Historical perspective...

Jacques Lisfranc (1790-1847)

Described field amputation at midfoot not injury!

Lisfranc Fracture- Dislocation
Best Treatment

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29th Annual Orthopaedic Trauma Meeting
May 5-6, 2017

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Lisfranc Fracture- Dislocation

Axial load mechanism
Plantar ecchymosis
Diagnosis on XR/CT sometimes MRI
Weight bearing films as needed
The obvious…

The not so obvious…

Lisfranc Injuries
Quenu & Kuss Classification
There are three patterns of injury
Questions?

• What surgery if any, should we be doing?

• What implants can we use?

• What factors play in decision making process?

Myerson...

• There is no place for non operative management of fracture or fracture dislocations of the tarso-metatarsal joint complex

Kuo, Tejwani, JBJS 2000

• Retrospective study

• 48 patients; 52 mth f/u
• 6 required fusion for arthritis

• Anatomic reduction has best outcomes
• Purely ligamentous injuries did worse
Ly and Coetzee, JBJS 2008

- Prospective randomized study comparing fixation (20) to fusion (21) ligamentous injury
- Anatomic reduction in 18/20 and 20/21
- AOFAS scores significantly better with fusion (42 m follow up)
- 5/20 fixation needed fusion later
- 92% vs 65% returned to pre-injury level
Primary fusion

Sheibani-Rad, Coetzee, Orthopedics, 2012
- Review of literature comparing fixation to fusion
- Six articles with 193 patients
- No difference in anatomic reduction
- No difference in AOFAS scores

Smith, CORR 2016
- Meta-analysis; 3 articles
- Compared Primary fusion to ORIF
- More hardware removal with ORIF
- No difference in patient outcomes or revision surgery
Bony injury; significant swelling

Compartment syndrome?
Temporizing with closed reduction

2- incision approach
Plates or screws

• Hu, Act Ortho, 2014
• 60 patients (28 screws; 32 plates)
• Better outcomes in plating group

• Equal number of
  • wound problems (21 v 19%)
  • Secondary arthrodesis (6 v 10%)
  • Return to pre-injury (81 v 79%)

Other options

• Joint spanning plates
• Suture-button fixation

Biosorbable or steel

• Ahmad et al; JOT 2016
• 40 patients; 20 in each group

• No difference in outcomes
• One case of inflammatory reaction at site of non-resorbed screw

• Obviates need for hardware removal
Post Op Protocol

• NWB 3 months
• Exfix removal at time of definitive fixation (or at 4 weeks)
• K-wire removal at six weeks
• Warn patient about screw breakage

Associated MT base fractures

Need plate fixation
Nutcracker

Needs additional cuboid fixation

Open, crushed, insensate foot associated pilon fracture
One year later with free flap plantar sensations present

3 years later walking with rocker bottom shoes

Complications

- Wound breakdown
- Neuro injury
- Hardware breakage
- Persistent pain
- Long term arthritis
Long term outcomes

• Better outcomes associated with anatomic reduction

• No difference in fusion versus fixation
• No difference in hardware used
• Potential need for hardware removal

• Up to 90% of patients develop post traumatic arthritis

My Preference

• ORIF
• Fusion reserved for delayed presentation or failed fixation
• NWB for three months
• Warn patient about broken hardware
• Counsel about outcomes

Thank you

Would you like a pig for a pet? Come to NYC!