Total Hip Arthroplasty

General Information:

The intent of these guidelines is to provide the therapist with direction for the postoperative rehabilitation course of a patient that has undergone a Total Hip Arthroplasty. It is not intended to be a substitute for appropriate clinical decision-making regarding the progression of a patient's post-operative course. The actual post surgical physical therapy management must be based on the surgical approach, physical exam/findings, individual progress, and/or the presence of post-operative complications. If a therapist requires assistance in the progression of a post-operative patient they should consult with the orthopedic surgeon.

Dislocation precautions

• Based on the surgical approach and the direction the hip is dislocated intraoperatively to gain exposure to the joint.
• Surgical approaches most frequently used are posterolateral and straight lateral; other approaches include anterolateral, and anterior.
• Precautions are followed for approximately 3 months or as directed by each patient's surgeon.

POSTERIOR dislocation precautions

- No combined motions of hip flexion, adduction and internal rotation
- No hip flexion greater than 90 degrees
- No hip extension beyond neutral
- No internal rotation of the hip beyond neutral when in flexion

ANTERIOR dislocation precautions

- No extension of the hip beyond neutral
- No bridging
- No prone lying
- No combined hip motions of extension and external rotation; using a trochanter roll will help maintain neutral alignment of the hip
- When the patient is supine, keep a pillow under the knee to maintain operative hip in ~30 degrees of flexion OR keep the head of the bed raised at least 30 degrees. Developing tight hip flexor muscles may help prevent anterior dislocation of the hip.

Weight bearing precautions

• Range is from 50% partial weight bearing to weight bearing as tolerated, with a walker or 2 crutches for 4-6 weeks postoperatively.
• Weight bearing status is determined by the surgeon, based on whether or not the femoral component is cemented or uncemented, and on the surgeon's individual preference.
• Complex revision surgeries, those requiring extensive bone grafting or those with complications intraoperatively may require a more limited touch down weight bearing status.

Trochanteric osteotomy

• May be performed with complex revisions and certain surgical approaches
• Active hip abduction exercises may not be allowed due to the pull of the gluteus medius musculature on the reattached trochanter. In this case, passive abduction exercises should still be performed to increase the abduction range of motion.
• In some cases, although the surgeon may not allow active abduction exercises, they may allow the patient to use the abductor muscles functionally for bed mobility purposes.

GOALS OF RECOVERY

Within 4-6 weeks of surgery

- Early motion with progression to functional range and active hip flexion to 90 degrees.
- Increased muscle strength of operative hip to 3/5 hip flexors, 2/5 hip adductors (to neutral) and at least 3/5 quadriceps. Strength of abductors will depend on surgical approach and whether abduction exercises are allowed.
- Patient will demonstrate a thorough understanding of the postoperative program, including precautions, positioning and exercises.
- Patient will achieve independence in performing home exercise program.
- Patient will walk with as normal a gait pattern as possible, with appropriate weight bearing on the operative extremity, using a walker or 2 crutches, unless directed otherwise by their surgeon.
- Patient will demonstrate understanding and independence in joint protection and maintain weight bearing status during activities of daily living and all mobility, with careful adherence to dislocation precautions at all times.

REHABILITATION INTERVENTION

Phase I Preoperatively to discharge

Postoperative Day 1

Observation and assessment

- Check patient's lab values including hematocrit (Hct) and the International Normalized Ratio (INR) to assist in determining appropriateness of mobilizing the patient.
- If the Hct is in the mid 20s or less, monitor the patient's vital signs closely.
- If the INR is greater than 3.0, check with the resident regarding appropriateness of treatment due to the increased risk of bleeding. As a general guideline, if the INR is greater than 4.0, hold therapy.
- Observe the primary dressing for drainage. If a large amount of drainage is present, discuss with the nurse and decide if notifying the resident is indicated.
- Assess circulation, sensation and movement (CSM) of operative extremity including femoral and peroneal nerve function. If any deficits are found, notify the resident and clearly document findings in the chart.
- Evaluate range of motion (ROM) and strength of the patient's uninvolved extremities.
- Discuss discharge plan with the patient and contact Care Coordinator as needed.

Pain management

- Most patients have a patient-controlled analgesia (PCA) pump to use as needed.
- If the patient is not on a PCA, they may need pain medication ~30-45 minutes prior to their therapy session.

Positioning

- Ensure that the foot of the bed has been locked in a completely flat position.
- The patient's operative leg should rest out of the suspension or abduction pillow during the day, unless the patient is unable to follow their dislocation precautions due to an alteration in mental status.
- An ankle roll is placed under the ankle to relieve pressure on the heel.
- A trochanter roll should be used as needed to maintain the hip in neutral rotation.
- With posterior precautions, a regular pillow is placed between the patient's legs.
- Patients following posterior precautions should lie with the bed as flat as tolerated several times a day, and at night to sleep, to stretch the anterior hip muscles.
- Patients with anterior precautions will keep the height of the head of the bed up at least 30 degrees OR keep a pillow under their knee to keep operative hip flexed.
- The operative extremity will be placed back into the suspension or abduction pillow for sleeping that night.

Exercises

- Begin ankle pumps and isometrics.
- Begin appropriate passive (P)/active assistive (AA)/active (A) hip ROM exercises within patient's dislocation precautions.

Mobility

- Determine patient's medical and functional readiness to begin mobility.
- The majority of patients will be ready to sit on the side of the bed and stand.
- Many patients will be ready to progress to gait training and sitting up in a chair.
- Consider patient's height and upper body strength when choosing a chair. Patients should not sit with their knees higher than the level of their hips.
- Short patients with anterior precautions should not sit in chairs that are too high, i.e. their feet should be able to comfortably reach and rest on the floor.

Patient education

- Instruct patient in dislocation precautions and proper positioning. The preferred side for rolling is toward the operative side, with 1-2 pillows between legs.
- Provide patient with appropriate written home program, depending on whether they have posterior or anterior dislocation precautions.
- Teach patient all supine exercises.
- Instruct patient to alternate the height of the head of the bed throughout the day.

Encourage patient to request nursing assistance to sit up for all meals, either on the side of the bed or in a chair, depending on progress in their therapy session.

Postoperative Day 2

Observation and assessment

- Monitor incision, swelling and positioning of the operative extremity.
- Observe for signs of DVT, bleeding, or hip dislocation.
- Typical signs of hip dislocation are severe pain and a leg that is shortened and excessively rotated.
- Check the most recent Hct and INR values and proceed as in postoperative day 1.
- Discuss any observations of concern with the nurse and decide whether to notify the resident.

Pain management

- Patient will be weaned off the PCA and transition to oral pain medication.
- Patient may benefit from receiving pain medication 30-45 minutes prior to therapy session.

Positioning

- Ensure proper positioning and carryover of dislocation precautions.
- Discontinue use of suspension at night if tolerated.
- Use regular pillow or hip abduction pillow at night for sleeping.
- Patients with posterior precautions will sleep with the bed as flat as tolerated.
- Patients with anterior precautions will sleep with the height of the head of the bed raised up to ~30 degrees or with a pillow under their knee.

Exercises

- Progress P/AA/A supine exercises as tolerated.
- Initiate all sitting exercises.

Mobility

- Wean patient from using bed devices such as bedrails, trapeze and ladder.
- Patient should be sitting up in a chair 2-3 times during the day. Chair should be a comfortable height and patient's knees should not be higher than their hips.
- Short patients with anterior precautions should not sit in chairs that are too high, i.e., their feet should be able to comfortably reach and rest on the floor.
- Progress gait distance as tolerated, with walker or 2 crutches.

Patient education

- Review supine exercises.
- Teach patient all sitting exercises.
- Review positioning needs and dislocation precautions.
- Encourage patient to request nursing assistance to walk to the bathroom, depending on progress during therapy session.
- Reinforce the need to sit up for all meals, including some time in the chair.

Postoperative Day 3

Observation and assessment

- Continue to monitor the incision, swelling and positioning of the operative extremity for signs of a DVT, bleed or dislocation.
- Moderate swelling and small amounts of serosanguineous drainage are common.
- Discuss any observations of concern with the nurse and decide whether to notify the resident.
- Confirm the discharge plan with the patient and health care team and order/issue equipment as needed, if patient is going home.
- Complete discharge evaluation and referral if patient is going to an extended care facility.

Pain management

- Determine patient's need for pain medicine prior to therapy based on pain level with therapy on postoperative day 2 and patient's preference.

Positioning

- Continue to enforce proper positioning and follow through of dislocation precautions with all mobility.
- Patient will sleep positioned as in postoperative day 2.

Exercises

- Progress and reinforce proper performance of supine and sitting exercises.
- Patient should perform exercises independently 3 times a day.

Mobility

- Progress bed mobility toward independence without patient using bed devices, to simulate patient's home environment.
- Continue to progress gait distance as tolerated, with walker or 2 crutches.

• Reinforce appropriate gait pattern and weight bearing status.
• Begin gait training on stairs if indicated and patient has sufficient balance and endurance.
• Begin training in activities of daily living (ADLs). This may be deferred if patient is going to an extended care facility.

Patient education

• Encourage patient to sit up in a chair for all meals.
• Encourage patient to increase frequency and distance of walking as tolerated, with nursing supervision.
• Reinforce to patient the importance of performing exercises independently.
• Verbally instruct patient in car transfers, incorporating appropriate dislocation precautions. Include family in teaching session when possible.
• Teach patient how to use their adaptive equipment during ADLs, always keeping their hands between their legs when using these devices.

Postoperative Day 4-discharge day

Observation and assessment

• Determine achievement of rehabilitation goals and patient readiness for discharge.
• Discuss discharge plan with health care team. Patients going home will have home care therapy to continue progression of BWH rehabilitation program.
• Complete discharge evaluation and referral as needed. Document current status of incision including whether any drainage is present.
• Ensure all necessary durable medical equipment has been issued and adjusted as needed, if discharge plan is to home. Short patients with anterior precautions should not sit on raised toilet seats or chairs that are too high, i.e., their feet should be able to reach and rest comfortably on the floor.

Exercises

• Observe patient performing home exercise program without cueing from therapist to demonstrate patient comprehension of written instructions.

Mobility

• Continue gait training on level and stairs as needed, with walker or 2 crutches.
• Review ADL training, and equipment needs and usage for discharge.

Patient education

• Review dislocation precautions, positioning, exercises and general instructions for discharge with patient. Include family in teaching session when possible.
• Answer and address any questions or concerns the patient or family may have.
• Instruct patient that they may shower when the incision area is closed and dry.
• Instruct patients with posterior precautions that they may lie on their operative side, with anterior precautions on either side, with pillow between legs, unless otherwise directed by their surgeon.

HOME INSTRUCTIONS for patients

• **EACH exercise should be done 3 times a day**, building up to 10 repetitions of each. Spread the exercises out into short sessions throughout the day.
• Sit for up to 30-45 minutes at one time, as often as desired. Walk or lie down for a few minutes between sitting periods to prevent stiffness in your new hip.
• When first home, it is common to notice swelling of the lower leg. Do not be concerned as long as the swelling is down each morning. If significant, uncomfortable pain and/or swelling persist, you should call your doctor.
• **Do NOT twist or pivot on your OPERATED leg** when walking. Pick feet up.
• Walk in short sessions as tolerated, including outdoors, when balance is adequate.
• Avoid low, soft chairs. A firm, straight back chair with arms is best.
• Sexual activity may be resumed when comfortable, within your hip precautions.
• You may return to work and/or drive at the discretion of your surgeon.

Phase II Discharge to first follow up appointment with surgeon (Usually in 4-6 weeks postoperatively)

- Patient will progress with active hip range and strengthening exercises as outlined in the home program, usually under the guidance of a rehab, home care or outpatient physical therapist.
- No exercises with weights or resistance are allowed.
- Some surgeons will allow side lying abduction exercises with the operative hip during this phase, with 2 pillows between legs.
- Walking with walker or 2 crutches can be progressed to community ambulation when strength and balance are adequate.
- Patient may begin pool therapy 2 weeks postoperatively, if the incision is completely closed and dry, and the external stitches or staples have been removed.

Phase III First postoperative appointment through 12 weeks

- More advanced program may now include exercises in side lying, prone lying, and quadruped, within patient's dislocation precautions, and at the surgeon's discretion. No exercises with weights or resistance are allowed unless approved.
- Refine gait pattern and posture as patient advances to full weight bearing.
- Patient will usually progress from bilateral support to 1 crutch or a cane, and then to no device as strength, balance and pain permit.
- Patient should not discontinue use of an assistive device if they have an antalgic gait or a positive Trendelenburg from weak hip abductors.
- Patient may begin using an exercise bike without resistance.
- Patient may return to work and/or driving at the discretion of the surgeon.

Phase IV After 12 weeks postoperatively

- Patient is encouraged to participate in a low-impact activity to promote cardiovascular health and weight control. Examples of acceptable low impact activities include walking, bike riding, swimming and golfing.
- Patient should **AVOID** activities that involve quick start/stops, pivoting, jumping and high impacts such as downhill skiing, singles tennis, jogging, basketball and weight machines. By avoiding these activities, the longevity of the total hip replacement may be enhanced.
- Patient should discuss other specific activities with their surgeon before initiating. Exercises with weights or resistance are not allowed unless approved by the patient's surgeon.

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Guidelines based on Total Hip Arthroplasty – Brigham & Women's Hospital rehabilitation services. A division of Harvard Medical School.