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Modified Brostrom Procedure Rehab Protocol

Special consideration to be taken if a Microfracture procedure is performed in conjunction with the Modified Brostrom Procedure. See below weight-bearing and impact restrictions to be considered

Phase 1 – Maximum Protection Phase (0-3 weeks)

Goals

- Protect integrity of graft
- Minimize effusion
- ROM per guidelines
- Prevent muscular inhibition
- Scar tissue mobility

Precautions

- No inversion or eversion
- PROM or AROM to be performed in Phase I
- Boot to be worn at all times for ambulation

Post-Op Physical Therapy

- 1st physical therapy visit to occur 2 weeks post-op
- Assessment of AROM into PF and DF only, proximal strength in NWB (hip, knee and core), swelling, and scar tissue mobility

Immobilization

- Waling boot: worn 0-6 weeks at all times, including while sleeping

Weight Bearing

- Full weight bearing in walking boot
- Non-weight bearing when not wearing boot (therapy, bathing, changing attire, etc)
- **IF Microfracture Procedure performed: NWB for 2-4 weeks, per physician**

Range of Motion

- Dorsiflexion: 0-10°
  - AROM, AAROM, PROM
- Plantarflexion: 0-20°
  - AROM, AAROM, PROM
- **NO inversion** or **eversion** to be performed in this phase
- If **PASS** AROM check and patient has adequate proximal strength, as well as good understanding of restrictions and HEP begin follow-up in physical therapy at 4 weeks post-op
- If **NOT** pass AROM and proximal strength check, begin physical therapy immediately with emphasis on early ankle ROM and talocrural joint mobility

Manual Therapy

- Scar mobility following closure of incision
- Gentle flexibility for lower extremity musculature
- PROM/AROM ankle DF/PF within above listed ROM
- Talocrural Joint mobilizations (Grades I-II) – **NO subtalar joint mobilizations**
- Emphasis on enhancing DF ROM if patient does not pass above ROM check (10°-0°-20°)

Strengthening

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- Hip and core strengthening
  - Weeks 0-3: Multi-plane OKC SLR, straight leg bridging, etc.
- Intrinsic foot strengthening in NWB position (I.e. toe extension, toe flexion, splaying of the toes)
- Sub-max isometrics of the ankle initiate with neutral foot position and performed in long sitting (not inversion)

Modalities

- Vasopneumatic compression for edema management, 2-3x/week (15-20 min)
- Cryotherapy at home, 3x per day for 20 minutes, ankle elevated above heart

Phase 2 – Maximum Protection Phase (3-6 weeks)

Goals

- Protect integrity of graft
- Minimize effusion
- ROM per guidelines listed
- Prevent muscular inhibition
- Scar tissue mobility

Precautions

- No inversion PROM or AROM
- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for at least 12 weeks
- Avoidance of impact activity for 10 weeks if isolated Modified Brostrom Procedure performed, 12 weeks if **Microfracture** procedure performed

Immobilization

- Waling boot: worn 0-6 weeks at all times, including while sleeping

Weight Bearing

- Full weight bearing in walking boot
- Non-weight bearing when not wearing boot (therapy, bathing, changing attire, etc)
- **If Microfracture Procedure performed: NWB for 2-4 weeks, per physician**

Range of Motion

- Dorsiflexion: 0-10°
- Plantarflexion: 0-40°
- Initiate eversion AROM – no PROM to end range
- **NO** inversion in Phase 2

Manual Therapy

- Scar mobility when incisions closed
- PROM within restrictions above
- Joint mobilization to talocrural joint (Grades I-III)

Strengthening

- Limited ankle and foot strengthening (towel crunches, marble pick-ups, DF/PF light band strengthening, etc)
- Lower extremity Strengthening
  - Hip strengthening (continue OKC hip strengthening)
  - Quat strengthening (quad sets, leg-press, wall squats, etc)
  - Hamstring strengthening (prone hamstring curls, physio-ball curls, etc)
- Core Strengthening

Aquatics

- Initiate aquatic therapy program when incisions closed

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- Focus on normalizing gait pattern at reduced body weight (>50%)

Neuromuscular Control

- Double leg balance tasks
- Stable surfaces only

Modalities

- Vasopneumatic compression for edema management, 2-3x/week (15-20 min)
  Cryotherapy at home, 3 x per day for 20 minutes, ankle elevated above head

Phase 3 – Moderate Protection Phase (6-12 weeks)

Goals

- Protect integrity of graft
- Restore full ankle ROM
- Increase neuromuscular control tasks in a safe environment
- Restore full strength of ankle and lower extremity

Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for at least 12 weeks
- Avoidance of impact activity for 10 weeks if isolated Modified Broström

Immobilization/Weight bearing

- 6-8 weeks (WBAT): Soft ankle orthosis (ASO, Impact, etc) to be purchased for gradual progression out of walking boot
- 8-12 weeks (WBAT): Soft ankle orthosis (ASO, Impact, etc) to be worn when walking on uneven surfaces, busy environments, and during all athletic or sporting activities

Range of Motion

- Restore full ankle ROM in all planes (can begin inversion)

Manual Therapy

- Scar mobility when incisions closed
- Joint mobilization to talocrural joint (Grades I-III)
- Emphasis on enhancing DF ROM to reach 10°
- Gentle rearfoot glides to be added in this phase

Strengthening

- Stationary bike or elliptical
- AROM of ankle in all planes (sitting rocker board, ½ foam roller rocks, BAPS board, etc)
- Ankle and foot strengthening (band strengthening, bent & straight knee heel raises, supinated single leg stance, etc)

Lower extremity strengthening

- Weeks 6-9: Focus on CKC activities in the sagittal plane
- Weeks 9-12: Progression to multi-directional CKC activities as able (based on observed single leg strength and dynamic stability)

Aquatics

- Continue aquatic therapy program prn

Neuromuscular Control

- Continue proprioception training
- Weeks 6-9: Focus on stable surfaces with decreasing UE support and progression to SL balance

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Procedure performed, 12 weeks if **Microfracture** procedure performed

- Weeks 9-12: Progression to unstable surfaces, perturbations, and/or dual tasking (Double leg à Single leg)

Modalities

- Vasopneumatic compression for edema management, 2-3x/week (15-20 min)
- Cryotherapy at home, 3 x per day for 20 minutes, ankle elevated above heart

Phase 4 – Return to Activity Phase (12-24 weeks)

Goals

- Progress single leg muscle strength, endurance and balance
- Initiate impact activity
- Sport or work specific tasks

Return to Function Testing

- Week 12-16: per MD approval
- Criteria to pass: pain-free, full ROM, minimal joint effusion, 5/5 MMT strength, jump/hop testing at 90% compared to uninvolved, adequate ankle control with sport and/or work specific tasks

Brace

- PT to transition out of the brace as able with ROM, strength, and proprioceptive gains

Weight bearing/Range of motion

- Full weight bearing without restriction
- Restore full ankle ROM in all planes

Manual Therapy

- Restore lower extremity flexibility
- AROM and PROM in all planes, as needed
- Joint mobilization to talocrural joint (Grades III-IV), as needed

Strengthening

- Stationary bike or elliptical
- Unilateral gym strengthening program (single leg calf raises, single leg squats, eccentric leg press, step-up progression, multi-directional lunges)
- Initiate impact activities
- 10 + weeks: initiation to impact exercise, sub-maximal bodyweight à maximal (pool, GTS, plyo-press, Alter G), sagittal plane jogging only
- 12 + weeks: multi-directional agility drills, cutting, pivoting and plyometrics
- If **Microfracture Procedure** performed sub-maximal impact not to start until 12 weeks, sagittal plane jogging at 12 weeks, multi-directional agility at 14 weeks
- Core strengthening

Neuromuscular Control

- Advanced proprioception
- Un-stable surfaces
- Perturbations
- Dual tasking
- Add sport/work specific balance tasks as able

Modalities

- Cryotherapy after activity

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- Soft ankle orthosis (ASO, Impact, etc) to be continued during all athletic or sporting activities

This protocol was updated and reviewed by Dr. DeVries of Orthopedics & Sports Medicine BayCare Clinic Manitowoc and Andrea Agen, PT, DPT, Corey Vogel, PT, DPT and Kim Kuehl, PT, DPT on 05/22/2024.

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