

Editorial

In My Experience...Anterior Approach in to the Hip in Total Hip Replacements

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I review here my experiences with the anterior approach to the hip in total hip arthroplasty.

Embarking on the anterior approach to hip replacement in 2003 marked a significant juncture in my career as a young orthopedic surgeon. Driven by the commitment to the Hippocratic oath – to do no harm – and the perpetual pursuit of enhanced patient care, my interest in this methodology was piqued by Joel Matta's enlightening presentation at the AAOS. The logic of minimizing muscle damage during surgical interventions resonated deeply, reflecting a collective goal among physicians to improve patient outcomes.

Now, delving into the intricacies of the top 10 essential points regarding anterior approach hip replacement, I categorize these insights into two primary domains: the feasibility study and the learning curve, followed by a meticulous focus on technical aspects.

FEASIBILITY STUDY AND LEARNING CURVE

1. **Self-Reflection and Preparation:** Before venturing into the anterior approach, introspection is key. As-

sess your skills, surgical volume, and patience to embrace a new methodology, ensuring the guiding principle remains "first, do no harm."

2. **Observation and Education:** Commence your journey by observing a proficient anterior approach hip replacement surgeon. Spend a day absorbing the workflow and consider scrubbing in. This hands-on experience lays the groundwork for understanding facility requirements and available resources.
3. **Comprehensive Courses:** Attend robust courses, such as the iMACx in Houston or industry-sponsored alternatives. Engage in cadaver practice to grasp instrumentation nuances, all while retaining familiarity with your preferred implant.
4. **Benefit from Proctoring:** Seek proctoring opportunities, either within a collaborative surgical group or with a supportive orthopedic mentor. This helps navigate the intricacies of releases that may not be fully covered in formal courses, thereby avoiding potential complications.

^a As a board-certified and fellowship-trained joint replacement surgeon, Stefan Kreuzer, M.D., [M.Sc.](#), has pioneered the development of minimally invasive and computer-assisted hip and knee replacement surgery. He is actively involved in training and has been invited to lecture and demonstrate his surgical techniques for surgeons throughout the United States, Asia, Australia, and Europe. Dr. Kreuzer is currently on multiple design teams for the development of the next generation of knee and hip implants and acts as a consultant to many device companies to assist them with further advancing care for patients.

With many research and academic interests in addition to his clinical practice, he has devoted his career to improving the quality of life for patients in need of joint replacement surgery. A native of Switzerland, Dr. Kreuzer moved to the United States in 1983. He graduated from medical school at the University of Texas in San Antonio in 1995 and completed his orthopedic surgery residency at the University of Texas Medical Branch in Galveston, Texas. He then undertook a fellowship in Adult Joint Reconstruction at the Baylor College of Medicine in Houston, Texas in 2001.

As of October 2023, Dr. Kreuzer has performed over 6,500 anterior hip replacements and is one of the few experts in the world to perform revision total hip replacement through the anterior approach. Dr. Kreuzer is also a world expert on robotic joint replacement surgery; he was on the development team of the MAKO robotic system for anterior hip replacement and MAKO total knee replacement and was one of three surgeons to participate in the initial FDA approval study. He is currently working on the next generation of robotic surgery with THINK Surgical as a principal investigator in their FDA-approval clinical trial for total knee replacement, as well as working alongside Corin to develop kinematic alignment with the OMNIBotics system.

[Visit Dr. Kreuzer's Website](#)

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5. **Post-Case Observations:** After completing ten cases, return to observe a seasoned surgeon. Address specific struggles encountered during the initial cases and refine your skills through a set of targeted questions. This iterative process significantly reduces the anticipated learning curve.

TECHNICAL ASPECTS OF ANTERIOR HIP REPLACEMENT

6. **Optimizing Exposure:** Prioritize excellent exposure by understanding tensor fascia lata muscles' anatomy. Ensure meticulous hemostasis by ligating circumplex vessels and execute a precise capsular incision.
7. **Mastery of Neck Cut:** Achieve proficiency in performing a precise neck cut, avoiding extremes to facilitate optimal acetabular preparation.
8. **Acetabular Exposure and Reaming:** Utilize a C-arm for reaming during the learning curve. Exercise caution to avoid thinning out the anterior and posterior walls, ensuring a stable socket.
9. **Femoral Exposure:** Execute four critical femoral releases, including the inferior and superior acetabular releases, piriformis recess, and the 11 o'clock or one o'clock release for proper broaching.
10. **Broaching Techniques and Table Usage:** Employ proper broaching techniques, avoiding the use of a double offset broach handle is at all possible, and use imaging (C-arm or intra-op x-ray) to assure proper

placement and sizing of femoral implant. Consider using a table for enhanced exposure, especially beneficial for surgeons during the learning curve or with a lower case volumes.

Despite the challenges and potential complications associated with the anterior approach, my experience underscores the importance of thorough learning, proper equipment utilization, and participation in cadaver workshops to expedite the learning curve.

POSITIVE EFFECTS OF ANTERIOR APPROACH

On the positive side, the supine position proves superior for accurate implant positioning compared to the lateral position. Incorporating navigation is seamless, and over 6,000 navigated hips attest to the precision achieved in implant placement.

The recovery is notably faster with anterior approach hip replacement, potentially leading to a lower dislocation rate. This translates into smoother transitions from inpatient to outpatient settings, particularly beneficial for conducting surgeries in an ambulatory surgery center (ASC).

The ease of patient recovery, coupled with reduced post-operative discomfort, contributes to a high level of patient satisfaction. This, in turn, fosters the growth of one's practice, making the anterior approach to hip replacement a valuable addition to the orthopedic surgeon's repertoire.

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