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Grade III MCL Protocol:

Precaution: Avoid Valgus stress throughout all knee motion exercise. Emphasis by verbal feedback proper knee position to avoid valgus alignment.

Acute Injury Phase:

- Initial immobilization to allow resolution of acute post injury pain, swelling, and allow stick down of healing ligament.
- Compression type stocking
- Ice packs PRN for pain and swelling
- Elevation

Note to Therapist: Please do not perform physical exam stress / test MCL during first 8 weeks!

Initial Phase: From day 7 - 10 to week 4

- Hinged knee brace (wear day and night, except showers)
 - Lock the knee straight (full extension) at night until cleared for removal by MD.
 - Wear brace for exercises.
 - EXCEPTION: Ok to perform ROM out of brace with knee in figure 4 position / hip external rotation to offload MCL.
 - Brace molded to apply varus stress
- Utilize abundant cryotherapy (30 min on every 3 – 4 hrs)
 - Ok to unlock brace and open for icing. Do not torque knee into valgus during brace opening.
- Elevate as much as possible
- Range of Motion
 - Start to restore knee ROM
 - Begin with PROM and progress to AAROM as pain level allows
 - ROM 0 – 90 for first 3 weeks and then goal of at least 100 degrees by end of Initial Phase
 - Maintain knee full extension
 - Brace unlocked for ROM 3 times a day
 - Emphasize avoidance of valgus position of knee during ROM
 - EXCEPTION: Ok to perform ROM out of brace with knee in figure 4 position / hip external rotation to offload MCL.
- E-stim – brace can be opened for placement of electrodes
 - Avoid valgus stress while brace is open
- Stationary bike

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- Continue to decrease swelling
- Strengthening
 - Start ankle pumps – to be done hourly
 - Start isometric quad – to be done hourly
 - Progress with exercises with goal for 4/5 quad and hamstring strength through non-weight bearing exercise, straight leg raise. Constant verbal feedback to avoid valgus stress. No resistive exercise until motion at least 0 – 90.
- Weightbearing
 - Starting week 2, progressively increase weight-bearing by 25% each week with goal to restore full weight bearing by 6 weeks
 - Use brace while ambulating

Phase II: Weeks 4 – 6

- Continue cryotherapy, E-stim and Initial Phase modalities
- Begin closed kinetic chain exercise from 0 – 90 and progress with resistance as tolerated
- Stair stepper
- Prone straight leg raise
- Continue stationary bike and lower seat to increase knee motion
- Static proprioception
- MD re-evaluation for continued hinged knee brace. (It is often required for ambulation up to weeks 7 – 9).
- Progress to WBAT. Discontinue crutches when gait normalized.

Goals:

- Continue to decrease swelling
- Obtain full ROM
- Obtain 5/5 quad/ham strength

Phase III: Weeks 6 – 10

- Begin treadmill jogging, elliptical
- Avoid aquatic therapy and kicking motion for 8 weeks
- Start balance and proprioceptive exercises
- Ok to start open chain quad and seated hamstring curls
- Hip adduction/abduction exercise
 - **Resistance applied above the knee joint to avoid valgus stress

Goals:

- Full squat
- Return to light jogging
- Prepare to return to agility drills

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Phase IV: Weeks 8 – 12

- Plyometrics
- Wean into agility/sport specific drills
- Continue dynamic proprioceptive training

Brace:

- Brace for at least 6 weeks. Consider transition to more functional hinged brace at 6 – 8 weeks.
- Consider brace use up to 6 – 12 months post injury.

Functional Running Program:

*Begin after full range of motion, full weightbearing without pain, and pain-free jogging has been achieved

- Jog 1 mile
- Five successive 80 yard sprints at ½ speed
- Five successive 80 yard sprints at ¾ speed
- Five successive 80 yard sprints at full speed
- Five zigzag sprints at ½ speed
- Five zigzag sprints at full speed

Adapted from:

Noyes' Knee Disorders

Giannotti BF. Sport Med Arthrosc Rev 2006.

Edson CJ. Sport Med Arthrosc Rev 2006.

Reider B. American Journal of Sports Medicine 1994.