**PT PROTOCOL for Proximal Hamstring Repair**

The patient may begin physical therapy between days 10 and 14, where he may work on prone passive knee range of motion to reduce muscle-nerve adhesion formation.

PHASE 1 - Between weeks 2 and 6, she may practice near isometric quad sets with minimal heel lift to avoid coupled hip flexion knee extension, abdominal isometrics, as well as upper extremity ergometer exercises.

PHASE 2 - Between weeks 6 and 12, she may wean from crutches and begin non-impact balance and proprioceptive drills – beginning with double leg and gradually progressing to single leg
• Stationary bike
• Gait training
• Begin hamstring strengthening – start by avoidance of lengthened hamstring position (hip flexion combined with knee extension) by working hip extension and knee flexion moments separately; begin with isometric and concentric strengthening with
hamstring sets, heel slides, double leg bridge, standing leg extensions, and physioball curls
• Hip and core strengthening

Progression Criteria

Normal gait on all surfaces
• Ability to carry out functional movements without unloading the affected leg or pain while demonstrating good control
• Single leg balance greater than 15 seconds
• Normal (5/5) hamstring strength in prone with the knee in a position of at least 90° knee flexion

PHASE 3 - from weeks 12+

Continue hamstring strengthening – progress toward strengthening in lengthened hamstring positions; begin to incorporate eccentric strengthening with single leg forward leans, single leg bridge lowering, prone foot catches, and assisted Nordic curls
• Hip and core strengthening
• Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to the other and then 1 foot to same foot
• Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities
• Initiate running drills, but no sprinting until Phase IV
• Aerobic training - Biking, elliptical machine, Stairmaster, swimming, and deep water running

Progression Criteria
• Dynamic neuromuscular control with multi-plane activities at low to medium velocity without pain or swelling
• Less than 25% deficit for side to side hamstring comparison on Biodex testing at 60° and 240° per second

PHASE 4 - 4-6 months post op

• Continue hamstring strengthening – progress toward higher velocity strengthening and reaction in lengthened positions, including eccentric strengthening with single leg forward leans with medicine ball, single leg dead lifts with dumbbells, single leg bridge curls on physioball, resisted running foot catches, and Nordic curls
• Running and sprinting mechanics and drills
• Hip and core strengthening
• Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to other and then 1 foot to same foot
• Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities
• Sport/work specific balance and proprioceptive drills
• Stretching for patient specific muscle imbalances
• Replicate sport or work specific energy demands

2. The patient should follow up in my clinic in approximately 2
weeks postop, followed by 6 weeks postop and 12 weeks postop. (2 week wound check can be done in Nome)