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REHAB PROTOCOL: Matrix-Induced Autologous Chondrocyte Implantation (MACI)-Femoral Condyle

Name: _____

Date: _____

Diagnosis: _____

Date of Surgery: _____

Phase I (Weeks 0-12)

Weightbearing:

- o Weeks 0-2: Non-weightbearing
- o Weeks 2-4: Partial weightbearing (30-40 lbs)
- o Weeks 4-6: Continue with partial weightbearing (progress to use of one crutch at weeks 6-8)
- o Weeks 6-12: Progress to full weightbearing with discontinuation of crutch use

Bracing:

- o Weeks 0-2: Hinged knee brace locked in extension– remove for CPM and rehab with PT
- o Weeks 2-4: Gradually open brace at 20° intervals as quad control is obtained
- o D/C brace when patient can perform straight leg raise without an extension lag

Range of Motion – Continuous Passive Motion (CPM) Machine for 6-8 hours per day for 6 weeks

- o Set CPM to 1 cycle per minute – set initially at 0-30°
- o Increase flexion 5-10° per day until full flexion is achieved
 - Should be at 90° by week 4 and 120° by week 6
- o PROM/AAROM and stretching under guidance of PT

Therapeutic Exercises

- o Weeks 0-2: Straight leg raise/Quad sets, Hamstring isometrics
 - Perform exercises in the brace if quad control is inadequate
- o Weeks 2-6: Begin progressive isometric closed chain exercises** (**see comments**)
 - At week 6 can start weight shifting activities with operative leg in extension
- o Weeks 6-10: Progress bilateral closed chain strengthening, begin open chain knee strengthening

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- o Weeks 10-12: Begin closed chain exercises using resistance (less than patient's body weight), progress to unilateral closed chain exercises
- o At week 10 can begin balance exercises and stationary bike with light resistance

Phase II (Weeks 12-24)

Weightbearing: Full weightbearing with a normal gait pattern

Range of Motion – Advance to full/painless ROM

Therapeutic Exercises

- o Advance bilateral and unilateral closed chain exercises
 - Emphasis on concentric/eccentric control
- o Stationary bike/Treadmill/Stairmaster/Elliptical
- o Progress balance/proprioception exercises
- o Start sport cord lateral drills

Phase III (Months 6-9)

Weightbearing: Full weightbearing with a normal gait pattern

Range of Motion – Advance to full/painless ROM

Therapeutic Exercises

- o Advance strength training
- o Start light plyometric exercises
- o Start jogging and sport-specific training at 6 months

Phase IV (Months 9-18)

Weightbearing: Full weightbearing with a normal gait pattern

Range of Motion – Full/Painless ROM

Therapeutic Exercises

- o Continue closed chain strengthening exercises and proprioception activities
 - Emphasize single leg loading
- o Sport-specific rehabilitation – running/agility training at 9 months
- o Return to impact athletics – 16 months (if pain free)
 - Maintenance program for strength and endurance

Comments: ** Weeks 2-6: need to respect the repair site: if anterior lesion avoid loading in full extension, if posterior lesion avoid loading in flexion >45 deg

Frequency: _____ times per week

Duration: _____ weeks

Signature: _____

Date: _____