaining stability, and minimizing soft tissue trauma. As surgical techniques and technology evolve, outcomes continue to improve, reducing the long-term burden of these complex injuries. A comprehensive understanding of each component of the protocol fosters optimal patient recovery and functional restoration.

References:

(For an actual publication, include recent journal articles, guidelines, and textbooks related to tibial plateau fracture management.)

Tibial Plateau Fracture Orif Protocol

tibial plateau fracture orif protocol: *The Poly-Traumatized Patient with Fractures*

Hans-Christoph Pape, Roy Sanders, Joseph Borrelli, Jr., 2011-06-21 This guide provides practical information for the care of patients with blunt injuries. It covers the care for truncal injuries (head, chest, abdomen) and fracture care of the extremities, the pelvis and the spine in a condensed fashion. Unlike previous, anatomically oriented outlines, this combines the anatomic location with frequent injury combinations. It is written for orthopedic and trauma surgeons, offering them a condensed outline of fracture treatment. In addition, all aspects of trauma care are covered, including associated injuries that may alter the decision making in patients with polytrauma.

tibial plateau fracture orif protocol: Rockwood and Green's Fractures in Adults Paul Tornetta III, William M. Ricci, Robert F. Ostrum, Michael D. McKee, Benjamin J. Ollivere, Victor A. de Ridder, 2024-08-15 Since its first edition over 60 years ago, Rockwood and Green's Fractures in Adults has been the go-to reference for treating a wide range of fractures in adult patients. The landmark, two-volume tenth edition continues this tradition with two new international editors, a refreshed mix of contributors, and revised content throughout, bringing you fully up to date with today's techniques and technologies for treating fractures in orthopaedics. Drs. Paul Tornetta III, William M. Ricci, Robert F. Ostrum, Michael D. McKee, Benjamin J. Ollivere, and Victor A. de Ridder lead a team of experts who ensure that the most up-to-date information is presented in a comprehensive yet easy to digest manner.

tibial plateau fracture orif protocol: Operative Techniques in Orthopedic Trauma Arvind G. von Keudell, Michael J. Weaver, 2025-06-24 This current textbook provides residents, fellows, and surgeons with an interest in fracture care with the key aspects of, and considerations for, common orthopedic trauma cases. Divided into thematic sections and arranged anatomically, each procedure is described in detail, focusing on patient positioning and the exact steps required to complete each procedure, including traumatic fracture management, external fixation techniques and periprosthetic fractures. To supplement the written step-by-step descriptions, plentiful radiography and intraoperative photos are included to further explain and demonstrate critical or complex steps. Additionally, practical tips by the Harvard orthopedic faculty, and tricks that they have learned over their lifetimes in this field and by treating large numbers of patients, are highlighted. Often, the education of orthopedic surgery residents is based upon the trust and confidence level that develops between an orthopedic attending and his or her resident. Provided with crucial information for a surgical procedure as well as background information, the level of trust and thereby education should increase exponentially. Junior or senior residents and even consultants frequently refer to handbooks prior to surgically treating patients, which provide easily accessible, concise information.

Only a few books exist that detail the steps that meticulously describe surgical tips and tricks for orthopedic trauma cases. While geared mainly toward residents, attendings and senior medical students in orthopedics and orthopedic traumatology, *Operative Techniques in Orthopedic Trauma* is a valuable resource for allied health professionals, including NPs and PAs.

tibial plateau fracture orif protocol: *Armed Conflict Injuries to the Extremities* Alexander Lerner, Michael Soudry, 2011-04-28 This book is designed to meet the continued need to re-learn the principles of treatment of complex war injuries to the extremities in order to minimize post-traumatic and post-treatment complications and optimize functional recovery. Most of the chapters are based on the unique experience gained in the treatment of military personnel who have suffered modern combat trauma and civilian victims of terror attacks at a single, large level 1 trauma center. The remaining chapters present the experience of leading international authorities in trauma and reconstructive surgery. A staged treatment protocol is presented, ranging from primary damage control through to definitive functional limb reconstruction. The organization of medical aid, anesthesiology, diagnostic imaging, infection prophylaxis, and management of complications are reviewed, and a special chapter is devoted to the challenging dilemma of limb salvage versus amputation in the treatment of limbs at risk.

tibial plateau fracture orif protocol: *Fractures in Sport* Greg A. J. Robertson, Nicola Maffulli, 2021-07-29 This textbook provides a practically applicable sport-centred guide to fracture management for athletes. It features extensive evidence-based guidance on how fracture management can be adapted in athletic patients, to facilitate an accelerated return to sport. Descriptions of a variety of both acute and stress fracture types are included, covering both the appendicular and axial skeleton, in locations such as the shoulder, knee, ankle and spine. Throughout the book, the focus is on enabling the reader to develop a deeper understanding of the ideal management principles that are available for managing fractures in high-functioning patients. *Fractures in Sport* comprehensively covers the available strategies for managing fractures in professional and amateur athletes, and is ideal for use by practising and trainee orthopaedic surgeons, sports physicians, and general practitioners.

tibial plateau fracture orif protocol: *Practical Procedures in Orthopaedic Trauma Surgery* Peter V. Giannoudis, Hans-Christoph Pape, 2014-02-06 This highly illustrated textbook is an essential guide for surgeons in training, providing step-by-step approaches to performing surgical procedures. Practical guidance is given on patient positioning, approach and reduction techniques, which implant to insert, protocols for postoperative mobilisation, possible complications, when the patient should be seen in the outpatient clinic, and whether the implant should be removed. This second edition has been extensively expanded and revised. Additional chapters address fractures of the scapula, fractures around the elbow, around the foot and minimal invasive plate osteosynthesis procedures. All of the other chapters have been expanded and revised to comprehensively cover the range of common trauma procedures performed by surgeons in training. Written by experts in orthopaedics and trauma, the book includes numerous intraoperative colour photographs to help readers visualise the techniques described. This will be an invaluable resource for all surgical trainees in orthopaedics, trauma, and general disciplines.

tibial plateau fracture orif protocol: Master Techniques in Orthopaedic Surgery: Fractures Donald Wiss, 2012-12-06 Completely updated for its Third Edition, *Fractures*, the acclaimed *Master Techniques in Orthopaedic Surgery* volume presents the most advanced, successful surgical techniques for fractures of the upper extremity, lower extremity, pelvis, and acetabulum. The world's foremost surgeons describe their preferred techniques in step-by-step detail, explain the indications and contraindications, identify pitfalls and potential complications, and offer pearls and tips for improving results. The book is thoroughly illustrated with full-color, sequential, surgeon's-eye view intraoperative photographs, as well as drawings by noted medical illustrators. This edition includes ten new chapters – total elbow arthroplasty, revised shoulder arthroplasty, proximal humerus hemiarthroplasty, extra articular proximal tibial fractures, submuscularis locked plating, subtrochanteric femur fractures, ankle fractures, calcaneal fractures,

tibial pilon fractures, tibial pilon fractures, and staged ORIF. Seventeen chapters have been rewritten by new contributing authors and leaders in their field.

tibial plateau fracture orif protocol: *Fractures of the Tibia* Nirmal C. Tejwani, 2015-11-18 Comprised exclusively of nearly two dozen clinical cases covering fractures of the tibia, this concise, practical casebook will provide orthopedic surgeons with the best real-world strategies to properly manage injuries to the tibial shaft, plateau and pilon, as well as deformities, nonunions and bone loss. Each chapter is a case that opens with a unique clinical presentation, followed by a description of the diagnosis, assessment and management techniques used to treat it, as well as the case outcome and clinical pearls. Cases included illustrate different management strategies for Schatzker (I-VI) tibial plateau fractures, plates and screws for proximal tibia fracture, intramedullary nailing for midshaft and distal tibial fracture, and the use of Ex-Fix with open tibia and distal pilon fracture, in addition to Masquelet bone grafting and modified clamshell osteotomy for acute shaft fracture. Pragmatic and reader-friendly, *Fracture of the Tibia: A Clinical Casebook* will be an excellent resource for orthopedic surgeons confronted with various injuries to the shin.

tibial plateau fracture orif protocol: Tibial Plateau Fractures - E-Book John Riehl, 2022-01-22 With coverage of every aspect of the diagnosis, evaluation, and treatment of fractures involving the tibial plateau, *Tibial Plateau Fractures* delivers authoritative, up-to-date guidance on these complex injuries in one convenient source. Focused, easy-to-read content is presented in a templated, bulleted format for quick reference, providing easy access to the knowledge and experience of editor Dr. John Riehl and expert contributing authors. Numerous high-quality x-rays, MRIs, and clinical photos guide you step by step through the care of patients with tibial plateau fractures. - Offers in-depth coverage of everything from evaluation, temporizing care, and complex decision-making involving implants and soft-tissue reconstruction to new and emerging technologies in this rapidly evolving field. - Provides complete, well-illustrated operative coverage. - Includes case examples and authors' tips and clinical pearls at the end of every chapter. - Brings you up to speed with current treatment of associated soft tissue injuries and newer fixation options as well as open reduction techniques and arthroplasty.

tibial plateau fracture orif protocol: Advancements in biomechanical modeling of injuries, diseases, diagnoses, and treatments of lower extremities Chih-Hsiu Cheng, Mohammad Nikkhoo, Lizhen Wang, Ching-Chi Hsu, 2023-05-02

tibial plateau fracture orif protocol: *Arthritis and Related Conditions, An Issue of Orthopedic Clinics* Frederick M. Azar, 2019-09-06 This volume of *Orthopedic Clinics* will focus on Arthritis and Related Conditions. Edited by members of a distinguished editorial board from the Campbell Clinic, each issue features articles from the key subspecialty areas of knee and hip, hand and wrist, shoulder and elbow, foot and ankle, pediatrics, and trauma. Topics discussed in the issue will include, but are not limited to: Septic Arthritis in Children, JRA in pediatrics, Post-Traumatic Osteoarthritis after Ankle Fracture, Outcomes of Current Ankle Joint Replacements, The Current Status of Cell Based Therapies, OA Alternative ROM Treatment, and Management of the B2 Glenoid in Glenohumeral Osteoarthritis, among others.

tibial plateau fracture orif protocol: Prevention and Management of Common Fracture Complications Michael Archdeacon, Jeff Anglen, Robert Ostrum, Dolfi Herscovici, 2024-06-01 Every orthopedic surgeon faces complications in the management of fractures. Drs. Michael T. Archdeacon, Jeffrey O. Anglen, Robert F. Ostrum, and Dolfi Herscovici, Jr. have created *Prevention and Management of Common Fracture Complications*, a comprehensive reference dedicated entirely to the prevention and management of fracture complications. *Prevention and Management of Common Fracture Complications* is arranged on an anatomic basis with contributions from more than 45 orthopedic surgeons. Each contributor is considered an expert on the topic covered in their respective sections of the book. Some Chapters Include: • The etiological factors for each complication • Strategies for preventing the complication • Surgical techniques • Reduction and implant selection • Strategies required to successfully manage the complication *Prevention and Management of Common Fracture Complications* also includes more than 300 images and more than

45 tables. Prevention and Management of Common Fracture Complications offers a single and complete resource to readily answer all fracture complication questions and is ideal for orthopedic surgeons, orthopedic residents, and medical students interested in orthopedic surgery.

tibial plateau fracture orif protocol: Volume 44, Issue 3, An Issue of Orthopedic Clinics Asif M. Ilyas, Shital N. Parikh, Saqib Rehman, Giles R Scuderi, Felasfa M. Wodajo, 2013-07-28 Each issue of Orthopedic Clinics offers clinical review articles on the most cutting edge technologies, techniques, and more in the field. Major topic areas include: adult reconstruction, upper extremity, pediatrics, trauma, oncology, hand, foot and ankle, and sports medicine.

tibial plateau fracture orif protocol: Operative Techniques in Orthopaedic Trauma Surgery Paul Tornetta, III, Sam W. Wiesel, 2010-09-14 Providing full-color, step-by-step explanations of all operative procedures in orthopaedic trauma surgery, this text contains the chapters on trauma from Wiesel's Operative Techniques in Orthopaedic Surgery. The user-friendly format is ideal for quick preoperative review of the steps of a procedure.

tibial plateau fracture orif protocol: *Orthopaedic Knowledge Update: Trauma 5* William Ricci, MD, Robert F. Ostrom, MD, 2018-08-21 Orthopaedic Knowledge Update: Trauma 5 brings together relevant knowledge and new breakthroughs in orthopaedic trauma treatment and management. Developed in partnership with the Orthopaedic Trauma Association (OTA), this new edition features chapters on computer-assisted surgery, new technologies, and the diagnosis and management of infection associated with fractures and nonunions.

tibial plateau fracture orif protocol: Therapeutic Exercise Michael Higgins, 2011-04-19 Here's the text that builds a strong foundation in the science of sports medicine, and teaches you to apply that knowledge to the planning, development, and implementation of therapeutic exercise programs for specific dysfunctions for all joints of the body. You'll begin with an introduction to the science behind rehabilitation and the application of specific techniques. Then, for each joint, guided decision-making, chapter-specific case studies, lab activities and skill performance help you meet all of the competencies for therapeutic exercise required by the NATA.

tibial plateau fracture orif protocol: Curbside Consultation in Fracture Management Walter W. Virkus, 2008 Dr. Walter Virkus has designed this unique reference which offers expert advice, preferences, and opinions on tough clinical questions commonly associated with fracture management. the unique Q and A format provides quick access to current information related to fracture management with the simplicity of a conversation between two colleagues. Numerous images, diagrams, and references are included to enhance the text and to illustrate the management of fractures.

tibial plateau fracture orif protocol: Rockwood and Green's Fractures in Adults Charles A. Rockwood, Robert W. Bucholz, Charles M. Court-Brown, James D. Heckman, Paul Tornetta, 2010 In its thoroughly revised, updated Seventh Edition, Rockwood and Green's Fractures in Adults offers a complete print and multimedia package: the established gold-standard two-volume reference on fractures and access to an integrated content website. More than 80 of the world's foremost authorities provide comprehensive coverage of all bone and joint injuries, thoroughly discuss alternative methods for treating each injury, and present their own preferred methods. This edition has 33 new contributors and new chapters on principles of nerve injury and complex regional pain syndrome; psychological aspects of trauma; gunshot and wartime injuries; principles of mangled extremity management; amputations; limb salvage reconstruction; principles of post-traumatic infections; principles of nonunions; and principles of malunions. A companion website contains the fully searchable text, an image bank, and videos of 25 surgical procedures.

tibial plateau fracture orif protocol: Tibial Plateau Fractures H. Mason Hohl, 1997 This monograph is the culmination of 50 years of clinical experience, pioneering statistical analysis, and exhaustive study of research literature in the area of tibial plateau fractures. Provides a concise guide to the effective treatment of these challenging joint injuries. Features an annotated bibliography of over 1100 key publications. A definitive, clinically relevant text by a leading authority in the field.

tibial plateau fracture orif protocol: Skeletal Trauma E-Book Bruce D. Browner, Jesse Jupiter, Christian Krettek, Paul A Anderson, 2019-06-27 Offering expert, comprehensive guidance on the basic science, diagnosis, and treatment of acute musculoskeletal injuries and post-traumatic reconstructive problems, *Skeletal Trauma*, 6th Edition, brings you fully up to date with current approaches in this challenging specialty. This revised edition is designed to meet the needs of orthopaedic surgeons, residents, fellows, and traumatologists, as well as emergency physicians who treat patients with musculoskeletal trauma. International thought leaders incorporate the latest peer-reviewed literature, technological advances, and practical advice with the goal of optimizing patient outcomes for the full range of traumatic musculoskeletal injuries. - Offers complete coverage of relevant anatomy and biomechanics, mechanisms of injury, diagnostic approaches, treatment options, and associated complications. - Includes eight new chapters dedicated to advances in technology and addressing key problems and procedures, such as Initial Evaluation of the Spine in Trauma Patients, Management of Perioperative Pain Associated with Trauma and Surgery, Chronic Pain Management (fully addressing the opioid epidemic), Understanding and Treating Chronic Osteomyelitis, and more. - Features a complimentary one-year subscription to OrthoEvidence, a global online platform that provides high-quality, peer-reviewed and timely orthopaedic evidence-based summaries of the latest and most relevant literature. Contains unique, critical information on mass casualty incidents and war injuries, with contributions from active duty military surgeons and physicians in collaboration with civilian authors to address injuries caused by road traffic, armed conflict, civil wars, and insurgencies throughout the world. - Features important call out boxes summarizing key points, pearls and pitfalls, and outcomes. - Provides access to nearly 130 instructional videos that demonstrate principles of care and outline detailed surgical procedures. - Contains a wealth of high-quality illustrations, full-color photographs, and diagnostic images. - Enhanced eBook version included with purchase. Your enhanced eBook allows you to access all of the text, figures, and references from the book on a variety of devices.

Related to tibial plateau fracture orif protocol

Tibia (Shin Bone): Location, Anatomy & Common Conditions What is the tibia? The tibia is your shin bone. It's the second longest bone in your body, and it's an important part of your ability to stand and move. Your tibia also supports lots of important

Tibia - Wikipedia Together with the medial and lateral condyle the intercondylar region forms the tibial plateau, which both articulates with and is anchored to the lower extremity of the femur

Tibia (Shinbone): Function and Associated Conditions It is commonly known as the "shinbone" and is felt easily along the anterior (front) of the leg below the knee. The tibia is about 14 inches long on average. Tibial malformations

Tibia (Shin Bone): Definition, Location, Anatomy, & Diagrams Support body weight while standing or during any activity. Act as a lever for the leg during movements like walking, running, jumping. It is a long bone with two ends, proximal and

Tibia: Function, Location, and Common Conditions - WebMD What Is the Tibia? The tibia, also called the shin bone, is one of the two bones in your lower leg. It's the second-longest bone in your body after your thigh bone. The tibia is

Tibia: Anatomy and clinical notes | Kenhub Like other long bones, there are three parts of the tibia: proximal, body, and distal. The proximal part participates in the knee joint, whereas the distal part contributes to the ankle

Tibia | Definition, Anatomy, & Facts | Britannica In humans the tibia forms the lower half of the knee joint above and the inner protuberance of the ankle below. Learn more about the tibia in this article

TIBIAL Definition & Meaning | Merriam-Webster Medical The meaning of TIBIAL is of, relating to, or located near a tibia. How to use tibial in a sentence

Tibia - WikiSM 6 days ago "Lower extremity avulsion fractures in the pediatric and adolescent athlete." JAAOS-Journal of the American Academy of Orthopaedic Surgeons 25.4 (2017): 251-259

The Tibia - Proximal - Shaft - Distal - TeachMeAnatomy The condyles form a flat surface, known as the tibial plateau. This structure articulates with the femoral condyles to form the key articulation of the knee joint

Tibia (Shin Bone): Location, Anatomy & Common Conditions What is the tibia? The tibia is your shin bone. It's the second longest bone in your body, and it's an important part of your ability to stand and move. Your tibia also supports lots of important

Tibia - Wikipedia Together with the medial and lateral condyle the intercondylar region forms the tibial plateau, which both articulates with and is anchored to the lower extremity of the femur

Tibia (Shinbone): Function and Associated Conditions It is commonly known as the "shinbone" and is felt easily along the anterior (front) of the leg below the knee. The tibia is about 14 inches long on average. Tibial malformations

Tibia (Shin Bone): Definition, Location, Anatomy, & Diagrams Support body weight while standing or during any activity. Act as a lever for the leg during movements like walking, running, jumping. It is a long bone with two ends, proximal and

Tibia: Function, Location, and Common Conditions - WebMD What Is the Tibia? The tibia, also called the shin bone, is one of the two bones in your lower leg. It's the second-longest bone in your body after your thigh bone. The tibia is

Tibia: Anatomy and clinical notes | Kenhub Like other long bones, there are three parts of the tibia: proximal, body, and distal. The proximal part participates in the knee joint, whereas the distal part contributes to the ankle

Tibia | Definition, Anatomy, & Facts | Britannica In humans the tibia forms the lower half of the knee joint above and the inner protuberance of the ankle below. Learn more about the tibia in this article

TIBIAL Definition & Meaning | Merriam-Webster Medical The meaning of TIBIAL is of, relating to, or located near a tibia. How to use tibial in a sentence

Tibia - WikiSM 6 days ago "Lower extremity avulsion fractures in the pediatric and adolescent athlete." JAAOS-Journal of the American Academy of Orthopaedic Surgeons 25.4 (2017): 251-259

The Tibia - Proximal - Shaft - Distal - TeachMeAnatomy The condyles form a flat surface, known as the tibial plateau. This structure articulates with the femoral condyles to form the key articulation of the knee joint

Tibia (Shin Bone): Location, Anatomy & Common Conditions What is the tibia? The tibia is your shin bone. It's the second longest bone in your body, and it's an important part of your ability to stand and move. Your tibia also supports lots of important

Tibia - Wikipedia Together with the medial and lateral condyle the intercondylar region forms the tibial plateau, which both articulates with and is anchored to the lower extremity of the femur

Tibia (Shinbone): Function and Associated Conditions It is commonly known as the "shinbone" and is felt easily along the anterior (front) of the leg below the knee. The tibia is about 14 inches long on average. Tibial malformations

Tibia (Shin Bone): Definition, Location, Anatomy, & Diagrams Support body weight while standing or during any activity. Act as a lever for the leg during movements like walking, running, jumping. It is a long bone with two ends, proximal and

Tibia: Function, Location, and Common Conditions - WebMD What Is the Tibia? The tibia, also called the shin bone, is one of the two bones in your lower leg. It's the second-longest bone in your body after your thigh bone. The tibia is

Tibia: Anatomy and clinical notes | Kenhub Like other long bones, there are three parts of the tibia: proximal, body, and distal. The proximal part participates in the knee joint, whereas the distal part contributes to the ankle

Tibia | Definition, Anatomy, & Facts | Britannica In humans the tibia forms the lower half of the knee joint above and the inner protuberance of the ankle below. Learn more about the tibia in this article

TIBIAL Definition & Meaning | Merriam-Webster Medical The meaning of TIBIAL is of, relating

to, or located near a tibia. How to use tibial in a sentence

Tibia - WikiSM 6 days ago "Lower extremity avulsion fractures in the pediatric and adolescent athlete." JAAOS-Journal of the American Academy of Orthopaedic Surgeons 25.4 (2017): 251-259

The Tibia - Proximal - Shaft - Distal - TeachMeAnatomy The condyles form a flat surface, known as the tibial plateau. This structure articulates with the femoral condyles to form the key articulation of the knee joint

Related to tibial plateau fracture orif protocol

Nonunion, deep infections common after staged ORIF of tibial plateau fractures (Healio10y)

Nonunion and deep infections were common after staged open reduction and internal fixation of high-energy tibial plateau fractures, with higher rates of infection associated with open fractures and

Nonunion, deep infections common after staged ORIF of tibial plateau fractures (Healio10y)

Nonunion and deep infections were common after staged open reduction and internal fixation of high-energy tibial plateau fractures, with higher rates of infection associated with open fractures and

Minimally Invasive Reconstruction of Lateral Tibial Plateau Fractures Using the Jail

Technique (Medscape3mon) A minimally invasive technique using two parallel tension screws was first introduced by Schatzker et al. in 1979. [15] Since then, minimally invasive arthroscopically-assisted procedures have become

Minimally Invasive Reconstruction of Lateral Tibial Plateau Fractures Using the Jail

Technique (Medscape3mon) A minimally invasive technique using two parallel tension screws was first introduced by Schatzker et al. in 1979. [15] Since then, minimally invasive arthroscopically-assisted procedures have become

Surgeon discusses strategies in proximal tibial fracture treatment (Healio12y) Please provide your email address to receive an email when new articles are posted on . ISTANBUL — Orthopaedic surgeons should treat proximal tibial fractures individually based on fracture

Surgeon discusses strategies in proximal tibial fracture treatment (Healio12y) Please provide your email address to receive an email when new articles are posted on . ISTANBUL — Orthopaedic surgeons should treat proximal tibial fractures individually based on fracture

Paige Bueckers' injury: What is a tibial plateau fracture, what does recovery look like and what are the long-term implications? (Hartford Courant3y) The college basketball world received disappointing news Tuesday, when it was announced that UConn women's basketball star guard and reigning national player of the year Paige Bueckers will miss six

Paige Bueckers' injury: What is a tibial plateau fracture, what does recovery look like and what are the long-term implications? (Hartford Courant3y) The college basketball world received disappointing news Tuesday, when it was announced that UConn women's basketball star guard and reigning national player of the year Paige Bueckers will miss six

CERTiFy (CERAMENT™|Tibia Fracture) Study Protocol Published In TRIALS (PR Newswire11y) LUND, Sweden, March 12, 2014 /PRNewswire/ -- BONESUPPORT, an emerging leader in injectable bone substitutes for orthopedic trauma, bone infections and instrument augmentation related to orthopedic

CERTiFy (CERAMENT™|Tibia Fracture) Study Protocol Published In TRIALS (PR Newswire11y) LUND, Sweden, March 12, 2014 /PRNewswire/ -- BONESUPPORT, an emerging leader in injectable bone substitutes for orthopedic trauma, bone infections and instrument augmentation related to orthopedic

Minimally Invasive Reconstruction of Lateral Tibial Plateau Fractures Using the Jail

Technique (Medscape3mon) Forty fresh skeletally mature porcine tibias were obtained from a local butcher and frozen at -20°C. The porcine model was selected because of the similarities of structural properties between the

Minimally Invasive Reconstruction of Lateral Tibial Plateau Fractures Using the Jail Technique (Medscape3mon) Forty fresh skeletally mature porcine tibias were obtained from a local butcher and frozen at -20°C . The porcine model was selected because of the similarities of structural properties between the

Related Articles

- [yearbook templates pdf](#)
- [ford 3000 tractor battery](#)
- [guyton and hall textbook of medical physiology pdf](#)

[Back to Home](#)