

Lisfranc injury: osteosynthesis or early arthrodesis

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Epidemiology

- **Lisfranc injuries account for approximately 0.2% of all fractures**

T.A. English, Dislocations of the metatarsal bone and adjacent toe, J. Bone Joint Surg. Br. 46 (1964) 700–704.

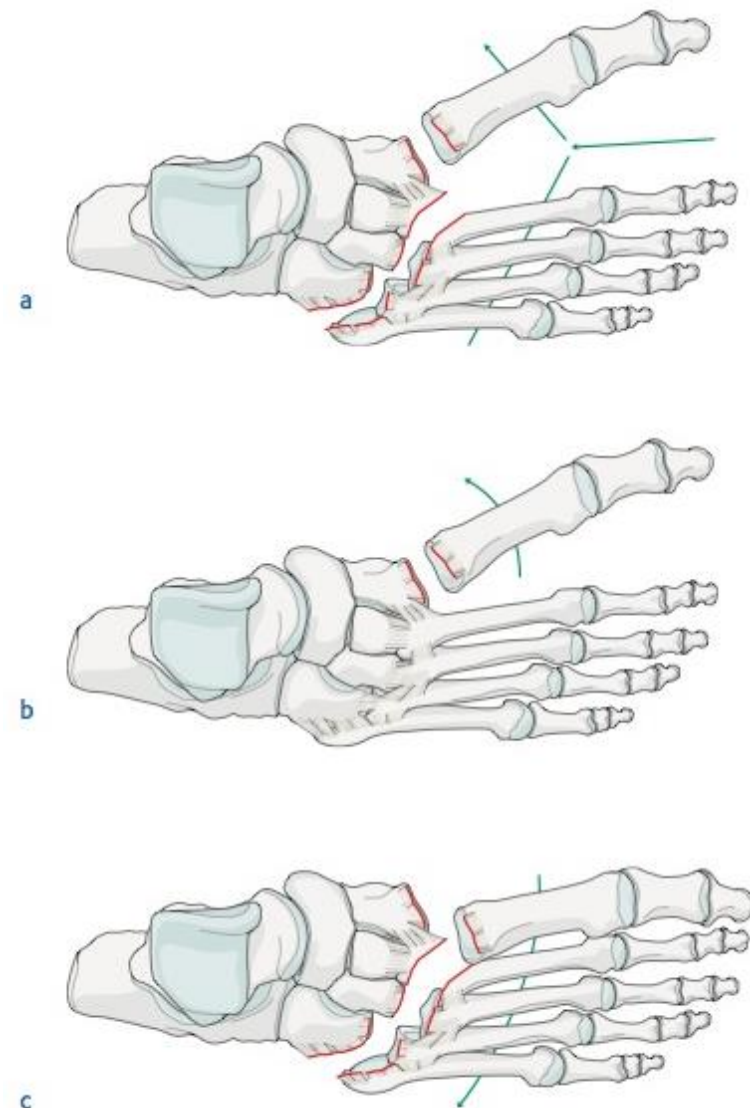
- **Accompanied by long-term morbidity**

M.S. Myerson, W.C. McGarvey, M.R. Henderson, J. Hakim, Morbidity after crush injuries to the foot, J. Orthop. Trauma 8 (1994) 343–349.

- **20% are missed or misdiagnosed on the initial clinical and radiographic examination**

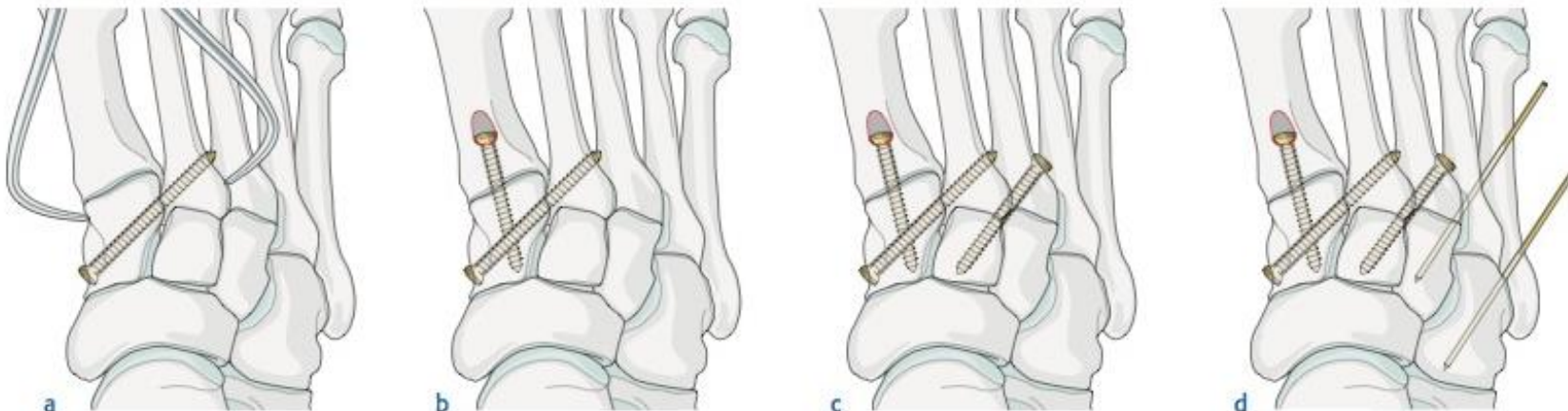
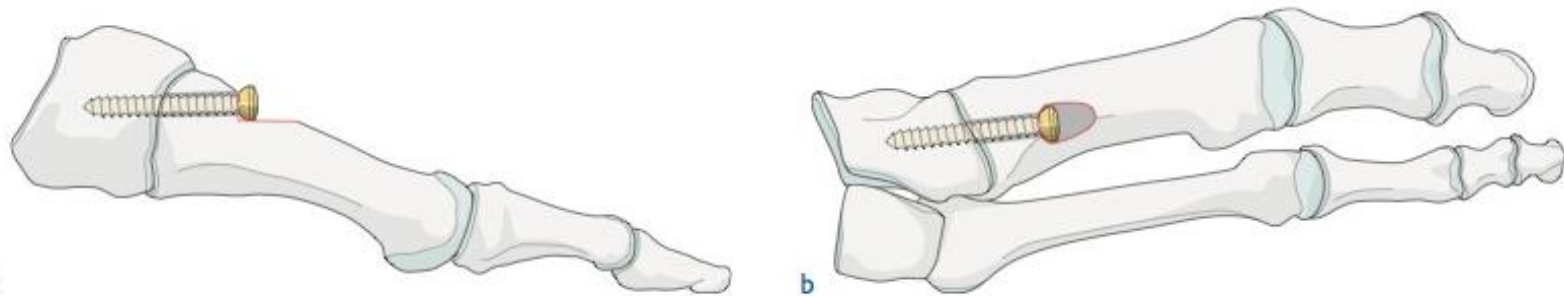
Trevino SG, Kodros S. Controversies in tarsometatarsal injuries. Orthop Clin North Am 26:229–238, 1995.

Classification of tarsometatarsal dislocation



AO manual: anatomic reduction, temporary fixation

1. Reconstruction of the medial column
2. Insertion/adaptation of the 2nd MT (,Key-Lock'-principal)
3. Fixation of the other metatarsal bones



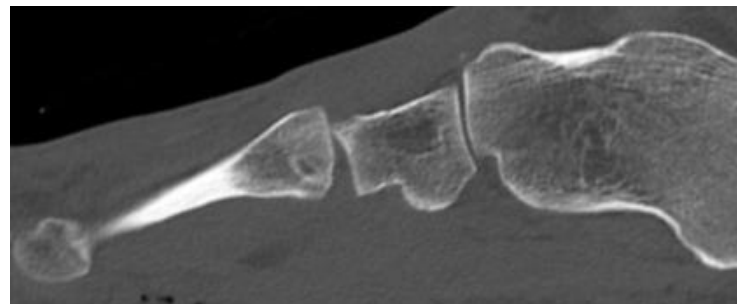
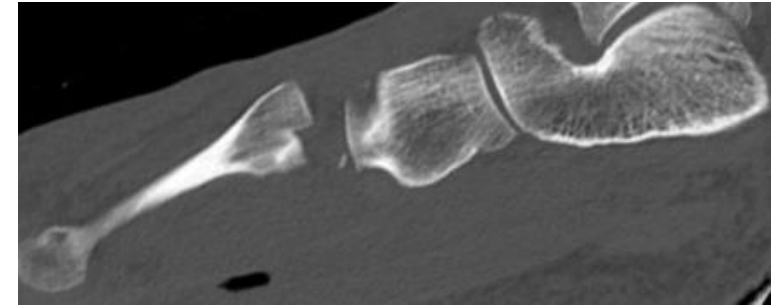
Case 1: How could it look like...



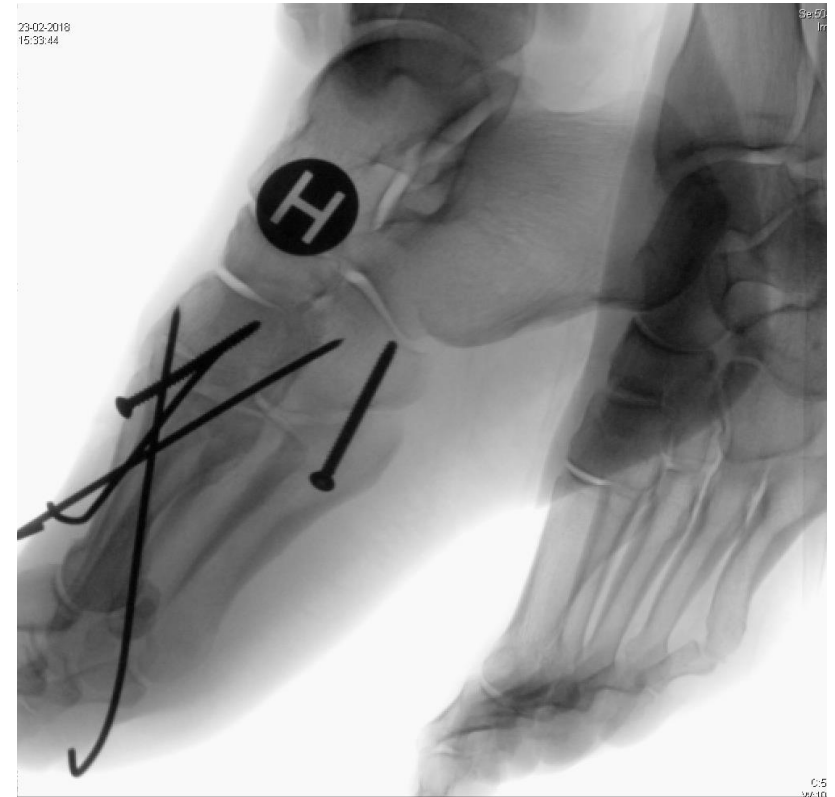
Implant removal after 3 months



Case 2: type II open



Intraop. X-ray



Soft tissue after 2 weeks



X-ray 2 weeks after ORIF

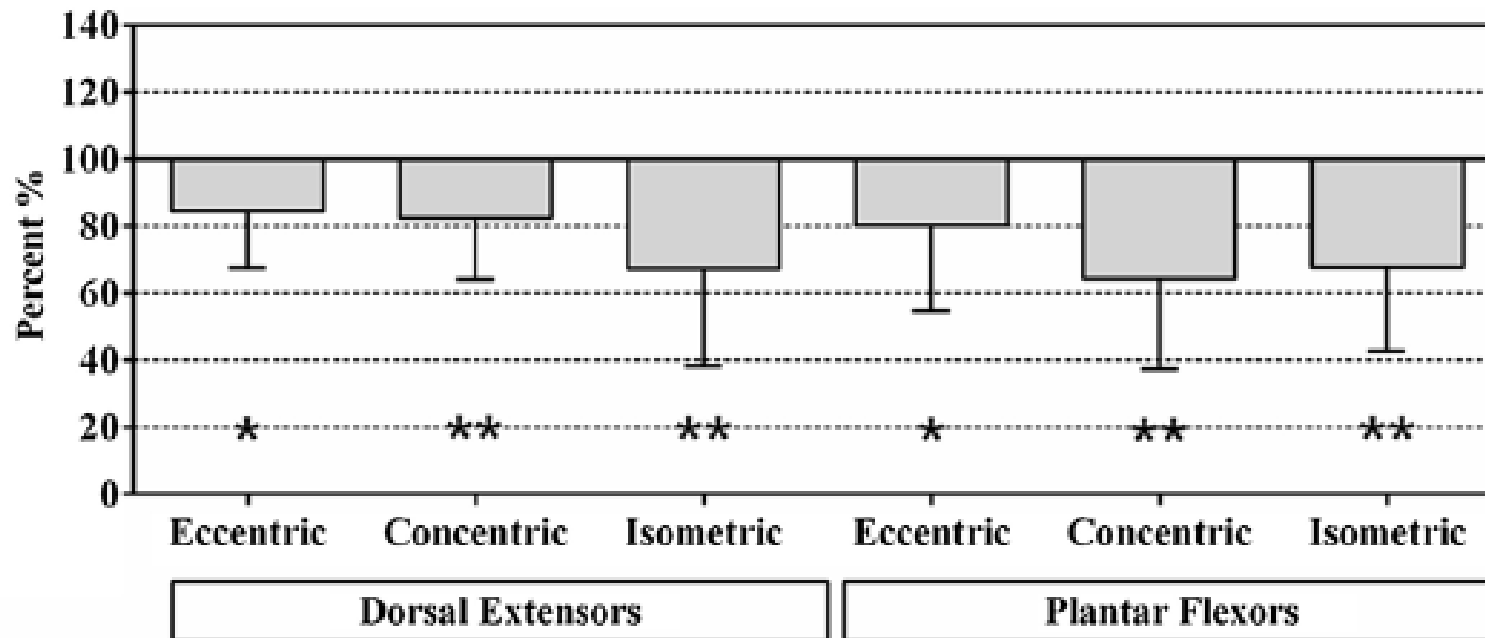


What's the difference between the 2 cases?

- Soft tissue conditions
- Second case has fractures, the first is a ligamentous injury
- Foot looks up in Germany and down in the Nordic countries 😊

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Isokinetic assessment revealed a significant reduction in plantar flexor and dorsal extensor peak torque



- Significant reduction in unilateral stance time
- Implication on QoL

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Gait & Posture 52 (2017) 332–337



Full length article

Dynamic plantar pressure distribution, strength capacity and postural control after Lisfranc fracture-dislocation

Alexander T. Mehlhorn^{a,b,*}, Markus Walther^b, Tayfun Yilmaz^a, Lennart Gunst^a, Anja Hirschmüller^a, Norbert P. Südkamp^a, Hagen Schmal^{a,c}



PA or ORIF in high-energy injuries

- Well-designed, prospective studies comparing ORIF with PA demonstrate:
 - comparable outcomes in combined bony and ligamentous injuries
 - improved outcomes with PA in injuries that are primarily ligamentous

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TREATMENT OF PRIMARILY LIGAMENTOUS LISFRANC JOINT INJURIES: PRIMARY ARTHRODESIS COMPARED WITH OPEN REDUCTION AND INTERNAL FIXATION

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Open Reduction Internal Fixation Versus Primary Arthrodesis for Lisfranc Injuries: A Prospective Randomized Study

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Grand Rapids, MI

What's the problem?

Stability of the longitudinal arch



- Lateral view with weight bearing
- Diagnostics of the longitudinal arch
- First → WEIGHT BEARING makes the pathology visible



Lapidus - Arthrodesis (TMT I)



Hallux-angle 38°
IMT-angle 18°



Hallux-angle 5°
IMT-angle 4°



Conclusions

- Be suspicious: in doubt CT scanning
- Early reduction
- Decision making:
 - soft tissue situation?
 - multiple injuries?
 - timing?
 - ligament injury or/and fracture?
 - comorbidity?
- Ligamentous injury: PA

We love our feet...

