Anterior Approach for Hip Replacement

In 1939, Dr. Marion N. Smith-Peterson originated and popularized the direct anterior approach to the hip for placing hip prostheses. We began using this approach in 1984 and have the most extensive experience in the Northwest. For many years the approach was called the Smith-Peterson approach. It was known to be a relatively bloodless, direct, muscle sparing approach into the hip that provided good visualization of the acetabulum. Smith-Peterson used a resurfacing femoral head prosthesis that had no stem. As stem supported prostheses were developed, it became more of a challenge to place them in the femur using this approach.

Positioning the femur to achieve direct access to the femoral shaft requires the use of a curved femoral prosthesis. Many of the early total hip prostheses had a curved stem and the anterior approach was used. With the development of longer and straighter femoral stems, other approaches also became popular.

Currently there are three approaches commonly used for total hip replacement and hip resurfacing. There are no controlled studies with convincing proof that one approach is superior to another. However, there is less concern about postoperative hip instability with the direct Anterior or Anterolateral approaches.

Direct Anterior Approach

This approach is made with the patient in the supine position. The entire hip and leg can be draped free or the patient’s feet can be placed in traction. The approach and positioning maneuvers are the same with or without the traction table. The skin incision is made anteriorly using the iliac crest as a landmark. The surgical approach is between the tensor fascia lata and sartorius muscles, so the approach is muscle sparing. The lateral femoral cutaneous nerve is directly in the way. It is important to identify and protect this nerve. Numbness and pain from this nerve occur commonly with the anterior approach but motor function is not affected.
The supine position facilitates intraoperative radiographic imaging. When a special table (HANA) is used a skilled second assistant is necessary to avoid injury to the patient. Usually, it is still necessary to use a curved femoral stem and preparation tools to work inside the femur. Current survivorship data support the use of both curved and straight femoral prostheses. Special offset broach handles are very helpful for direct anterior hip approaches.

Anterolateral Approach to the Hip

The Anterolateral approach to the hip has been the most commonly used approach for total hip replacement for the last 40 years. It provides excellent and safe access to the hip and hip dislocation following the Anterolateral approach has been uncommon. No special tables or instruments are necessary and there is no risk of cutaneous nerve injury.

The patient is placed in a supine or, if desired, a lateral position on the operating table. A straight lateral incision is made. This approach is also muscle sparing. The Anterolateral approach results in stable hip, satisfactory limb-length symmetry, low risk, and is considered versatile across a wide range of implant choices.

Posterior Approach

The posterior approach is quite popular because of its ease and direct access to both the acetabulum and extensile access to the femur. The patient is placed in a lateral decubitus position and a curved incision following the direction of the gluteus maximus muscle is made. This muscle is gently retracted the small external rotator muscles are detached and preserved for later reattachment. The skin incision is not very apparent and many patients prefer this approach for this reason. This approach may be safer for larger or muscular individuals. The posterior approach is favored for most hip resurfacing procedures.
