Jones Fractures

Cast Treatment

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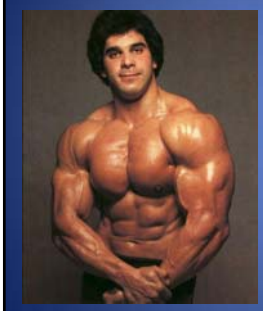
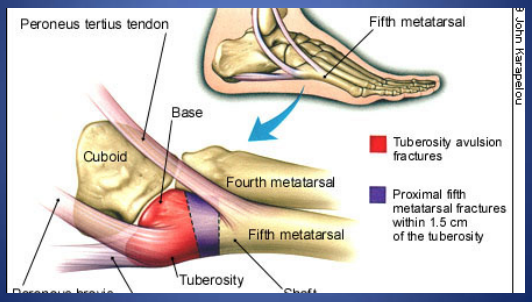
Horse

Arm Wrestle



Dance Contest

5th Metatarsal Fracture



Strayer et al. Fractures of the proximal fifth metatarsal. *Am Fam Physician.* 1999 May 1;59(9):2516-2522.

5th Metatarsal Fractures

Jones Fracture X-Ray

http://radiopaedia.org/cases/jones-fracture-4

Classification

Class	*Description*
Zone 1 (pseudo Jones fx)	•Proximal tubercle (rarely enters 5th tarsometatarsal joint) •Due to long plantar ligament, lateral band of the plantar fascia, or or contraction of the peroneus brevis •Nonunions uncommon
Zone 2 (Jones fx)	•Metaphyseal-diaphyseal junction •Involves the 4th-5th metatarsal articulation •Vascular watershed area •Acute injury •Increased risk of nonunion
Zone 3	•Proximal diaphyseal fracture •Distal to the 4th-5th metatarsal articulation •Stress fracture in athletes •Associated with cavovarus foot deformities or sensory neuropathies •Increased risk of nonunion

Treatment

- Nonoperative
  - **protected weight bearing in stiff soled shoe, boot or cast**
    - indications
      - Zone 1
    - technique
      - advance as tolerated by pain
      - early return to work but symptoms may persist for up to 6 months
  - **non weight bearing short leg cast for 6-8 weeks**
    - indications
      - Zone 2 (Jones fracture) in recreational athlete
      - Zone 3
    - technique
      - advance with signs of radiographic healing
- Operative
  - **intramedullary screw fixation**
    - indications
      - zone 2 (Jones fracture) in elite or competitive athletes
        - minimizes possibility of nonunion or prolonged restriction from activity
      - zone 3 fracture with sclerosis/nonunion or in athletic individual
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Complications of ORIF

- Nonunion
  - increased risk in Zone 2 (Jones fracture) and Zone 3 due to vascular supply
  - smaller diameter screws (<4.5mm) associated with delayed union or nonunion
- Failure of fixation
  - higher failure rate in
    - elite athletes
    - return to sports prior to radiographic union
    - fracture distraction or malreduction due to screw length
      - screws that are too long will straighten the curved metatarsal shaft or perforate the medial cortex

Complications of ORIF

- **Outcomes:**
  - in the report by Larson CM, et al (2002), 15 patients (mean age, 21.7 years) underwent cannulated screw fixation of a Jones fracture;
  - there were six treatment failures: four refractures and two symptomatic nonunions;
  - mean time to full activity was 6.8 weeks for the patients with failure compared with 9 weeks for patients who did not have complications;
  - although all patients were asymptomatic and radiographically progressing to union before return to full activity, only one of six patients with failures had complete radiographic union, compared with six of seven patients with no complications;
  - higher proportion of elite athletes (division I or professional level) among the failure group (83%) compared with those without complications (11%);
  - return to full activity, especially among elite athletes, before complete radiographic union was predictive of failure
  - ref: Intramedullary Screw Fixation of Jones Fractures. Analysis of Failure

Cast

- **Non Operative Treatment:** (Acute Jones Fracture)
  - non operative treatment should be reserved only for acute fractures (in most cases);
  - w/ a fracture that is minimally displaced, is < 3 months old, and radiographs show fracture w/o evidence of non-union (i.e., intra-medullary sclerosis and a lucent fracture line), non-operative treatment can be recommended;
  - perhaps up to 2/3 of these fractures should heal;
  - **non-wt-bearing cast for 6-8 wks** is necessary for healing

Thank You