Post-Operative Management of Ankle Surgery

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Disclosures

- None relevant to contents of talk
- My protocol is a product of my mentors, trial and error, and occasional evidence-based medicine…yours may differ.

Objectives

- Understand key components in post-operative ankle rehabilitation

Considerations that we all have…

- Time to ROM
- Time to WB
- Time to strengthening/conditioning

…must be considered with…

- Type of injury
- Time to healing of BONE AND SOFT TISSUES
  - Systemic diseases
  - Nature of injury
    - Open?
    - High energy?
    - Articular
  - Method of fixation

We are dealing with rotational ankle fxs…

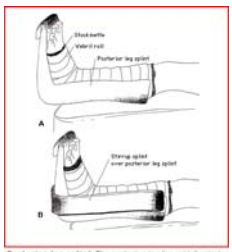
…not pilons

My principles

- Soft tissues (especially skin) and construct quality will always dictate how aggressive I will proceed
- ROM of affected AND adjacent joints are a must
- Always consider the host

My "rehab" begins right after the surgery

- Splinting – AO splint
  - **NEUTRAL**
- Soft tissue rest begins
- The most sterile dressing



Posterior leg splint. The posterior leg (or ankle) splint is used for distal leg, ankle, tarsal, and metatarsal fractures. Reproduced with permission from: Klig, J. Splinting procedures. In: Textbook of Pediatric Emergency Procedures, Henretig, F., King, C., Joffe, M (Eds), Lippincott, Williams & Wilkins, Baltimore, 1997. p.1025. Copyright © 1997 Lippincott Williams & Wilkins.

ROM

- Soft tissue rest
  - 2-3 weeks (leave in splint) – **1st POSTOP visit**
  - Initiate DF/PF, with gradual emphasis on stretching
    - Heel cord
    - Toes
  - Circumduction
    - Inversion/Eversion
    - Circumduction
- **Adequate ROM is necessary for adequate strengthening**

ROM

- Focus:
  - Avoid heel cord tightening
    - Splint post-op to avoid eqinus
    - Important for gait, stair climbing, rising from chair
  - Toe stretching
    - Hammer toe deformities
  - PTT and peroneal motion
    - Hindfoot and accommodation
- Maintain Neutral position at rest

Weight bearing

- Initiate gradual WB around 6-8 weeks (or sooner) – **2nd POSTOP visit**
  - Gait training
    - Heel-toe progression
    - Core strengthening
    - Transfers
  - Check progression of ROM
    - Marker of what to expect
  - Start with CAM Boot – gradual wean off

Time to WB

- Typically 6-8 weeks
  - Prolonged in DM, poor healers
  - Soft tissues take longer to heal
    - Syndesmosis
- Immediate weight bearing?

J Orthop Trauma. 2016 Jul;30(7):345-52. doi: 10.1097/BOT.0000000000000572.

Early Weightbearing and Range of Motion Versus Non-Weightbearing and Immobilization After Open Reduction and Internal Fixation of Unstable Ankle Fractures: A Randomized Controlled Trial

Dehghan N[1], McKee MD, Jenkinson RJ, Schemitsch EH, Stas V, Nauth A, Hall JA, Stephen DJ, Kreder HJ.

J Bone Joint Surg Am. 2017 Feb 15;99(4):350. doi: 10.2106/JBJS.16.01382.

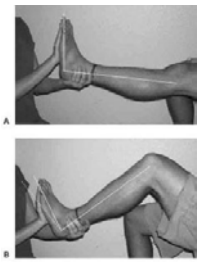
Early, Rather than Late, Weight-Bearing and Range-of-Motion Exercise Improved Early Function But Not Time to Return to Work After Surgical Fixation of Unstable Ankle Fractures.

Gorczyca JT[1].

Strengthening

- Once ROM and sufficient bone healing is achieved (8-12 weeks) – **3rd POSTOP visit**
- PF and DF strength
- Peroneal and PTT strength
- Proprioception

Problems



- Contractures
  - Toes
    - Hammer toes
  - Ankle
    - Heel cord (**Silfverskiold test**)
    - Peroneals, PTT
- Complex Regional Pain Syndrome
  - Referral?
  - Therapy (TENS, densensitization, contrast bath, mirror box)
  - Medication (bisphosphonates, ketamine, calcitonin)
  - Spinal cord stimulators
  - Sympathectomy
  - Amputation

Expectations must be laid out

- 6 weeks – 50-60%
- 12 weeks – 75-85%
- 6 months – 95%
- 1 year – 100%; “afterthought”
- Disclaimer to patient: if “ideal” conditions are met
- Why so long?

Conclusion

- Always consider host factors
- Always consider soft tissues
- Effective therapy avoids most problems
- Set clear expectations for your patient

Thank you

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