**Session: How to Improve the Results in Tibia Plateau Fractures**

**Mini Symposium**

***Friday, 10/7/16; 6:30am-7:30am***

Utku Kandemir: Introduction, initial management      15 min

Jackson Lee: How to decide on surgical approach(es) 15 min

Saam Morshed: Aids of reduction, bone void fillers            15 min

Utku Kandemir: Fixation: Location and type of construct   15 min

Q&A:                   30 Min

**Lecture: Initial Management**

**Utku Kandemir, MD**

* Soft Tissue Evaluation
  + Degree of soft tissue injury
  + Relevance re: timing of surgical intervention
  + Vascular injury
* Radiographic Evaluation
  + X-rays
  + CT scan, timing: MRI, when
  + Classification
* Initial Stabilization
  + Splint, knee immobilizer
  + Hinged Knee brace
  + Exfix: which patterns
* Pitfalls of Exfix application
  + Reduction
  + Location of pin placement
* Compartment syndrome
  + Predisposed patterns
  + Incisions for fasciotomies and definitive fixation
  + Timing of definitive fixation after fasciotomies

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**Lecture Topic: How to Decide on Surgical Approach?**

**Jackson Lee, MD**

* Closed/Minimal Surgical approaches
  + Closed reduction and Percutaneous Fixation
    - Fluoroscopy assisted
    - Arthroscopy assisted
* Open Surgical approaches
  + Anterolateral
    - Description
      * Incision – full thickness flaps
      * Submeniscal arthrotomy
      * Femoral distractor
    - Advantages – direct visualization of most of lat. Plateau, allows lat buttressing
    - Disadvantages - cannot see far posterior and barely see midline
  + Medial
    - Description
    - Advantages – reducing medial based fx
    - Disadvantages - Limited joint visualization
  + Posteromedial
    - Description - supine vs prone, incision, hamstring “windows”
    - Advantages - access to posteromedial fx
    - Disadvantages- indirect reduction of medial articular fx
  + Posterior
  + Posterolateral
    - Description
    - Advantages - reducing posterolateral shear fxs
    - Disadvantages – peroneal nerve anatomy
  + Posterior
  + Multiple Approaches
    - Which one first
* Which approach per fracture pattern?
* Potential complications associated with surgical approach

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**Lecture Topic: Reduction aids and bone void fillers**

**Saam Morshed, MD PhD**

1. Operative Treatment Principles
   1. Direct reduction and rigid internal fixation of articular segment
   2. Restore functional length, alignment, and rotation to the limb
   3. Respect soft-tissue viability
   4. Promote early mobilization and rehabilitation
2. Indirect Reduction – Techniques for acute and staged treatment
   1. Patient positioning and props
   2. External fixators
      1. Uniplanar
      2. Circular
   3. Universal distractor
3. Direct Reduction – Indications and Methods
   1. When you need direct visualization
      1. Articular impaction/depression
      2. Intra-articular debris threatening bearing surfaces or soft-tissue derangement
      3. Partial articular fragment reduction and buttress plate application
   2. Tools
      1. Head-lamp
      2. Osteotomes
      3. Bone tamps
      4. Freer and pick
      5. Kirschner wires
      6. Peri-articular and pointed reduction clamps
4. Bone Void Fillers – Indications, options and what I use
   1. Allograft
   2. Autograft
   3. Synthetics

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**Lecture: Location and Type of Construct**

**Utku Kandemir, MD**

* Fixation: and fixation construct options
  + Fracture patterns
* Fixation Construct
  + Type I, II, III,
  + Type IV
  + Type V, VI
  + Buttress, Neutralization, Rafting
  + Locking vs nonlocking
* Location of fixation
  + Lateral only vs medial + lateral
  + Posterolateral
* Pitfalls:
  + Medial comminution and nonanatomic reduction
  + Fracture dislocation
  + Posteromedial shear fragment