ROTATIONAL ANKLE INJURIES

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INTRODUCTION

- Population based studies suggest that the incidence of ankle injuries has increased dramatically from the 1960’s

- Patients with acute ankle injuries frequently present to primary care providers

- Accurate initial diagnosis and treatment of ankle injuries is instrumental in improving long term outcome
OBJECTIVES

- Review relevant ankle anatomy
- Review pertinent history and physical exam findings in ankle injuries
- Instruct on current treatment methods and red flags associated with rotational ankle injuries
BONY ANATOMY

- Three bone joint
- Saddle shaped
- Talar dome wider anteriorly
LIGAMENTOUS ANATOMY

- 3 Groups of ligaments

Syndesmotic
LIGAMENTOUS ANATOMY (LATERAL)

Lateral Collateral Ligaments
LIGAMENTOUS ANATOMY
(MEDIAL)

Medial Collateral Ligaments
THE HISTORY

- Timing
- MOI
- Able to W.B after injury
- Location of pain
- History of previous injury/surgery
OTTOWA ANKLE RULES

- States that ankle xrays are only needed if there is pain near either malleoli and one of the following is present:
  - Age 55 years or older
  - Inability to W.B.
  - Bone pain at the posterior tip of either malleolus
PHYSICAL EXAM OF THE INJURED ANKLE

- Inspection
- Tenderness to palpation
- Special tests
- Distal motor, sensory and vascular exam
STANDARD
RADIOGRAPHIC VIEWS

AP

MORTISE

LATERAL
ANKLE SPRAINS

- Inversion and plantar flexion most common MOI
- ATFL most frequently injured
- Grading of ligamentous injury
- Location of Tenderness
RADIOGRAPHIC FINDINGS

SPRAINS/TEARS

- No Fracture
- Effusion/Edema
- Symmetrical Mortise
- Tib/fib Clear Space (< 5mm is Normal)

Tib-Fib Clear Space

<5mm is Normal
TREATMENT SPRAINS/TEARS

- Non-operative treatment is the mainstay
- RICE principles
- Early motion (P.T.)
- Short term immobilization and progression of weight bearing may be in order
RED FLAGS/PEARLS
SPRAINS/TEARS

- Syndesmosis injury (High Ankle Sprain)
- TTP over navicular
- TTP over lateral process of talus
- TTP medial ankle and at proximal fibula
- TTP at 5th MT base
- TTP over talocrural joint
ANKLE FRACTURES

- Edema, may have obvious deformity
- Ensure exam of knee and foot
- Ensure adequate N/V exam
- If obvious deformity with N/V compromise reduce immediately
RADIOGRAPHIC FINDINGS IN ANKLE FRACTURES

- Ensure Adequate Views
- As a General Rule: Joint Above and Below
- Entire Lower Leg if TTP over Deltoid Ligament or Medial Maleolus fracture
CLASSIFICATION OF ANKLE FRACTURES

- Weber
- Lauge-Hansen
WEBER CLASSIFICATION

- Weber A
- Weber B
- Weber C
WEBER B
Lauge-Hansen Classification of Ankle Fractures

- Pronation - external rotation (PER)
- Pronation - abduction (PA)
- Supination - external rotation (SER)
- Supination - adduction (SA)
TREATMENT OF ANKLE FRACTURES

- If ankle fracture/dislocation, timely reduction and splinting essential
- Elevate
- Ice
- Post reduction N/V exam essential
- If closed injury and N/V intact may wait for surgical correction until swelling improves
REDUCTION OF ANKLE FRACTURE/DISLOCATIONS

- **BEND THE KNEE!!**
- Pull traction, accentuate, then reverse the deformity
- Quigley’s maneuver
- Molded splint
- Get adequate post-reduction radiographs
IN THE EVALUATION OF ANKLE INJURIES BE THINKING ABOUT:

- OLT of talus
- 5TH Metatarsal base fracture
- Lateral process of talus fracture
- Maisonneuve fracture
- Subtalar dislocation
CASE #1
IN CLOSING

- Ankle injuries common
- Correct diagnosis and treatment essential to reduce long term morbidity and mortality
- Remember the red flags
- If in doubt call the Orthopaedist on call
- Access our website
REFERENCES

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