Orthopaedic Sports Specialists, P.C.

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ACL Reconstruction - Accelerated Rehabilitation

Autologous Bone-Tendon-Bone, Patella Tendon Graft

I. Immediate Post-Operative Phase

POD 1

Brace – Post-Op hinged brace, locked in zero degrees immediate postop

Weight bearing - Two crutches as tolerated (less 50%)

Exercises

* Ankle pumps
* Passive knee extension to zero (out of brace)
  Towel roll under heel, ice bag on knee for passive extension stretch
* Straight leg raising
* Quad sets, glut sets
* Hamstring stretch

Muscle Stimulation - Muscle stimulation to quads

Ice and Elevation - Ice 20 minutes an hour & elevate with knee in extension

POD 2 to 4

Brace – Post-Op brace locked at zero degrees

Weight bearing - Two crutches as tolerated

Range of motion - Patient out of brace 4-5 times daily to perform self ROM

Exercises

* Multi-angle isometrics at 90,60,30 degrees (for quads)
* Intermittent ROM exercises continued
* Patellar mobilization
* Ankle pumps
* Straight leg raises (all 4 directions)
* Standing weight shifts & mini squats [(0-30) ROM]
* Hamstring curls
* Continue quad sets/glut sets

Muscle Stimulation - Electrical muscle stimulation to quads
quad sets, multi-angle isometrics and straight leg raises.

Ice and Elevation - Ice 20 minutes of every hour and elevate with knee in extension

POD 5 to 7

Brace – Post-OP brace locked in zero degrees

Weight Bearing - Two crutches as tolerated

Range Of Motion - Patient out of brace to perform range of motion 4-5 times daily

Exercises

* Multi-angle isometrics at 90,60,30 degrees
* Intermittent PROM-exercises
* patellar mobilization
* Ankle pumps
* Straight leg raises (all 4 directions)
* Standing weight shift and mini squats (0-30)
* Passive knee extension to 0 degrees
* Hamstrings curls
* Active knee extension 90 degrees to 40 degrees

Muscle Stimulation - Electrical muscle stimulation

Criteria for discharge from hospital

** Quad control (ability to perform good quad set and straight leg raise)*

** Full passive knee extension*
** Passive range of motion 0-90 degrees*
** Good patellar mobility*
** Minimal effusion*
** Ambulation with crutches*

II. Maximum Protection Phase (Week 2-3)

***Goals**: Absolute control of external forces & protect graft*
Nourish articular cartilage
Stimulate collagen healing
Decrease swelling. Prevent quad atrophy.

A. Week Two

Goals: Prepare patient for ambulation without crutches

Brace – Post-OP brace locked at 0 degrees for ambulation only, unlocked for self ROM. Some patients can come out of brace for this. (4-5 times daily)
Out of brace for household ambulation

Weight bearing - As tolerated (goal to discontinue crutches 7-10 days post-op)

Exercises:
* Multi-angle isometrics at 90,60,30 degrees
* Leg raises (4 planes)
* Hamstring curls
* Knee extension 90-40 degrees
* Mini squats (0-40) and weight shifts
* Passive range of motion 0-105 degrees
* Patellar mobilization
* Hamstring and calf stretching
* Proprioception training
* PRE Program - start with 1 lb, progress 1 lb per week

Swelling control - Ice, compression, elevation**B: Week Three**

Brace – Post-OP brace locked at 0 degrees for community ambulation only,
Remove for self ROM (4-5 times daily). Out of brace at home.

Full weight bearing - no crutches

Exercises

* Same as week two
* PROM-0-115 degrees
* Bicycle for ROM stimulus and endurance
* Pool walking program
* Initiate eccentric quads 40-100 (isotonic only)
* Leg press (0-60)
* StairMaster
* Nordic track

III. Controlled Ambulation Phase (Week 4-7)

Criteria to Enter Phase III

* AROM 0-115 degrees
* Quad strength 60% > contralateral side (subjective) (60 degrees of knee flexion)
* Unchanged KT Test (+1 or less)
* Minimal effusion

Goals: Control forces during walking

Brace: Discontinue bracing at this time – if good quad control.

KT 2000 Test - (Week 6, 20 and 30 lb test)

Exercises

* Same as week three
* Passive range of motion 0-130 degrees
* Initiate swimming program
* Initiate step-ups (start with 2" and gradually increase)
* Increase closed kinetic chain rehab
* Increase proprioception training

IV. Moderate Protection Phase (Week 7-12)

Criteria to Enter Phase IV

* AROM 0-125 degrees
* Quad strength 60% of contralateral leg (isokinetic test)
* No change in KT scores (+2 or less)
* Minimal effusion

* No patellofemoral complaints
* Satisfactory clinical exam

Goals: Protect patellofemoral joints articular cartilage
Maximal strengthening for quads, lower extremity

Isokinetic Test - (Week 10)

Exercises

* Emphasize eccentric quad work
* Continue closed chain exercises, step-ups, mini-squats leg press
* Continue knee extension 90-40 degrees
* Hip abduction/adduction
* Hamstring curls & stretches
* Calf raises
* Bicycle for endurance
* Pool running (forward/backward)
* Walking program
* StairMaster
* Initiate isokinetic work 100-40 degrees

V- Light Activity Phase (Month 2-1/2 to 3-1/2)

Criteria to Enter Phase V-
* AROM 0-125 degrees >
* Quad strength 70% of contralateral side,knee flexor/extensor rated 70-79%
* No change in KT scores (+2 or less)
* Minimal/no effusion
* Satisfactory clinical exam

Goals: Development of strength, power, and endurance
Begin to prepare for return to functional activities
Tests - Isokinetic test (week 10-12 and 16-18)

Exercises

* Continue strengthening exercises
* Initiate plyometric program
* Initiate running program
* Initiate agility drills
* Sport specific training and drills

Criteria to initiate running program:

* Satisfactory isokinetic test
* Unchanged KT results
* Functional test 70% > contralateral leg
* Satisfactory clinical exam

VI. Return to Activity Phase (Month 3-1/2 to 4-1/2)

Criteria to return to activities

* Isokinetic test that fulfills criteria
* Functional test 80% > contralateral leg
* Proprioceptive test 100% of contralateral leg
* Satisfactory clinical exam

Goals: Achieve maximal strength & further enhance neuromuscular coordination and endurance.

Tests - Isokinetic test prior to return, functional test

Exercises

* Continue strengthening program
* Continue closed chain strengthening program
* Continue plyometric program
* Continue running and agility program
* Accelerate sport specific training & drills

*Return to cutting and pivoting sports month 6 and depending on Neuromuscular control and strength parameters. Please call office with Questions