Hip Arthroscopy Rehabilitation Guideline

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Immediate Post-Operative Phase 0-2 Weeks

Goals of Phase

- Decrease post-operative inflammation/swelling
- Decrease pain
- Prevent post-operative stiffness and adhesions
- Restore basic muscle activation patterns
- Normalize gait pattern with assistive device

Passive Range of Motion (within pain-free range)

- Precautions x 4 weeks
  - *Avoid aggressive "Stretching"*
  - Flexion 0-90°
  - Extension limited to 0° x 4 wks for routine capsular closure, x 6wks if plication performed
  - No external rotation > 20° in prone
- Circumduction at 30° initially, including circumduction at greater degrees of flexion when able
- Upright stationary bike (elevated seat, low/no resistance)

Flexibility

- Opposite knee to chest stretch (early hip flexor stretch)
- Prone knee flexion/quadricep stretch
- Prone positioning progressing toward prone prop position

Edema Control and Muscle Activation

- Glute set progression (supine then prone)
- Quadriceps setting
- Ankle pumps
- SAQ
- Transverse abdominis activation

Gait Training

- Emphasize foot flat WBAT pattern with use of bilat crutches
- Avoid all treadmill ambulation including use of anti-gravity treadmill
- Review stair negotiation technique (up w/ good, down w/ bad)

Criteria to Advance

- Minimal to no pain at rest
- <3/10 pain on VAS with initial therapeutic exercise
- Normalized gluteal, quadricep, and transverse abdominis activation
- No increase in pain with prone positioning

Early Post-Operative Phase

Goals of Phase

- Decrease post-operative pain and inflammation
- Improve muscular strength & endurance for ambulation and ADLs
- Normalize gait pattern without use of assistive device
- Restore range of motion necessary for ADLs and ambulation
  - Ensure adequate hip extension once appropriate
  - No extension > 0° x 4 wks for routine closure, x 6 wks if capsular plication performed

Range Of Motion

- Continue circumduction
- Initiate and progress upright stationary bike with elevated seat height per tolerance
- Supine bent knee fall outs/ins within protected, pain free range of motion
- Quadruped heel sits within pain free range of motion at 4 weeks

Flexibility

- Begin scar and soft tissue mobilization as necessary once incisions well healed
- Progress prone positioning time and progress toward prone prop position
- Prone quadriceps stretch
- Lunge position hip flexor stretch when appropriate (@ 4 or 6 weeks)

Strengthening
- Submaximal abduction and adduction isometrics
- Prone internal and external rotation isometrics in prone
- Bridges to 0° extension
- Quadruped hip extension to 0°
- Long-arc knee extension
- Standing hip abduction with IR
- Standing TKE with gluteal muscle activation
- Bilateral Leg press with < 90° of hip flexion (progress toward SL)
- Mini squats/sit to stands
- Partially-loaded active external rotation within pain free ROM

Gait Training
- Avoid use of all treadmill devices for gait retraining
- Wean from assistive device after 4 weeks once pattern normalized

Criteria to Advance
- No reactive pain with exercise or complaints of pain at rest
- Able to demonstrate > 30 seconds of single leg balance without loss of pelvic stability
- Patient reports ability to sit > 30 minutes without exacerbation of pain
- Patient reports pain free community ambulation without assistive device
- > 10 repetitions of prone hip extension without compensations or altered activation pattern

Intermediate Phase

Goals of Phase
- Restore full ROM and flexibility
- Regain adequate muscular strength & endurance for progression of IADLs
- Progress activity level without exacerbation of intra- or extra-articular irritation/pain
- Normalize dynamic lower extremity and lumbopelvic control during functional activities

Range of Motion and Flexibility
- FABER slides progressing toward FABER/figure 4 position
- Thomas position hip flexor stretch if necessary
- Include IT band stretches only if necessary and no recreation of groin pain

Strengthening
- Side-lying hip abduction
- Step ups
- Side and prone planks
- Side stepping with band resistance
- Single leg balance with perturbations
- Upper extremity assisted single leg mini squats
- Lateral step downs
- Single leg romanian dead lifts
- Standing stork turns/band resisted external rotation

Endurance and Cardiovascular Training
- Progress stationary bike duration and resistance per tolerance
- Elliptical trainer (initially no incline and low resistance)
- Avoid all treadmill or anti-gravity treadmill walking

Low-Intensity Plyometric Training
- Avoid all plyometrics until 10 weeks post-op
- Begin with low intensity < bodyweight bilat hopping on shuttle
- Ladder drills
  - Forward 2 feet in each box
  - Lateral 2 feet in each box
  - Forward 1 foot in each box
  - In-in/out (shuffle)
- 2-foot line jumps/hops front/back
- 2-foot dot hops
- Alternating traveling single-leg hop and holds
- Short step height bilateral box jumps

Criteria to Advance
- Full ROM without pain or signs/symptoms of impingement
- Symmetrical FABER position
- 5/5 strength in all planes without reproduction of symptoms
- Patient is able to ambulate > 15 minutes at quick pace without pain
- Hip Outcome Score: ADL subscale score > 85%
- No errors on lateral step-down test
- No pain/symptom provocation and good control with completion of plyometric program

Late Phase
(Running and return to sport phase > 12 weeks post-op)

Goals of Phase

- Return to running without asymmetries
- Regain adequate cardiovascular endurance for desired recreational activities and/or sport
- Restore and maximize lower extremity power

Strengthening

- Continue to progress intensity and volume of progressive resistance exercises
- Gradually return to previous gym-based resistance training exercises if appropriate
  - Avoid seated abductor/adductor strengthening machines
  - Avoid squats and lunges below 90˚
  - Avoid "maxing out" or resistance preventing completion of < 6 repetitions

Cardiovascular Training

- Progress stationary bike to spin/road bike if desired
- Progress elliptical intensity and duration
- Initiate Structured walk/jog program

Example program

Step	Warm Up	Jog	Walk	Reps	Cool Down
1	5 min	1 min	3 min	5	5 min
2	5 min	1 min	2 min	7	5 min
3	5 min	2 min	1 min	7	5 min
4	5 min	3 min	1 min	5	5 min
5	5 min	5 min	1 min	4	5 min
6	5 min	20-min continuous run			5 min

  - Run no more than every other day
  - Jogging should be initiated outdoors if possible
  - No hills or incline and no speed work should be included until completion of program
  - Progress distance and initiate speed training only after completion of walk/jog program

Plyometric Training

- Progress intensity and volume of bilateral lower extremity plyometrics
- Example exercises
  - Forward/backward skips
  - Single foot line hops
  - Single foot dot hops
  - Single foot step/box jumps

Agility and Sports Specific Training

- Anterior-posterior shuttle drills
- Lateral shuffle/shuttle drills
- Carioca
- Progress ladder footwork drills
- Box drills
- Planned cutting drills progressing toward reactive change in direction drills
- Begin sport specific skill work (> 4 months post op)

Criteria for Return to Sport Clearance

- Physician clearance
- No sign/symptoms of impingement with clinical testing
- HOS ADL subscale score > 95%
- HOS Sport subscale >90%
- No reactive pain or symptoms with agility and sport specific skills
- >90% limb symmetry on single-leg hop tests
  - SL forward hop for distance
  - SL medial hop for distance
  - SL lateral hop for distance
  - SL triple hop for distance
  - SL triple crossover hop for distance
- < 10% difference on 10 RM unilateral leg-press
- *If criteria are not achieved return to full sport participation should be delayed and patient should continue with rehabilitation to address remaining functional limitations*