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Rehabilitation Protocol for Proximal Hamstring Repair

This protocol is intended to guide clinicians through the post-operative course for Proximal Hamstring Repair tendon repairs. This protocol is time based as well as criterion based. Specific intervention should be based on the needs of the individual and should consider exam findings and clinical decision making.

Therapeutic interventions should be included and modified based on the progress of the patient.

PHASE I: IMMEDIATE POST-OP (0-2 weeks AFTER SURGERY)

Rehabilitation Goals	• Allow healing of repaired tendon • Initiate early restricted and protected ROM • Prevent muscular atrophy • Decreased pain and inflammation
Precautions	• Post-op hip brace to limit hip flexion to 45 degrees • Brace at all times (aside from bathing) • Avoid hip flexion with knee extension
Weight Bearing Status	• Toe-touch WB with crutches
Intervention	Range of Motion • Active assisted and passive hip and knee flexion • Hip flexion ROM limit to 60 degrees of flexion Manual Therapy • Peri-incisional mobilization • STM along hamstring muscle group as needed • Myofascial (no lotion) release to posterolateral glute and lateral hamstring fascia/muscle • Attain and maintain neutral iliac position ipsilateral and contralateral to injured side with manual posterior rotations to ilium Stretching • Nerve gliding – if neural tension exists ○ **Do not stretch the hamstring** • Hip flexors – maintain neutral pelvis/spine throughout stretch • Gastrocnemius/Soleus stretching
Suggested Therapeutic Exercises	• Ankle pumps • Quad sets • AAROM and PROM hip flexion (60 degree limit) and knee flexion • Upper body circuit training or upper body ergometer
Criteria to Progress	• 2+ weeks post-op

PHASE II: IMMEDIATE POST-OP (2-6 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Reduce/resolve pain and edema • Good motor control and pain-free functional movements
Precautions	• Continue post-op hip brace ○ Hip flexion limit to 60 degrees • Increase brace hip flexion limit at week 4 gradually to 90 degrees by week 6 • Avoid hip flexion with knee extension • No active hamstring yet • No active hip extension exercises
Weight Bearing Status	• Progress weight-bearing to 25% for one week, 50% for one week, then to 75% for one week with crutches
Intervention	Range of motion • Active-assisted and passive hip and knee flexion Manual Therapy • Scar mobilization • Gentle cross friction massage to proximal tendon including proximal to attachment on ischial tuberosity • Manual trigger point release as needed to piriformis, quadratus femoris • Anterior hip glides with and without external rotation at the hip • Posterior/inferior belted hip mobilizations as needed for full flexion Stretching • Hip external rotation in flexion • **Limit/avoid piriformis stretching – only massage**
Suggested Therapeutic Exercises	• Gluteal setting in prone • Gluteal setting in supine ○ **Above must be performed appropriately before progressing any gluteal or hamstring muscle strengthening** • Low double leg bridge • Side-lying hip abduction • Standing calf raises • Continue with phase I exercises
Criteria to Progress	• 6 weeks post-op

PHASE III: LATE POST-OP (6-12 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Normalized gait • Gradually progress to full ROM • Improve neuromuscular control • Increase strength
Precautions	• Discontinue brace at 6-8 weeks per physician instructions
Weight Bearing Status	• Progressively wean crutches over the next 2 weeks to full weight-bearing
Suggested Therapeutic Exercises	• DL bridge with band around thighs • DL bridge with ball squeeze • DL bridge with upper back on bench • Plank with alternating leg lifts • Side plank with leg lift or oblique twists • Straight leg raise • Hamstring curls with antigravity • Hip extension antigravity 10 weeks post op can progress to the following strengthening exercises: • Single leg bridge, back on floor, foot on bench • Progress to ankle weight for all leg lifts • Wall slides • Clam shells • Partial squats • Step ups • Step downs Cardio • Stationary bike • Progressive slow walking on level surfaces • No running
Criteria to Progress	• Normalized gait all surfaces • Good control with functional movements without antalgic movement • Hamstring strength should become 5/5 with MMT when prone with knee at 90 degrees of flexion

PHASE IV: TRANSITIONAL (13-16 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Full ROM • Improve neuromuscular control • Improve strength/power/endurance • Enhance dynamic stability
Precautions	• Neoprene sleeve support as needed • No pain during strength training • No dynamic stretching or explosive moments
Weight Bearing Status	• Patient should be full weight-bearing at this time
Therapeutic Exercise	• Gentle hamstring stretching • Cautious use of weight training machines • Single leg closed chain exercises • Resisted step ups using sports cord around the waist • Double leg hamstring physio ball roll out • Double leg deadlift • Progress to single leg with spine rotation deadlift • Bridge on physio ball Cardio • Walk progression on level surface with gradual increase in speed and distance • Preparing to run
Criteria to Progress	• Good neuromuscular control in all planes without pain • Hamstring strength should be at 80-90% before running • Single leg hop cluster should be better than 85%

PHASE V: PROGRESSIVE RETURN TO SPORT (16-20 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Emphasis on gradual return to recreational activities
Precautions	• Neoprene sleeve support as needed
Therapeutic Exercise	• Progressive strengthening avoiding overload • Progress speed of resisted steps and add forward lean • Singe leg deadlift with band • Reverse lunge on slider ○ Progress load bearing and add concentric/eccentric phase • Kettle bell swing Cardio • Walk to jog progression • No sprinting • No speed work
Criteria to Progress	• Full ROM • No pain/tenderness • Satisfactory clinical exam including isokinetic testing • Walk to jog progression

PHASE V: UNRESTRICTED RETURN TO SPORT (16-20 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Progressively increase activities to prepare for unrestricted functional return to sport based on the patients goals

Therapeutic Exercise	• Continued isotonic strengthening exercises above
	• Continue ROM exercises
	• Progressive running/speed and agility
	• Jump training after 22 weeks
	
	Cardio
	• Progress step ups to resisted jump onto steps
	• Plyometric progression
	  ○ Double leg up/down
	  ○ Double leg forward/back
	  ○ Alternating lateral bounding
	  ○ Single leg jump
	  ○ Progress plyometrics to resisted plyometrics using band around waist
	• Ladder drills
	• Falling start runs
	• Mini hurdle runs
	• Sprint progression