Calcaneus Fractures

See also Calcaneus fractures (Ortho)

Background

1. Calcaneus supports entire body wt during gait
    - Articulates w/talus via subtalar/ talocalcaneal joint
2. Calcaneus and talus comprise hindfoot
3. Fractures in athletes seen in running/ jumping sports
    - Rock climbing (falls)
    - Sky diving
    - Free running "jumping off things"

Pathophysiology

1. 2% of all fractures treated
2. Extra-articular fractures: 30%
3. Intra-articular fractures: 70%
4. Mechanisms of injury
    - Direct, high-energy axial load from running, jumping or falls
    - Stress fracture: consider osteopenia
5. Greater than 50% association w/other extremity or vertebral fracture
6. 7% have contra-lateral calcaneal fracture
7. 25% have concurrent lower extremity fracture

Diagnostics

1. Presentation
    - Heel pain
    - Swelling
    - **Mondor sign**
        - Ecchymosis distal to sole of foot
2. X-Ray
    - AP, lateral
    - Axial view (Harris view) if strong suspicion
    - Fracture best seen in lateral view
3. CT used to assess degree of comminution or injury severity
4. Bohler's angle (rates severity of compression in intra-articular fractures)
    - Created by intersection of line drawn from posterior tuberosity to posterior facet apex w/line from posterior facet apex to anterior process
    - Normal = 20-40°
    - <20° suspect calcaneal fracture
5. Classification
    - Intra-articular: involves subtalar joint
    - Extra-articular: does not involve subtalar joint

Therapeutics

1. Intra-articular or displaced fractures
    - Orthopedic consultation for ORIF
2. Stress fractures
    - Elevate
    - Non-wt bearing for 6-8 wks

Prognosis

1. Return to activity
    - Stress fracture: gradual return to training 6-8 wks after injury
    - Fracture requiring surgical repair: 4-6 mos post operative
        - Depends on severity
2. Complications
    - Early complications
        - 10% incur compartment syndrome
        - 5% will have deformities
            - Toe clawing
            - Stiffness
            - Neurovascular dysfunction
    - Late complications
        - Infection
        - Arthritis
        - Neuritis
3. Disability
    - Pain
    - Loss of mobility
    - Functional impairment
        - 50% even w/optimal tx

Patient Education

1. http://familydoctor.org/online/famdocen/home/healthy/physical/sports/147.html

References

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