



# Accelerated Rehabilitation and Return to Play After Lateral Tibial Plateau Fracture & ORIF: A Case Report

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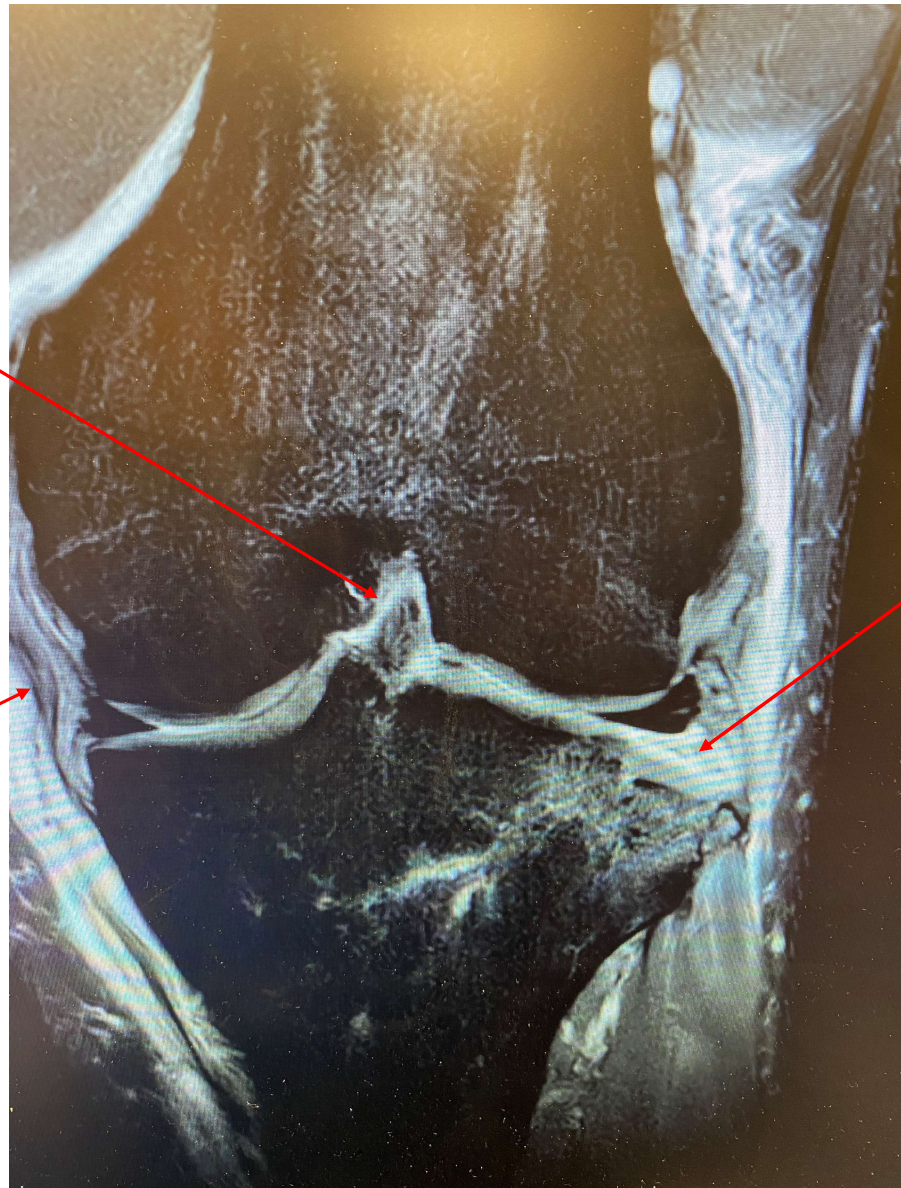
# Mechanism of Injury & Diagnosis

- 23 y/o professional football player (OL)
- MOI
  - Engaged blocking -> 3<sup>rd</sup> player dives for tackle
  - Left knee injury
- Immediate care
  - On-field evaluation
  - Removed from field of play
  - Examined in sideline tent
  - RICE
- Examined again following day
  - Physical exam
  - Imaging
  - Presentation

ACL Sprain (Read)

MCL Sprain

Lateral Tibial  
Plateau Impaction  
Fracture





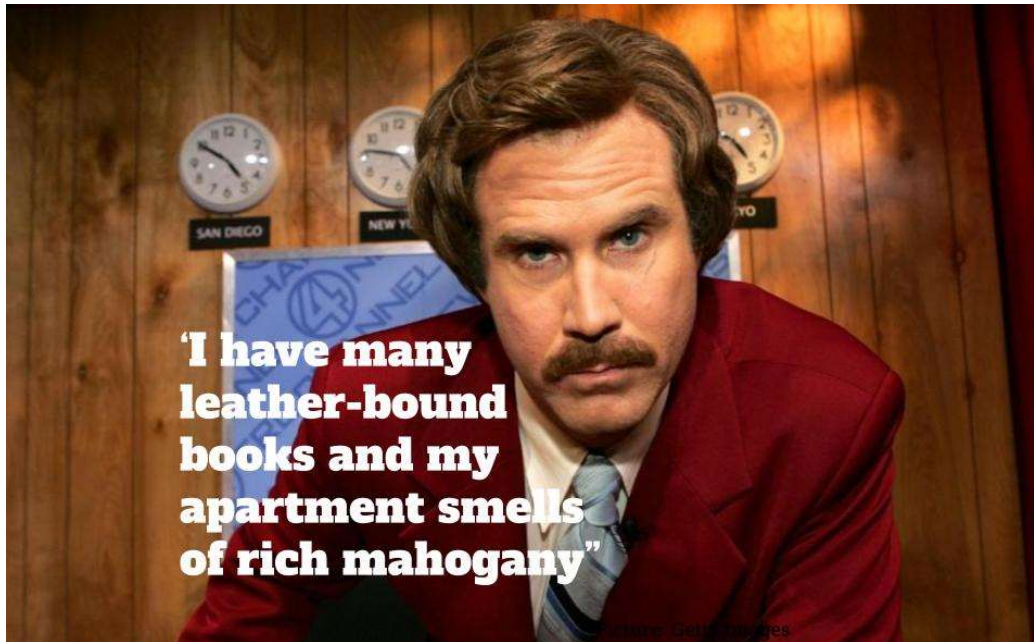




# Consultations & Treatment Decision

- Consultations
- Recommendation
  - ORIF and realignment of joint surface
- Athlete took several days to make his decision - elected surgery

# Literature Review



- Epidemiology<sub>1-8</sub>
  - Account for 1% of all fractures
- Outcomes<sub>1-8</sub>
  - As low as 39% return to work within 1 year if physical labor
    - Many change career
  - Increased pain and decreased function reported long term (>24 months)
- Initial Weight Bearing Limitations<sub>2,7,8</sub>
  - Surgeon specific
  - Immediate vs. Delayed
- Return to Sport
  - ~70% return to sport (60% within a year) - but varies based on type of surgery performed<sub>4,5</sub>
    - Most at decreased competition levels<sub>4,5</sub>
    - Minimal professional sport data available: 18%<sub>4,5</sub>

# Surgery Performed

Lateral tibial  
plateau  
ORIF with  
our trauma  
surgeon

Realign fractured fragment & joint  
surface

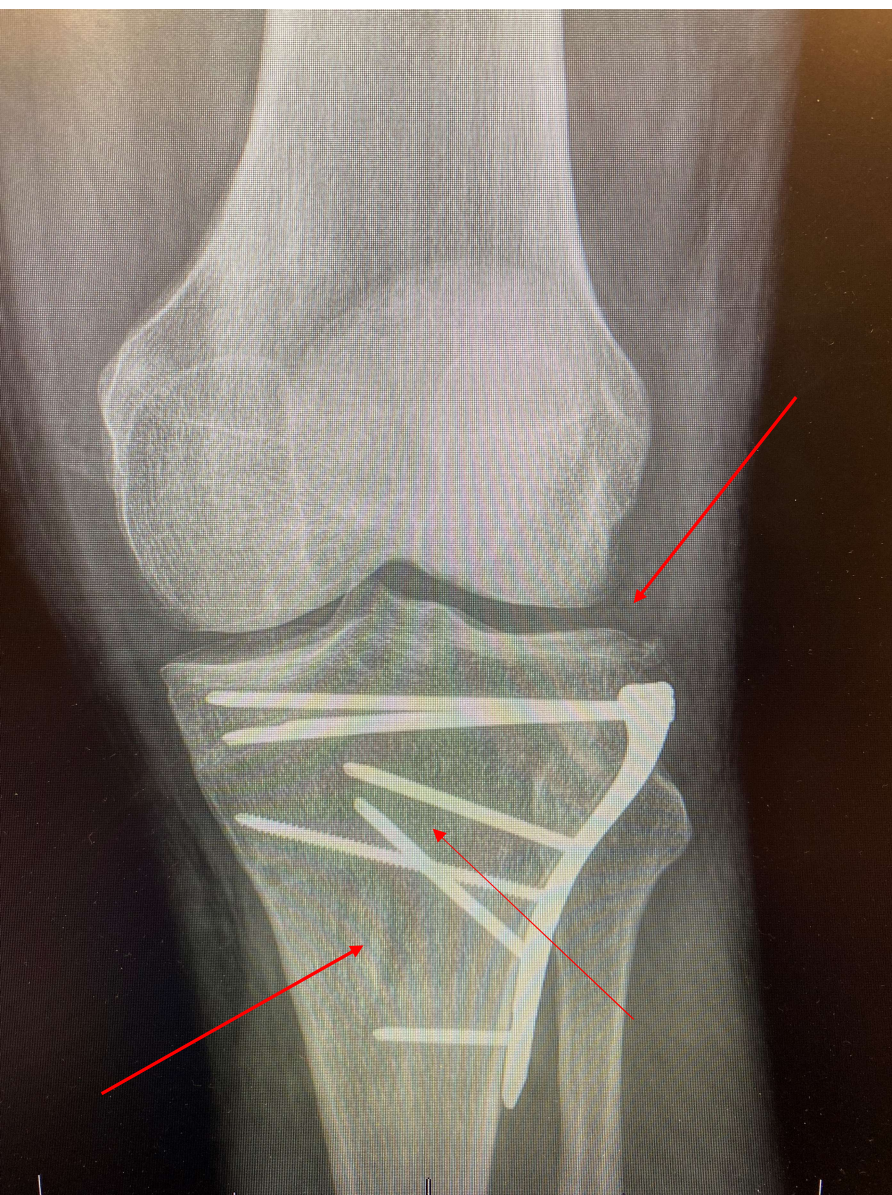
Support fragment with plate, screws, and  
synthetic bone graft



MCL  
internal  
brace  
placed

Resolve significant laxity







# Acute Post-Operative Care (Weeks 1-3)

## Presentation after surgery

- PROM: Lack 3° – 50° – empty end feel and severe pain
- Large incision anterolateral, two smaller incisions medial
- 3+ effusion and generalized LE edema
- Quad set & lag

## Goals of this phase

- Restore ROM (Extension > Flexion)
- Manage swelling
- Manage incisions
- Manage pain
- Restore quad

## Exercise Selection

- Standard knee post-op exercises
  - Strength (NWB)
  - ROM
  - NMES
- Blood flow restriction

## Post-surgical restrictions

- NWB x10 weeks
- Athlete's Goal
  - Return to play same season
- Not compatible with above restrictions



Inferior Portal

Superior Portal

Drain site  
(removed)

## Initiation of Weight Bearing: Post-Operative Week 4

### Presentation

- AROM: 0° – 120°, empty end feel
- Large 3+ effusion and generalized LE edema
- Incisions fully healed
- Zero quad lag
- Initial X-rays to assess bone healing

### Goals of this phase

- Restore ROM
- Manage pain and swelling
- Initiate and progress weight bearing safely

### Weight Bearing

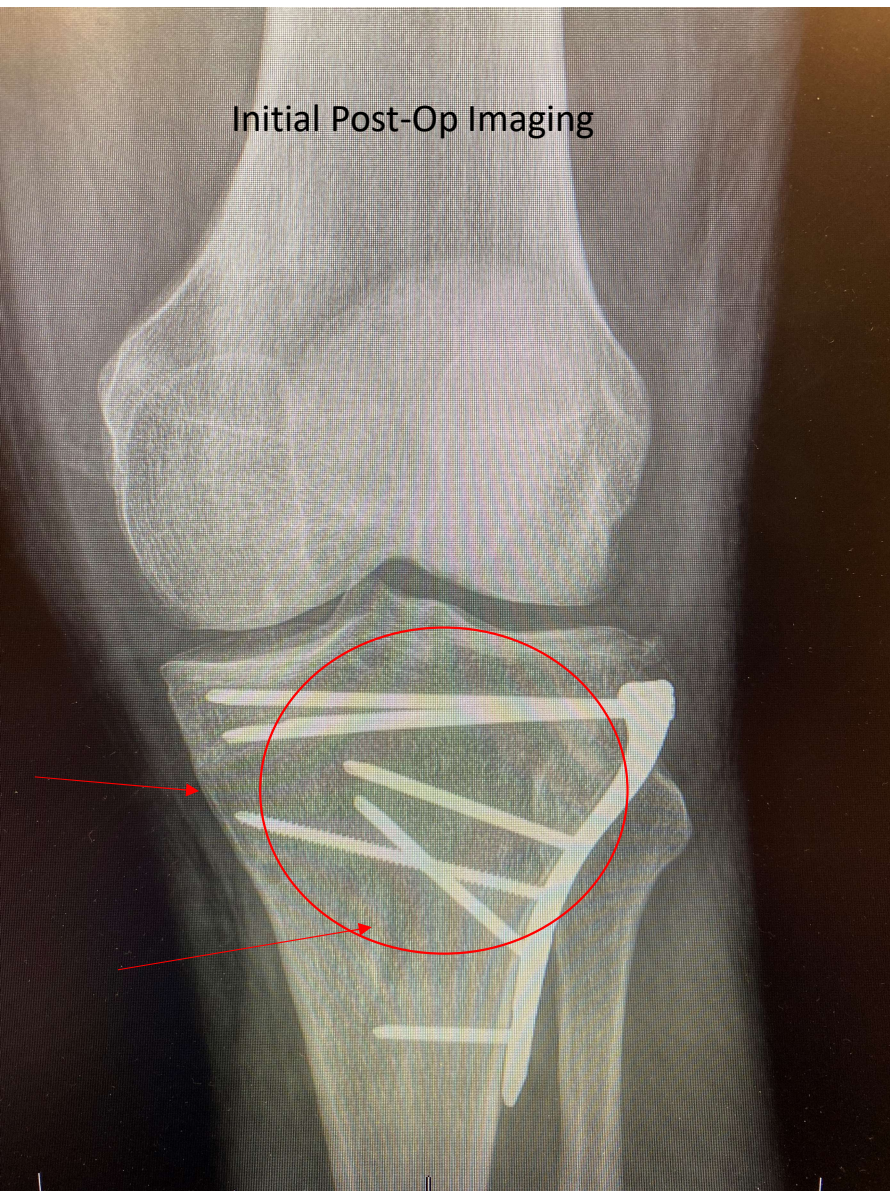
- Negotiation resulted in starting 10% weight bearing (~30#)

### Exercise Selection

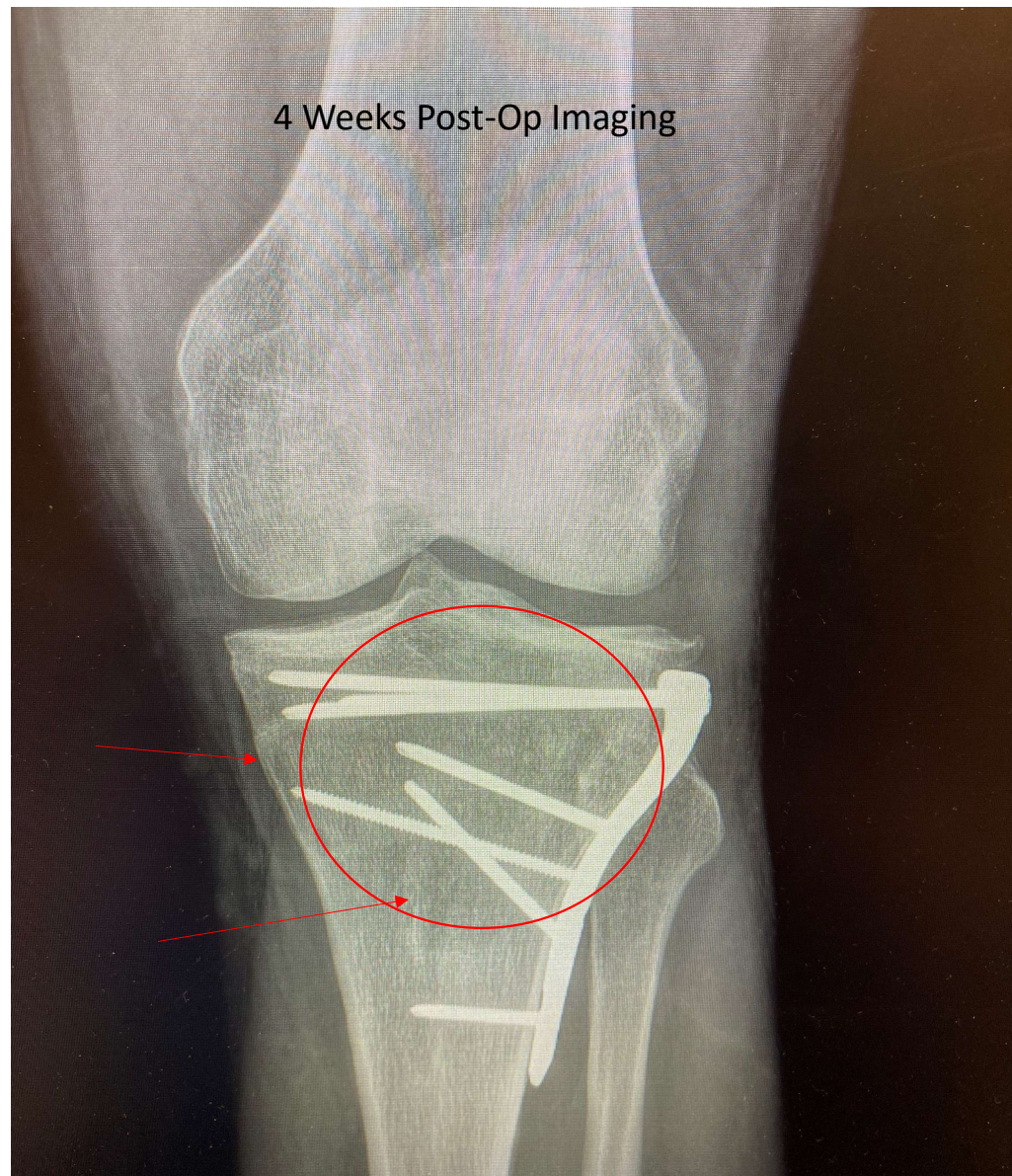
- Progressed loads
- Pool
- Leg press



Initial Post-Op Imaging



4 Weeks Post-Op Imaging





## Progression of Weight Bearing: Post-Operative Weeks 4-6

Presentation	Goals of this phase	Criteria for Progression	Weight Bearing
<ul style="list-style-type: none"><li>• AROM: Hyper 3° – 137°</li><li>• PROM: Hyper 6° - normal end feel</li><li>• Effusion: 2+</li></ul>	<ul style="list-style-type: none"><li>• ROM WNL</li><li>• Decrease effusion</li><li>• Progress weight bearing as able</li><li>• Maximize strength</li></ul>	<ul style="list-style-type: none"><li>• X-ray</li><li>• Pain/Effusion/ROM</li><li>• Gait characteristics</li></ul>	<ul style="list-style-type: none"><li>• Week 4: 10%-40% body weight in Alter G</li><li>• Week 5: 40%-70% body weight in Alter G</li><li>• Week 6: 70%-100% body weight in Alter G</li></ul>



# Return to Running: Post-Operative Weeks 7-9

## Presentation

- AROM: Hyper 6° - 137°
- Effusion: Zero - Trace

## Goals of this phase

- Initiate running
- Progress activity safely
- Continue to monitor bone healing & fixation
- Maximize strength

## Running Initiation/Progression

- 60% BW in Alter G at week 7
- Ran over ground at week 8
  - Setback & rest
- Resume 70% BW in Alter G at week 8.5

## Strength Testing

- Knee extension estimated 1RM

# Return to Play: Post-Operative Weeks 9-13

## Goals of this phase

- Progress activity safely
- Continue to monitor bone healing & fixation
- Make a decision (return/no return)

## Running/Sport Progression

- Week 9: Alter G x2 days increasing BW -> Over ground running x2 days
  - Position specific drills with medical
- Week 10: Return to practice -> Played in half of game at 10.5 weeks
- Weeks 11-12: Continue to rehab & practice
- Week 12.5: Play in full playoff game

## Shared Decision Making

- Discussions with stakeholders
  - Athlete
  - Head ATC
  - Team MD
  - Front office

## Update

- Doing well

# What Can We Learn?

- My kid is adorable
- Shared decision making
- Don't predetermine rehab length unless there is a very good reason (e.g. 9 months w/ ACL)
- When lacking literature pick your boundaries & limiting factors (e.g. NWB & bone healing rate) and then do whatever you can do within those.
  - As boundaries and factors evolve, progress using serial re-examination.
- Motivated and determined patients make good PTs & ATs

# Citations

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