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Cartilage restoration (OATS, MACI) femoral Physical Therapy Protocol

POST-OPERATIVE PHASE I: Weeks 0-6

PRIMARY GOALS:

- protect healing tissue
- decrease pain and effusion,
- gradually improve knee flexion
- restore passive knee extension
- regain quad control

BRACE:

- locked at 0 degrees for ambulation
- sleep in locked brace for 4 weeks

WEIGHT-BEARING:

- NWB (if graft site is MFC)
- WBAT (if graft site is patella or trochlea)

ROM:

- full passive knee extension immediately
- CPM POD 1 for a total of 6 hours per day x2-3 weeks progress
- CPM ROM as tolerated 5-10 degrees per day, up to 6w
- Knee flexion ROM goal: 90 degrees by 1-2w
- Knee flexion ROM goal: 105 degrees by 3-4w,
- 120 degrees by 5-6w
- patellar mobilization
- stretch hamstrings and calf

STRENGTHENING:

- ankle pump using rubber tubing
- quad sets
- multi-angle isometrics
- active knee extension (no resistance)
- SLR
- biofeedback and electrical muscle stimulation prn
- isometric leg presses by week 4
- May begin use of pool for gait training and exercises by week 4

POST-OPERATIVE PHASE II: Weeks 6-12

PRIMARY GOALS:

- gradually increase ROM
- improve quad strength/endurance
- increase in functional activities

BRACE:

- D/C by week 6-8, when quad control

WEIGHTBEARING:

- progress WBAT
- FWB by 7-8 weeks
- D/C crutches by 7-8 weeks (if graft site is MFC)

ROM:

- maintain full passive knee extension
- progress to flexion to 125-135 degrees by week 8
- continue stretching program as well as patellar mobilization

STRENGTHENING:

- initiate weight shifts week 6
- mini-squats 0-45 degrees by week 8
- closed kinetic chain (leg press)
- toe calf raises by week 8
- stationary bicycle (low resistance)
- treadmill walking by weeks 10-12
- balance and proprioception drills
- initiate front and lateral step-ups and wall squats by weeks 8-10
- continue use of biofeedback and electrical stimulation prn
- use of pool for gait training and exercise

POST-OPERATIVE PHASE III: Weeks 12-26

ROM:

- 0-125 to 135 degrees
- Incorporate home exercise program for strengthening and maintenance 3-4 times per week.
- Progress resistance as tolerated, agility and balance drills, sports programs depending on patient
- Gradual return to full unrestricted functional activities by 6 months and beyond.