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Disclaimer
Overview

- Indications
- Cast Vs Splint
- Materials Needed
- General Principles
- Splint
- Cast
- Self Evaluation
- Points to Discuss with Patient
Indications

- Soft-tissue ankle and foot injuries
- Severe ankle sprains and tendinopathy
- Isolated nondisplaced malleolar fracture
- Foot fracture of tarsals & metatarsals

Case courtesy of Kara Iskyan, MD, Medscape.com
Cast Vs Splint

**Casting**
- Definitive Management
- Does not allow for continued swelling
- Better control of ROM

**Splinting**
- Acute Management
- Allows for acute swelling
- May be static – preventing motion
- May be dynamic – functional or assisting with control
- ROM limited by application and compliance
- Stirrup helps prevent ankle inversion/eversion
Materials Needed

- Stockinette
- Trauma Shears
- 2 inch paper tape
- Chux pads
- Elastic Bandages (ACE Wrap)
- Padding (Webril)
- Water Receptacle (tepid water 70-80°)
- Splinting Material
  - Plaster of Paris, Pre-fabricated plaster or fiberglass (Orthoglass)
- Casting Material
  - Fiberglass
General Principles

- Measure out dry material at extremity being treated
  - Plaster shrinks slightly when wet; If too long can fold ends back
  - Can be measured on contralateral extremity
- Apply 2-3 layers of webri, avoid wrinkles, place extra padding on bony prominences and between digits if needed
- Use approximately 10-12 layers of splinting material (dependent on size of individual)
- Mold with palms of hand vs fingers
- After complete check for function, arterial pulse, capillary refill, temperature of skin, and sensation
- Plain films or fluoroscopy to evaluate injury and splint/cast
Splinting Order

- Place patient in prone position when possible
- Ankle flexion at 90°
  - Exception for Achilles injury
  - Ankle will be placed in equinos
- Ensure ankle is neither inverted nor everted
Splinting Order (cont)

Apply stockinette and/or webril first
Apply wet/prepared splinting material
Cover with webril
Secure with elastic (ACE) band
Mold splinting material as needed
Casting Order

- Apply stockinette first, then webril
- Apply wet/prepared initial casting material
- Fold over excessive stockinette
- Apply second layer of wet/prepared casting material
- Mold casting material as needed
Self Evaluation

Is injured extremity in desired position?

- Ankle dorsiflexion at 90°
- Ankle without eversion/inversion
- Neurovascularly intact distally
- Does injured extremity maintain good color, temp, and cap refill

Were thermal injuries avoided by ensuring water was not hot and cast was not too thick?
Molding

- Place lateral aspects of thumbs on the malleolus and apply even pressure
- Place palm of hand on calcaneus and apply pressure
- Place palm of hand on the plantar surface and apply pressure
  - Pressure application should be held until the contours take shape
Patient Education

- Elevate injured extremity at home
  - Prop on pillow if needed
- Continue moving other toes, knee, and hips periodically throughout the day
- If cast feels tight despite elevation seek medical assistance
- Do not scratch under cast; do not get cast wet
- Get immediate assistance if:
  - Numbness (pins and needles) of toes
  - Excessive swelling of toes
  - Blueness or whiteness of toes
  - Severe pain
Conclusion

- Indications
- Cast Vs Splint
- Materials Needed
- Key Points Before any Casting/Splinting
- Splint
- Cast
- Self Evaluation
- Points to Discuss with Patient
References


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