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Meniscus transplant

I) Weeks 0-6:

- Restrictions:
 - 1) Immobilizer must be on at all times when walking.
 - 2) PWB with the knee in full extension using crutches

- Goals:
 - 1) Active ROM: 0-90 degree maximum.
 - 2) Reduce muscle atrophy.
 - 3) Reduce swelling.

- Outcome measures at initial visit:
 - 1) PSFS: Patient specific functional scale.
 - 2) LEFS: Lower extremity functional scale.

- Anti-edema
 - 1) Ice/Cryotherapy multiple times during the day
 - 2) Compression with TubiGrip/TEDS

- Therapy/Exercises examples:
 - 1) ROM (limit 90 degree max):
 - a. Long sitting heel slides.
 - b. Hook lying heel slides.
 - c. Prone knee flexion.
 - d. Supine wall slides.
 - e. Supine knee extension with towel under ankle.

- f. Prone hangs.
- g. Patellar mobilizations.
- h. Thigh and hip soft tissue mobilization.

2) Core work examples:

- a. Crunches.
- b. Prone superman.
- c. Oblique Crunches.
- d. Prone plank with immobilizer on.
- e. Side plank with immobilizer on.

3) Hip work examples:

- a. Gluteal sets.
- b. Belt abduction isometrics.
- c. Pillow adductor squeezes.
- d. Straight leg raises as comfort allows.
 - (a) Flexion.
 - (b) Abduction.
 - (c) Extension.
 - (d) Adduction.
- e. Prone heel squeeze.
- f. Standing hip Theraband in all planes.

4) Lower extremity exercise examples:

- a. Quad sets.
- b. Hamstring sets.
- c. Ankle DF and PF isometrics against crutch.
- d. Ankle Theraband in all planes as comfort allows.

II) Weeks 6 to 14:

· Restrictions:

- 1) Progress to WBAT (wean crutches)
- 2) No jogging/sport activity

· Goals:

- 1) Reduce effusion
- 2) Full ROM
- 3) Minimize hip, core and lower extremity atrophy

· Therapy/Exercise examples:

1) ROM (No limit):

- a. Long sitting heel slides.

- b. Hook lying heel slides.
- c. Prone knee flexion.
- d. Supine wall slides.
- e. Supine knee extension with towel under ankle.
- f. Prone hangs.
- g. Patellar mobilizations.
- h. Thigh and hip soft tissue mobilization.

2) Gait training:

- a. Weight shifts.
 - (a) Side to side.
 - (b) Forwards and back.
 - (c) Single leg stance.
 - (i) Advance to cushion, ½ roll, ball catches.
- b. Gait mechanics training.
 - (a) High knees.
 - (b) Big steps.
 - (c) Side shuffle walking speed.
 - (d) Carioca walking speed.

3) Core work examples:

- a. Upper back six pack on ball.
- b. Prone walk out on ball.
- c. Side crunch on ball.
- d. Continued plank work.

4) Hip work/lower extremity work examples:

- a. Continued Standing hip Theraband in all planes.
- b. As weight bearing comfort allows: (85 degree knee flexion limit)
 - (a) Step ups.
 - (b) Mini lunge.
 - (c) Mini squat.
 - (d) Wall squat.
 - (e) Wall squat with tubing valgus stress.

5) Aerobic conditioning:

- a. When walking with normal gait mechanics.
- b. Build up to 30 minutes of non-impact conditioning.
- c. Knee flexion angles do not exceed 90 degrees.
 - (a) Elliptical trainer.
 - (b) Stairmaster.
 - (c) Standard stationary bike.

III) Weeks 14 to 22:

- Restrictions:
 - 1) No loading at flexion angles greater than 90 degrees

- Goals:
 - 1) Full active range of motion
 - 2) No effusion
 - 3) Improved core and hip strength and endurance

- Outcome measures at final visit:
 - 1) PSFS: Patient specific functional scale.
 - 2) LEFS: Lower extremity functional scale.

- Weight bearing:
 - 1) Maximize proprioceptive training:
 - a. Cushion work.
 - b. Bosu ball.
 - c. ½ roll.
 - d. Sport specific:
 - (a) Ball catches.
 - (b) Ball throws.
 - (c) Stick handling.

 - e. Home “Y-balance”.

- Therapy/Exercises:
 - 1) Core work examples:
 - a. Upper back six pack on ball.
 - b. Prone walk out on ball.
 - c. Side crunch on ball.
 - d. Continued plank work.
 - e. Back bridge single arm dumbbell fly.
 - f. Bridge.
 - g. Quadruped hip extension.
 - h. Quadruped bird dog.

 - 2) Hip work/lower extremity work examples:
 - a. Continued Standing hip Theraband in all planes.
 - b. Seated hip IR and ER against Theraband.
 - c. 85 degree knee flexion limit
 - (a) Step ups with dumbbells.
 - (b) RNT step ups.
 - (c) Mini lunge with dumbbells.

- (i) Two dumbbells.
- (ii) One dumbbell in either hand.

- (d) Sumo squat with weight elevated on boxes.
- (e) Wall squat with tubing valgus stress.
- (f) Hockey side lunge.
- (g) Limited range dead lift.

3) Aerobic conditioning:

- a. When walking with normal gait mechanics. b. Build up to 30 minutes of non-impact conditioning. c. Knee flexion angles do not exceed 90 degrees. (a) Elliptical trainer.
- (b) Stairmaster.
- (c) Standard stationary bike.