

Direct Anterior Approach Total Hip Replacement (THR)

Current Insights and Developments in Direct Anterior Approach for Hip Arthroplasty

Introduction

The Direct Anterior Approach (DAA) for Total Hip Replacement (THR) has continued to gain traction in orthopaedic surgery. Known for its minimally invasive nature and muscle-sparing technique, the DAA is increasingly favoured by both surgeons and patients.

Overview of the Direct Anterior Approach

The DAA accesses the hip joint through the intermuscular and internervous plane between the sartorius and tensor fascia latae muscles. This approach avoids detachment of major muscles, aiming to reduce soft tissue trauma, post-operative pain, and promote faster recovery. The operation is typically performed with the patient in the supine position, allowing for intraoperative assessment of leg length and component positioning. It can be performed both with and without a traction table.

Recent Advancements

- **Instrumentation and Technology:** The adoption of specialised instrumentation has improved exposure and ease of femoral preparation, addressing some of the initial technical challenges associated with DAA.
- **Navigation and Robotics:** The integration of computer navigation and robotic assistance is being investigated to enhance component placement accuracy and reduce the risk of malalignment.
- **Enhanced Recovery Protocols:** Multimodal pain management and rapid mobilisation protocols have further improved early functional outcomes for patients undergoing DAA THR.

Clinical Outcomes

Recent studies continue to report that DAA is associated with:

- Reduced post-operative pain and narcotic use compared to posterior and lateral approaches.
- Shorter hospital stays and quicker return to function, with many patients mobilising within hours after surgery.
- Comparable or improved patient-reported outcomes and satisfaction scores.
- Lower rates of revision for THR instability or peri-prosthetic infection compared to standard approach THR.

However, evidence also suggests a learning curve for surgeons, with higher complication rates early in adoption, particularly intraoperative femoral fractures and wound complications.

Patient Selection and Surgeon Experience

Appropriate patient selection is paramount to optimise outcomes. While DAA is suitable for many patients, those with severe obesity, significant deformity, or previous hip surgery may benefit from alternative approaches. Surgeon experience and case volume are also key predictors of success, with outcomes improving as the learning curve is overcome.

Future Directions

- Further refinement of minimally invasive techniques and technology integration.
- Long-term outcome data comparing DAA with other approaches to better define indications and benefits.
- Ongoing education and training programs to mitigate the learning curve and associated complications.