Connecticut Orthopaedics

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Ankle Fracture
Non-Operative Protocol

Adapted from South Bend Orthopaedics

Ankle fractures are common injuries both in young and older patient populations caused by both low energy (trip or fall) and high energy (automobile accident) trauma. Although there are multiple ways of describing ankle fractures and no two fractures are exactly alike, the most important aspect of how we treat your ankle fracture depends on whether the ankle fracture is stable or unstable.

There are two basic types of ankle fractures:

1. **High Energy Axial Injuries:** Pilon
2. **Rotational Injuries**
    - Malleolar—either medial or lateral
    - Bimalleolar—both medial and lateral
    - Trimalleolar—includes posterior malleolus

The direction of the force determines the fracture pattern – external rotation, abduction, adduction. The goal of treatment is to maximize the long-term function of the ankle by restoring and maintaining alignment. If surgery is not required: closed reduction then casting. If surgery required: ORIF and casting. The amount of weightbearing allowed is based on the quality of the fixation, quality of the bone and the healing status of the fracture. If the fixation is secure and stable, the expectation is for the patient to begin early AROM once the wounds are healed ~ two weeks status post. Edema control and scar massage are also implemented at this time. Weightbearing is usually allowed at 4-6 weeks status post and PROM at 6 weeks. Once the fracture is healed, progressive ROM and open and closed kinetic chain exercises are initiated.

Classification System

1. **Weber/AO:** categorizes fractures on level of the fibular fracture.
    a. Type A – Fractures below the tibial plafond and typically transverse.
    b. Type B – Fractures at level of tibial plafond and typically extend proximally in a spiral or short oblique fashion.
    c. Type C – Fractures above the tibial plafond and associated with syndesmotic injuries.
2. **Lauge-Hansen** – categorizes fractures on position of foot at time of injury.
    a. Supination-Adduction (Stage I & II)
    b. Supination-External Rotation (Stage I, II, III, IV)
    c. Pronation-Abduction (Stage I, II, III)
    d. Pronation-External Rotation (Stage I, II, III, IV)

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Rehabilitation Guidelines

The ankle is placed into a cast or boot to immobilize the bones while they heal.

This is a general guideline. Specific changes may be indicated on a case-by-case basis at the discretion of your surgeon

Phase I: Initial Stability (Weeks 0-6)

GENERAL TREATMENT:

- General lower extremity strengthening (SLR, quad sets, etc)
- Edema control
- Non weight bearing (NWB) until allowed by physician
- ***Weight bearing as determined by physician.*** Depends on fracture pattern and healing, may be longer. Your surgeon will Xray your ankle and tell you when it is safe to begin putting weight on your foot.

Weeks 1-2

- Elevation of the leg above the heart as much as possible
- Ice behind knee to minimize swelling and control pain
- Wiggle toes, bend hip and knee to avoid muscle atrophy

Week 2

- Cast change (if applicable)

Phase II: Early Range of Motion/Gait Training (Weeks 4-8)

Week 4

- Xrays, transition to boot if casted
- ***Weight bearing as determined by physician.*** Depends on fracture pattern and healing, may be longer; your surgeon will xray your ankle and tell you when it is safe to begin putting weight on your foot
- Come out of the boot and begin to move your ankle up and down for 5-10 minutes, 5 times per day to maintain range of motion
- Compression stocking to be worn and control swelling along with ice/elevation
- May remove boot to sleep

Weeks 4-6: **Weight bearing begins**

- Depends on fracture pattern and healing, may be longer. Your surgeon will xray your ankle and tell you when it is safe to begin putting weight on your foot
- Progressive weight bearing in boot, using crutches/walker, starting with 25% weight and increasing by 25% every 1-2 weeks until fully WB in boot
- Use a scale if available to estimate weight bearing. Put most of your weight on the crutches and opposite leg, then load the scale with the operative leg until it reads 25% of your weight. This is a rough guide that should be used for the first week, then increase to 50%, etc.
- When you hit 75%, begin to use one crutch in the OPPOSITE arm.

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Weeks 6-8 (FRACTURE HEALED)

- Wean out of boot—fit with air cast or ASO in normal shoe. When transitioning to regular shoe, ambulate first around the house and then progress to outside.
- Increase weight bearing to full
- Advance daily stretching
- Ankle isometrics progressing to open chain isotonics
- Closed chain exercise (weight machines, weight shifts, seated BAPS)
- Proprioception exercise (SLB, diagonal doming and foot intrinsic strengthening)
- Joint mobilizations to increase talocrural and subtalar ROM

Phase III: Return to Function (Weeks 8-12)

Weeks 8-10

- Progress closed chain exercises (Sportcord, lunges, heel raises, etc, standing BAPS, exercise bike, swimming)
- Dynamic balance progression (mini tramp, SLB on uneven surfaces, Star excursion, steamboats, lunges)
- Advanced proprioception exercises
- Continue to advance weight machine exercises, stretching, ROM and joint mobilizations
- Treadmill walking program

Weeks 12-16

- May return to jogging program, running, and higher impact activities
- Fit for orthotics if needed
- Progress previous strengthening, stretching, and proprioception exercises
- Sport and agility drills/tests

PHYSICAL THERAPY: start between 2-6 weeks post injury, focus on motion and swelling at first, then gait training and strengthening. At 12 weeks, begin gentle running/higher impact activities.

DRIVING: You may begin driving when you are fully weight bearing on the right foot without crutches if right ankle. Be certain to practice in a parking lot or lightly used road before getting on the major roads. DO NOT DRIVE WITH BOOT ON RIGHT ANKLE. If left ankle, may drive automatic transmission car when off narcotic pain medications.

RETURN TO PLAY/ACTIVITIES: Once you can come up and down on your toes (single heel rise) on the injured side, or you can hop on the injured foot (single leg hop), you may return to sports and all activities. This may take 6 months to a year. This is no guarantee on outcome. All conservative management options have risk of worsening pain, progressive irreversible deformity, and failing to provide substantial pain relief. All surgical management options have risk of infection, skin or bone healing issues, and/or worsening pain. Our promise is that we will not stop working with you until we maximize your return to function, gainful work, and minimize pain.

STOOL SOFTENERS: While on narcotic pain medication (e.g. Norco/hydrocodone or Percocet/oxycodone), you should take stool softener (e.g. Miralax, docusate, senna). Discontinue if you develop stool or diarrhea.

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