Lifespan Newport Hospital Total Hip Arthroplasty Protocol

The intent of this protocol is to provide the clinician with a guideline of the post-operative rehabilitation course of a patient that has undergone a total hip arthroplasty. It is no means intended to be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam/findings, individual progress, and/or the presence of post-operative complications. If a clinician requires assistance in the progression of a post-operative patient, they should consult with the referring surgeon.

This protocol applies to the standard total hip arthroplasty/hemiarthroplasty. In a revision total hip arthroplasty, or in cases where there is more connective tissue involvement or bone grafting, Phase I and II should be progressed more cautiously to ensure adequate healing.

Progress to the next phase based on Clinical Criteria and/or Time Frames as appropriate.

Dislocation Precautions:

Dislocation precautions are based on surgical approach and the direction in which the hip is dislocated intra-operatively (if at all) to gain exposure to the joint. Precautions include:

Posterior Precautions:

- No hip flexion >90 degrees
- No hip internal rotation or adduction beyond neutral
- None of the above motions combined.

Modified Posterior Precautions:

- No hip flexion beyond 90 degrees unless knees are apart (hips abducted and externally rotated)
- No combined Flexion and Internal Rotation (generally for 2 months)

Anterior Precautions:

- No hyperextension
- No external rotation past neutral

Modified Anterior Precautions:

- No pivoting when the operated lower extremity is planted

Direct Superior Precautions:

- No hip precautions unless stated otherwise by surgeon.
- Posterior precautions will need to be considered if significant medical Hx of spinal fusion or severe stiffness in the spine is present.

Lateral Precautions:

- No active hip abduction (for 8 weeks generally)

Limited Precautions:

- Either posterior or direct anterior approach
- Avoid any extremes of movement or uncomfortable positions

Global Precautions:

- Combination of both anterior and posterior precautions, described above
- Often ordered for patients following hip resurfacing, due to full exposure of the femoral head and opening of joint capsule during surgery. Also often ordered after revision surgery due to a history of dislocations.

No Dislocation Precautions:

- Determined by the surgeon, often after anterolateral and minimally invasive surgical approaches or hemiarthroplasty procedures
- Do not assume there are no precautions if none are documented – clarify with the surgical team

All precautions are followed at least until the initial post-operative appointment and then as directed by the surgeon.

Weight Bearing Precautions:

Weight bearing precautions can vary and are determined by the surgeon on an individual basis. Patients are commonly discharged from the hospital as weight bearing as tolerated (WBAT). Partial (PWB) and greater weight bearing limitations such as touch toe (TTWB) are more often prescribed after complex revision surgeries, those requiring bone grafting, or those with intra-operative complications.

Trochanteric Precautions:

A trochanteric osteotomy may be performed with complex revisions, certain surgical procedures, and to gain better exposure of the joint space. In the post-operative order set this will present as "*Trochanter removed*" or "*Troch off precautions*." Active hip abduction exercises may be restricted due to the force of the contraction of the gluteus medius on the reattached greater trochanter. The surgeon may restrict the patient to:

- Passive Abduction Only
  - o A patient may use a leg lifter or assist to abduct the operative extremity.
- Functional Abduction Only
  - o No isolated hip abduction exercises, but the patient may perform functional mobility tasks that require hip abductor use such as bed mobility and ambulation.

Phase I POD 0- Week 1

Occurs as part of Inpatient care and is not detailed for Outpatient focused protocol.

Phase II – Motion Phase (Weeks 1-6):

Goals:

- Initiate outpatient physical therapy as early as week 2
- Improve range of motion (ROM) within dislocation parameters
- Decrease post-operative inflammation/swelling
- Muscle strengthening of the entire hip girdle of the operative extremity with focus on:
  - o Hip abductor and extensor muscle groups
  - o Lumbopelvic and core stability
  - o Any notable weakness present in the operative extremity
  - o Any generalized weakness in the trunk or contralateral lower extremity
- Proprioceptive training to improve body/spatial awareness of the operative extremity
- Endurance training to increase cardiovascular fitness.
  - o Consider upper extremity endurance training if limited by precautions
- Gait training
  - o Assistive devices are discontinued when the patient can ambulate without pain, balance difficulties, or a positive Trendelenburg test

    - Progress stair training with appropriate upper extremity support
- Functional training to promote independence with ADLs/IADLs

Joint Specific Outcome Measure: It is recommended upon the start of postoperative care in the ambulatory clinic that the patient completes a functional outcome measure during the first ambulatory visit. This measure is then completed every 30 days and upon discharge from physical therapy. Favorable options include:

- Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)
- Hip Disability and Osteoarthritis Outcome Score (HOOS)
- Lower Extremity Functional Scale (LEFS)

Precautions:

- Most surgical precautions are lifted between weeks 4-8
    - Refer to surgical team instructions
- Monitor for proper wound healing
- Monitor for signs of infection

Therapeutic Exercise and Functional Mobility:
(All exercises performed within the patient's dislocation precautions)

Weeks 1-3

- AA/A/PROM, stretching for hip abduction ROM within precautions
- Continue isometric quadriceps, hamstring, and gluteal isometric exercises
- Heel slides
- Gait training to improve function and quality of involved limb performance during swing through and stance phase
    - Patients are encouraged to wean off their assistive device between weeks 2-3
- Postural cues/re-education during all functional activities as indicated
- Balance/Proprioception Training:
    - Weight-Shifting Activities
    - Closed Kinetic Chain Activities (TKE's, mini lunge, etc)
- Modalities at the discretion of the therapist based on clinical findings

Weeks 3-6

- Continue above exercises
- Stretching (with consideration of dislocation precautions)
- Front/lateral step up and step down
- 4-way straight leg raise (SLR) with consideration of dislocation precautions
- Sit-to-stand to increase hip extension strength during functional tasks
- Sidestepping, backwards ambulation, and ambulation on uneven surfaces
- Lifting/Carrying. Pushing/Pulling, Squatting tasks
- Return-To-Work Tasks
- Can begin aquatic program if incision is completely healed
- Stationary bike, progress resistance starting at 3-4 weeks per patient tolerance

Guidelines
Perform 10-20 repetitions of all ROM, strengthening, and strengthening exercises 3x/day. Hold stretches for 30 seconds and perform 2-3 repetitions of each.
Bike daily for 5-10 minutes if able.

Criteria for Progression to the Next Phase:

- Active hip flexion range of motion 0-110'

- Good voluntary quadriceps control
- Independent ambulation 800ft without assistive device, deviations, or antalgic pattern
- Minimal pain and inflammation

Phase III – Strengthening Phase (Weeks 6-12):

Goals:

- Improve strength of all lower extremity musculature
- Return to most functional activities and begin light recreational activities
    - o Pool/Aquatics, Walking, Stationary bike (resisted)

Precautions

- Dislocation precautions (*If still active*)
- Avoid high impact activities.
- Avoid activities that require repeated pivoting/twisting

Therapeutic Exercise and Functional Mobility:

- Assess hip, knee, and trunk stability - provide patients with open/closed chain and dynamic activities that are appropriate for each patient's individual needs
- Strengthening
    - Continue Phase II exercises with progression including resistance and repetitions
    - Add resistance machines as appropriate including leg press, hamstring curl, and 4-way hip machine
    - Emphasize eccentric control of quadriceps and hip abductors with closed chain exercises
- Initiate endurance program, which could include walking, stationary bicycle, elliptical and/or pool (aquatics or swimming)
- Initiate and progress age-appropriate balance and proprioception exercises
    - Single leg stance
    - Static balance on Bosu/wobble board/foam/etc
    - Add gentle agility exercises (i.e. tandem walk, side stepping, backwards walking)

Guidelines

Perform ROM and stretching exercises once a day. Hold stretches for 30 seconds and perform 2-3 repetitions of each.

Perform strengthening exercises 3-5 times a week. Do 2-3 sets of 15-20 Reps.

Criteria for Progression to the next phase:

- 4+/5 muscular performance (based on MMT of all lower extremity musculature)
- Minimal to no pain or swelling.

Phase IV – Advanced Strengthening/Return to Activity Phase (Weeks 12-16):

Goals:

- Return to appropriate recreational sports/activities as indicated
- Enhance strength, endurance and proprioception as needed for activities of daily living and recreational activities

Precautions

- Dislocation precautions according to surgeon's orders
- Avoid high impact and contact sports
- Avoid repetitive heavy lifting

Therapeutic Exercises:

- Continue prior exercises with progression of resistance, repetitions, and dynamic tasks
- Increased duration of endurance activities
- Initiate sport/activity-specific training
- Carrying, Pushing, or Pulling
- Squatting or Crouching
- Return-To-Work Tasks

Considerations for Return to Sport:

Current recommendations to maximize longevity and success of arthroplasty encourage patients to return to lower impact activities, such as swimming, golfing, walking, doubles tennis, dancing, or biking.
Higher impact activities including jogging, football, soccer, and basketball are generally discouraged, but consideration must be given to patients' goals. Several studies show that a patient's level of experience with a recreational activity is an important consideration when recommending return to physically demanding tasks such as skiing, hiking, or horseback riding.

Guidelines

Perform ROM and flexibility exercises daily.
Perform strengthening and proprioception exercises 3-5x/ week, performing 2-3 sets of 10-15 repetitions.
Continue endurance program 30-45 minutes 3x/ week.

Criteria for Discharge:

- Pain-free AROM of operative hip
- Non-antalgic, independent gait without assistive device
- Independent step-over-step stair negotiation
- At least 4+/5 MMT of all lower extremity musculature
- Normal, age-appropriate balance and proprioception
- Patient is independent with home exercise program
- Patient has returned to previous level of function

END

Adapted from:

-Brigham and Women's Hospital Rehab Department Protocol: https://www.brighamandwomens.org/assets/BWH/patients-and-families/rehabilitation-services/pdfs/tha-protocol.pdf

-Southshorehealth.org: https://d18unesthp5g3j.cloudfront.net/www.southshorehealth.org/assets/2021-02/total-hip-rehab-protocol.pdf

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