SPORTS MEDICINE ASSOCIATES
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Geoffrey Glebus, DO
Diplomate American Board of Orthopedic Surgery
Direct Phone: 210-798-8563
Email: glebusteam@smasatx.com

POST-OP PROXIMAL HAMSTRING REPAIR

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 • Decrease pain and inflammation
Precautions	• • Post-op hip brace to limit hip flexion (45°) • Brace at all times (aside from exercise and bathing) • Avoid hip flexion with knee extension
Weight Bearing	• TDWB with crutches
Range of Motion	• Active assisted and passive hip and knee flexion • Hip flexion ROM limit 60° flexion
Interventions	*Manual Therapy* • Peri-incisional mobilization • STM along hamstring muscle group as needed • Myofascial (no lotion) release to posterolateral glute and lateral hamstring fascia/muscle (proximal 1/3 of lateral thigh) • Attain and maintain neutral iliac position ipsilateral and contralateral to injured side with manual posterior rotations to ilium *Stretching* • Nerve gliding (sciatic neural flossing): if neural tension exists – Do not stretch the hamstring • Hip flexors in Thomas test position (maintain neutral pelvis/spine throughout stretch) • Gastrocnemius/Soleus stretching *Therapeutic Exercise* • Ankle pumps • Quad sets • AA and PROM hip flexion (60deg limit) and knee flexion • Upper body circuit training or upper body ergometer (UBE)
Criteria to Progress	• 2+ weeks post-operative

PHASE II: INTERMEDIATE 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° • Increase brace hip flexion limit at week 4 gradually to 90° by week 6 • Avoid hip flexion with knee extension • No active hamstrings yet • No active hip extension exercises
Weight Bearing	• PWB 50% with crutches
Additional Interventions *Continue with Phase I interventions as indicated	*Manual Therapy* • Scar mobilization • Gentle cross friction massage to proximal tendon including proximal to attachment on ischial tuberosity • Manual trigger point release as needed (common area is within distal 1/3 of biceps femoris) • Manual trigger point release as needed with ART (active release therapy) to piriformis, quadratus femoris • Anterior hip glides with and without external rotation at the hip (hip in neutral to slightly extended) • Posterior/inferior belted hip mobilizations as needed for full flexion (belted quadruped position with active movement into child's pose) *Stretching* • Hip external rotation in flexion • Limit/avoid piriformis stretching (massage instead) *Therapeutic Exercise* • Gluteal setting in prone • Gluteal setting in supine *above must be mastered before progressing any gluteal or hamstring muscle strengthening* • Low Double Leg (DL) Bridge • Side-lying hip abduction • Standing calf raises • Strengthening of uninvolved limb ok
Criteria to Progress	• 6 weeks post-operative

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

Rehabilitation Goals	• Normalized gait • Gradually progress to full ROM • Improve neuromuscular control • Increase strength • Enhance proprioception and kinesthesia
Weight Bearing/ Precautions	• Progressively wean crutches over the next 2 weeks to FWB • Discontinue brace at 6-8 weeks, per MD

Range of Motion	• Progressive active hip and knee flexion • Active stretching all uninvolved muscle groups
Additional Interventions *Continue with Phase I-II interventions as indicated	*Therapeutic Exercise* • DL Bridge with band around thighs • DL Bridge with ball squeeze • DL Bridge with Upper back on the bench • Plank with alternating leg lifts • Side plank with leg lift (on left knee until stronger) or oblique twists • Straight Leg Raise (SLR) • Hamstring (HS) curls antigravity • Hip extension antigravity • 10 weeks postop: o Single Leg (SL) bridge, back on floor, foot on bench o Progress to ankle weight for all leg lifts PRE o Wall slides o Clam shells o Partial squats o Step ups o Step downs *Cardiovascular Exercise* • 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 patterns • Hamstring strength 5/5 in prone with knee at 90° flexion

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

Rehabilitation Goals	• Full ROM • Improve neuromuscular control • Improve strength/power/endurance • Enhance dynamic stability
Additional Interventions *Continue with Phase I-III interventions as indicated	*Therapeutic Exercise:* • Gentle hamstring stretching • Cautious use of weight training machines • Single leg closed chain exercises • Resisted step ups using sports cord around waist from behind • Double Leg Hamstring ball roll out (eccentric portion only) --> DL eccentric and concentric --> SL eccentric portion only --> SL eccentric and concentric • Double Leg deadlift, short range --> progressing to Single Leg no rotation • Double Leg deadlift – wide abducted leg stance with band around forefeet – pushing into abduction during eccentric phase of deadlift • Progress to single leg with spine rotation deadlift • Bridge on ball – eccentric portion only double leg progressing to single leg

	Cardiovascular Exercise • 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 • HHD testing: To initiate plyometrics: o LSI hamstring strength >70/80% o LSI glute med strength >80% o LSI quad strength >80% • To initiate running: o LSI hamstring strength >80/90% o LSI glute med strength >90% o LSI quad strength >90% o Single leg hop cluster (distance, triple, cross over, 6 meter timed) >85%

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

Rehabilitation Goals	• Emphasis on gradual return to recreational activities
Precautions/Guidelines	• Neoprene support as needed
Additional Interventions *Continue with Phase II-IV interventions as indicated	*Therapeutic Exercise:* • Progressive strengthening avoiding overload to HS • Progress speed of resisted steps and add forward lean • SL dead lift with band under stance leg: hold for resistance • Reverse Lunge on Slider: Progress load bearing and add concentric/eccentric phase: o Part 1: Eccentric hamstring with core strength exercise: o Part 2: in full lunge position: • Short range Nordic HS to physio ball height progress range to ground depth • Kettle bell swing • Retro lunge slide *Cardiovascular Exercise* • 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 VI: UNRESTRICTED RETURN TO SPORT (20-24 WEEKS AFTER SURGERY)

Rehabilitation Goals	• Progressively increase activities to prepare for unrestricted functional return
Additional Interventions *Continue with Phase	*Therapeutic Exercise:* • Continued isotonic strengthening exercises above • Continue ROM exercises

II-V interventions as indicated	• Progressive running/speed and agility • Jump training after 22 weeks *Cardiovascular Exercise* • Progress step ups to resisted jump onto steps • Plyometric progression o Double leg up/down o Double leg forward/back o Alternating lateral bounding o Single leg jump o Progress plyometrics to resisted plyometrics using sports cord around waist • Ladder drills • Falling start runs- see below for details • Mini hurdle runs • Sprint progressions (5 times each) 10 yard 20 yd assisted deceleration with band around waist deceleration lean • 40 yard sprints at 90%
Criteria to Progress	• To Return to Play: o LSI Hamstring strength > 95% o LSI Glute strength >95% o LSI quad strength >95% o Single leg hop cluster (distance, triple, cross over, 6 meter timed) >95% o Good acceleration, deceleration, change of direction control o 60 second timed step-down test 80 bpm, with excellent control o 60 second timed Lateral leap 60 bpm, with excellent control