

Hip Precautions

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Definition/Introduction

Total hip arthroplasty (THA) continues to rank as one of the most successful surgical treatments for end-stage hip osteoarthritis.[1][2] Other indications for THA include hip osteonecrosis (ON), congenital hip disorders including hip dysplasia, post-traumatic arthritis, and inflammatory arthritic conditions. Hip ON, on average, presents in the younger patient population (35 to 50 years of age) and accounts for approximately 10% of annual THAs.[3] Given the consistent, reproducible documented success of THA over the last several decades, the popularity of this procedure has increased with a projected growth of 170% by the year 2030 and more than 193000 performed annually in the US. [4] Hip precautions, in general, represent a well-established post-operative protocol to mitigate the risks fo THA dislocations, which currently occur at an estimated total incidence rate of 1% to 3.[3]

Issues of Concern

There are several different surgical approaches described in the literature[3]

Posterolateral

This is the most common approach for primary and revision THA cases. This dissection does not utilize a true internervous plane. The intermuscular interval involves blunt dissection of the gluteus maximus fibers and sharp incision of the fascia lata distally. The deep dissection involves meticulous dissection of the short external rotators and capsule. Care is taken to protect these structures as they are later repaired back to the proximal femur via transosseous tunnels.

A major advantage of this approach is the avoidance of the hip abductors. Other benefits include the excellent exposure provided for both the acetabulum and the femur and the optional extensile conversion in the proximal or distal direction. Historically, some studies comparing this approach to the direct anterior (DA) approach have cited higher dislocation rates in the former approach. This remains an inconclusive and controversial as the literature has not established a definitive consensus, especially when comparing the posterior approach technique that utilizes an optimal soft tissue repair at the conclusion of the THA procedure.

Direct Anterior (DA)

The DA approach is becoming increasingly popular among THA surgeons. The internervous interval is between the tensor fascia lata (TFL) and sartorius on the superficial end, and the gluteus medius and rectus femoris (RF) on the deep side. DA THA advocates cite the theoretical decreased hip dislocation rates in the postoperative period and the avoidance of the hip abduction musculature.

The disadvantages include the learning curve associated with the approach as the literature documents the decreased

complication rates after a surgeon surpasses the more than 100-case mark. Other disadvantages include increased wound complications in particularly obese patients with large pannis (without the use of an abdominal binder), difficult femoral exposure, the risk of lateral femoral cutaneous nerve (LFCN) paresthesias, and a potentially higher rate of intra-operative femur fractures. Finally, many surgeons need access to a specialized operating table with appropriately trained personnel and surgical technicians to assist in the procedure. Although the latter is not always necessary, learning to perform the procedure on a regular operating table also requires a substantial learning curve that merits consideration.

Anterolateral

Compared to the other approaches, the anterolateral (AL) approach is the least commonly used approach secondary to its violation of the hip abductor mechanism. The interval exploited includes that of the TFL and gluteus medius musculature; this may lead to a postoperative limp at the tradeoff of a theoretically decreased dislocation rate.

Hip precautions

Hip precautions were created to at least theoretically mitigate the risk of early THA dislocation. The goal of these protocols was to standardize the at-risk positions of the hip following a THA and tailoring these positions based on the specific type of surgical technique and approach utilized by the surgeon. The overall clinical efficacy remains controversial and unknown throughout the literature. Moreover, there have been reports of patients being instructed regarding these protocols yet failing to adhere to these postoperative restrictions.[5]

Most institutions implement a general pre- and a post-operative patient educational component which often incorporates these general hip precaution protocols. Education is typically performed by nurses, physical therapists, or physicians. Patients are informed verbally and on some occasions by a video demonstrating hip precautions and body movements to avoid after the surgery. Frequently, patients receive paper handouts listing out hip precautions and diagrams depicting movements to avoid. Many times, these handouts will discuss alternative movements to use. Often time, patients also receive supervised mobility training. The main movements that should be avoided are hip adduction, hip flexion, and external or internal rotation. These precautions are often prescribed for at least 6 weeks or until the soft tissue surrounding the hip have at least partially healed.[6]

Trends in implementation

A 2018 survey of American Association of Hip and Knee Surgeons (AAHKS) and Canadian Arthroplasty Society (CAS) members, using an electronic questionnaire format to determine how often they prescribed precautions and equipment, reported 44% of surgeons universally prescribing precautions while about one-third never prescribed precautions. The utilization of a posterior approach for the THA was a significant risk factor for implementing postoperative hip precautions.[7]

Examples of hip precautions include but are not limited to:

Posterior approach THA precautions:

- provocative position: hip flexion, adduction, internal rotation
 - Do not bend the hip more than 90 degrees
 - Do not cross legs or feet
 - Do not roll or lie on your unoperated side for the first 6 weeks
 - Do not twist the upper body when standing

- Sleep on the back for the first 6 weeks
- The patient may benefit from a shower chair or elevated seat for home use
- Avoid bathing for 8 to 12 weeks (flexed and bent down in the tub)
- Use aids to put on underwear/socks/shoes for 6 weeks to avoid deep hip flexion angles

Anterior approach THA precautions:

- provocative position: hip extension, external rotation

There is also equipment available for patients to help them follow their newly prescribed hip precautions. Some patients purchase raised toilet seats and chairs to prevent them from bending at the hip more than 90 degrees. Sock aids and dressing sticks are often used to make dressing and changing clothing easier for the patient. Reachers or “pinchers” can also be used by a patient following a total hip arthroplasty to help them grab items from the ground and other areas without breaking the hip precautions. There are also environmental modifications that can help prevent hip dislocations; these include removing all tripping hazards from home, moving around the layout of home furniture so that there are fewer turns, and installing grab rails around the house.[6]

Compliance with hip precautions can be challenging for patients to follow. Many activities that were once simple to perform are instantly complicated. Activities of daily living can be significantly affected. Examples of activities of daily living include bathing, grooming, dressing, toileting, and transferring. Lack of independence can leave patients very upset and disheartened further affecting the rate of compliance.[8] Additionally, these precautions can leave the patient uncomfortable and frustrated.

Clinical Significance

The incidence of hip dislocation following a primary total hip arthroplasty is estimated to be anywhere from 2 to 10%. [4] Furthermore, revision hip surgery significantly increases the risk of postoperative dislocation with some reports citing a dislocation rate of nearly 28% of the time.[4]. About 70% of THA dislocations occur within the first year following surgery, and often a revision is required following 2 or more THA dislocation events.

Risk factors for THA dislocation

Risk factors include:

- Prior hip surgery (the most significant independent risk factor for dislocation)
- Elderly age (older than 70 years)
- Component malpositioning: Excessive anteversion results in anterior dislocation and excessive retroversion results in posterior dislocation
- Neuromuscular conditions/disorders (for example, Parkinson disease)
- Drug/alcohol abuse

Questions

To access free multiple choice questions on this topic, [click here](#).

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