LISFRANC FRACTURES DISLOCATIONS

ORIF vs. Fusion

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Introduction

- Uncommon Injuries
- Highly Variable Injuries
  - Trauma
  - Sports
- Associated with other injuries
Introduction

• “I always do ORIF, and then I take out my screws
• “I always do ORIF, but I leave my screws in”
• “I always fuse”

Impact of Injury

• Diagnosis is missed or delayed in up to 20% of cases
• It’s a Lisfranc until proven otherwise

Case 17 yo F Rugby Injury
Case - Next step?

1. Weightbearing xrays
2. MRI
3. Proceed to ORIF
4. Proceed to Fusion

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Case

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Imaging of Lisfranc Injuries

- Weight Bearing
- Contralateral views
- Stress
- CT/MRI
Hardware Removal and When?

1. No 0%
2. Only if symptomatic 0%
3. Yes 6-12 weeks 0%
4. Yes >6 mo 0%

Rationale for ORIF

- Preserve the joints at all costs
- Do not eliminate a motion segment of the foot
- Hard to make the multiple fractures and a fusion heal
- Traditional treatment

Results of ORIF

- Good to Fair Results
- Most Important Parameter was Anatomic Reduction

Arnez et al. JBJS 1988
Kuo et al. JBJS 2000
Rajagopalan et al. Injury 2006
Teng et al. JFM 2002
Case – 50 yo M fall from roof
Substance abuse, Hepatitis C, Bipolar disorder, smoker

Closed Reduction
- Urgent if tenting the skin
- Can be blocked by tendons, ligaments, bone

Case - Operative Procedure?
1 ORIF 0%
2 Primary Fusion 0%
3 PT/Conservative care 0%
Operative Technique

- Incisions

Case

Case
Rationale for Fusion

- Medial column of the midfoot functions rigidly during gait for stability
- Lateral column (4th, 5th metatarsal-cuboid) is the mobile midfoot segment
- One operation, one recovery period
- Eliminates need for hardware removal
- Fusion is more forgiving
- Fusion is not time sensitive
Hardware

- What to use?
  - Screws
    - 3.5mm or 4.0mm cortical
    - Cannulated screws
  - Spanning Plates
    - comminution
  - Suture Bridge?

Screws

Plates
Post-Op

- NWB Short leg cast X 6-8 weeks
- Remove K wires at 4 weeks
- Boot, gradual WB at 8-10 weeks
- PT or HEP

Complications

- Pain/neuritis
- Wound Problems
  - Should be less than ORIF
- Post-Traumatic Arthritis? - NO!
- Nonunion

Primary Arthrodesis (PA) vs ORIF

- Mulier et al FAI 2002
  - Advocated for partial primary arthrodesis for medial column
- Ly & Coetzee JBJS 2006
  - Randomized prospective study, improved results in PA vs ORIF for ligamentous injuries
- Henning et al FAI 2009
  - Less secondary procedures and trends towards better outcomes in PA vs ORIF
Case – 43 yo M s/p twisting injury

- Happened 6 wks ago doing a tough mudder

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Case

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Case - Operative Procedure?

1. ORIF 0%
2. Primary Fusion 0%
3. PT/Conservative care 0%
Case – 5mo

Case
- Deformity

My Practice
- ORIF
- PRIMARY FUSION
  - Low Energy
  - Young
  - Agility Athletes
  - High Energy
  - Older, Low Demand
  - BMI Champions
  - Work Comp
Summary

- Complex Injuries with potential for poor outcomes
- Do not miss subtle injuries
- Listen to the soft tissues
- Goal of fixation → Stable plantigrade foot

Thank You