The Mini Posterior Hip Approach

Overview

Total hip replacement remains one of the most successful operations in all of medicine with remarkable and rapid return of function and durable results. While there are new approaches to hip replacement including the direct anterior approach and the superior, percutaneously-assisted total hip, the mini posterior approach remains one of the most popular methods of hip replacement due to its ease, low complication rate and ability to handle all forms of hip arthritis including the presence of hardware from other surgeries.

Like the other approaches, the mini posterior approach is muscle sparing and does violate the important hip abductor muscles. This allows immediate full weight bearing and progression of activities as tolerated. While the short-rotator muscles are dissected off the back of the femur bone to gain access to the joint, these muscles and the hip capsule are anatomically repaired at the end of the case and heal uneventfully without restricting the recovery from surgery.

Myths

1. Other approaches to hip replacement became popular because they purported to be "less invasive" and require less muscle dissection than the posterior approach. The contention was that these other approaches would lead to a more rapid recovery with faster return to activities and earlier discontinuation of assistive devices like a cane or walker. Subsequent comparative studies have however disproven this contention and shown that patients can recover at a similar rate regardless of approach, provided that "tissue-sparing" dissection be performed and other rapid recovery measures are instituted. Thus, patients who undergo a mini posterior total hip replacement can recovery as quickly as a direct anterior approach.
2. The posterior approach historically was considered to have a higher dislocation rate. Modern implant design and better surgical techniques that include less violation of the hip capsule and repair of the piriformis tendon have today made instability very uncommon with dislocation rates that are generally 1% or less. Hip precautions are generally not necessary although extreme positions should be avoided for the first few months as is true for any hip approach.
3. A smaller incision does not always mean less invasive. The internet is full of picture showing patients measuring the length of their hip replacement incision. Incisions that are too small can limit visualization and require more trauma to the underlying muscles to get the implant seated through such a small window. Approaches that overly on small incisions are more likely to have improper implant placement and improper implant size. These problems can lead to poor outcomes and premature failure of the operation.

Benefits

1. The posterior approach is considered a work-horse approach for the hip. While the operation can be done through an incision that is just over the length of a credit card, if necessary this

approach can be extended to deal with more complex conditions allowing the surgeon ample access to the joint and excellent visualization of the bony anatomy. Other approaches can provide more limited access to the joint and this can occasionally lead to problems with implant placement, particularly in obese patients, muscular patients or those with altered anatomy from developmental problems, prior trauma or prior surgery with hardware.

2. The posterior approach does not require the use of x-ray during the surgery as that anterior approach does. This limits radiation exposure to the patient and the surgical team.
3. There are not major sensory nerves that can get damaged around the mini posterior incision and thus persistent numbness or burning around the incision is uncommon as can be seen with the anterior approach where symptoms where linger symptoms in the sensory nerve to the thigh are uncommon.
4. This approach provides direct visualization of the hip abductor tendon. On occasion, tears of this tendon can be encountered in the setting of a hip replacement and can be repaired at the time of the surgery. The direct anterior approach does not provide access to this tendon and tear could be missed if present.
5. The mini-posterior approach is a fast surgery with less blood loss than other approaches. If patients have medical issues such as heart of lung disease for which a timely operation and less time under anesthesia is preferable, the mini posterior approach can usually be done in about one hour or less.
6. Any stem design can be used through the posterior approach. Certain types of anatomy may require specific stem design to achieve stable implant fixation that allows immediate weight bearing. Other approaches like the direct anterior approach require specific stems to be used to allow the implant to be placed through a more limited window of exposure. If these implant designs do not fit the patients anatomy then complications such as loosening of fracture can occur.
7. Any revision surgery can be done through the posterior approach. This is much more difficult through other approaches which limit exposure and ability to extend dissections to obtain wider access to the joint.

Drawbacks

There are really no drawbacks to the mini-posterior approach. Historically is has excellent results with a low complication rate and a very high satisfaction rate. Current research shows that regardless of the approach used for total hip replacement, by 6 weeks after surgery, most patients have achieved the same level of function. Rapid recovery techniques that expedite return to function can be used with any hip approach including the mini-posterior. What is most important about a total hip replacement is having a surgeon who you trust can do a great job of the performing the operation with accurate implant placement. Long-term this will dictate the function and durability of the joint much more so than approach used to put it in. Considering that a modern hip replacement is expected to last 25+ years, the most important outcomes measure is not how fast someone returned to playing golf, but how many complication free years that person had of high function and pain free motion. The focus on results with this operation should be long-term and not short-term.