**Day of Surgery**. Rest and recover.

|  |  |
| --- | --- |
| PRECAUTIONS | - Avoid prolonged standing and walking  - Avoid pain with walking and exercises  - Avoid painful activities  - Avoid putting heat on hip  - Use crutches as needed |
| Emphasize | - Control swelling  - Independent transfers  - Gait training with appropriate assistive device  - Appropriate balance of activity and rest |
| Assessment | - Mental status: Alert and Oriented x3  - NPRS  - Wound status  - Swelling  - Passive and Active-assisted range of motion (P/AAROM) of hip  - Post-anesthesia sensory motor screening  - Functional status |
| Treatment Recommendations | - Transfer training  - Gait training weight bearing as tolerated (WBAT) with assistive device on level surfaces and stairs  \* Patient education:   * Edema management * Activity modification   \* Initiate and emphasize importance of HEP   * Quadriceps sets, gluteal sets, ankle pumps, * Seated knee AAROM * Straight leg raises * Passive hip extension |
| Criteria for Discharge | - Independent ambulation with appropriate assistive device on level surfaces and stairs  - Independent with transfers and activities of daily living (ADLs)  - Independent with home exercise program (HEP) |

**Phase I, 0-2 weeks**. Pain and edema control, start flexibility and strengthening exercises.

|  |  |
| --- | --- |
| PRECAUTIONS | - Start slow progression back to ADLs  - Avoid heat application  - Avoid prolonged standing/walking |
| Emphasize | - Full PROM hip  - Controlling pain and swelling  - Compliance with HEP and precautions |
| Assessment | - LEFS, IKDC, SANE, ACL RSI, NPRS  - Swelling  - Gait and Neurovascular assessment  - Wound status  - LE AROM and PROM  - Straight leg raise (SLR) in supine  - Single leg stance, when appropriate |
| Treatment Recommendations | - Quadriceps re-education: quadriceps sets with towel under knee with neuromuscular electric stimulation (NMES) or biofeedback  - AROM hip flexion to tolerance  - SLR in all planes  - Hip progressive resistive exercises  - Calf strengthening (Unilateral elastic band & bilateral calf raises)  - Leg press bilaterally in 80°-5° arc if knee flexion ROM > 90°  - Initiate flexibility exercises  - Proprioception board/balance system (bilateral WB)  - Stationary bicycle:   * Short (90mm) crank ergometry * Standard crank for ROM and/or cycle (requires 115° knee flexion)   - Upper extremity ergometry, as tolerated  - Gait training with progressive WB  - Edema management, e.g. cryotherapy (no submersion), elevation, gentle edema mobilization avoiding incision  - Progressive home exercise program |
| Criteria for Advancement | - Ability to SLR without quadriceps lag or pain  - Hip ROM 0°-90°  - Pain and swelling controlled |

**Phase II, 2-6 weeks**. Progressive strengthening.

|  |  |
| --- | --- |
| PRECAUTIONS | - Monitor tolerance to load, frequency, intensity and duration  - Avoid heat application  - Slow progression of duration while standing/walking  - Wean off crutches  - Avoid ascending/descending stairs reciprocally until adequate quadriceps control & lower extremity alignment obtained |
| Emphasize | - Hip and knee ROM  - Normalizing gait pattern  - Activity level to match response and ability |
| Assessment | - LEFS, IKDC, SANE, ACL RSI, NPRS  - Swelling  - Gait and Neurovascular assessment  - Wound status  - LE AROM and PROM  - Straight leg raise (SLR) in supine  - Single leg stance, when appropriate |
| Treatment Recommendations | - Quadriceps re-education: quadriceps sets with towel under knee with neuromuscular electric stimulation (NMES) or biofeedback  - Hip soft tissue mobilization  - Progression from seated to standing (wall slides) to bike ROM  - Straight leg raises (SLR) PRE's in all planes  - Leg press bilaterally, to 2 up/1 down, to unilateral  - Functional strengthening   * Mini squats, initiating movement with hips * Forward step-up progression starting with 2”-4”   - Hip-gluteal progressive resistive exercises  - Hamstring strengthening  - Calf strengthening (Progression to unilateral calf raises)  - Flexibility exercises  - Proprioception board/balance system   * Progression from bilateral to unilateral weight bearing * Once single leg stance achieved with good alignment and control, progress from stable to unstable surfaces   - Stationary bicycle  - Upper extremity ergometry, as tolerated  - Edema management, e.g. cryotherapy (no submersion until incision adequately healed), elevation, gentle edema mobilization avoiding incision  - Progressive home exercise program  - Patient education regarding monitoring of response to increase in activity level and weightbearing |
| Criteria for Advancement | - Minimal swelling  - Non-antalgic gait  - Ascend 6” stairs with good control without pain |

**Phase III, 7-12 weeks**. Regain functional movement and strength.

|  |  |
| --- | --- |
| PRECAUTIONS | - Initiate return to running/sport only when cleared by physician  - Avoid pain with exercises and functional training  - Monitor tolerance to load, frequency, intensity and duration  - Avoid too much too soon |
| Emphasize | - Address impairments  - Return to normal functional activities |
| Assessment | - LEFS, IKDC, SANE, ACL RSI, NPRS  - Swelling  - Girth measurements  - LE AROM and PROM  - Functional assessment, e.g. single leg stance, step ups/downs, squat, gait  - Balance testing, e.g. Star Excursion Test, Biodex Balance SystemTM  - QMA – Quality of Movement Testing |
| Treatment Recommendations | - Progress leg press eccentrically  - Functional strengthening  - Initiate plyometric progression  - Continue foundational hip-gluteal progressive resistive exercises  - Continue hamstring and calf strengthening  - Flexibility exercises and foam rolling  - Progress proprioception training  - Progress cardiovascular conditioning  - Cryotherapy and/or compression therapy  - Progressive home exercise program  - Patient education regarding monitoring of response to increase in activity level |
| Criteria for Advancement | - No swelling  - Normal neurovascular assessment  - Normal scar and soft tissue mobility  - Full LE ROM, flexibility and strength  - Quantitative assessments = 85% of contralateral lower extremity |