

Total Hip Arthroplasty by Direct Anterior Approach in Patients With Obesity

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Introduction

Total hip arthroplasty (THA) in patients with obesity (body mass index $>30 \text{ kg/m}^2$) is associated with an increased rate of complications, which include malpositioning of the acetabular or stem components, leading to dislocation and infection. Most reconstructive orthopaedic surgeons prefer to perform THA in patients with obesity via a posterolateral or direct lateral approach; however, recent evidence suggests that the direct anterior approach (DAA) may be a safe option in patient with obesity because of the reduced fat width at the anterior aspect of the thigh. In addition, sparing of muscles during the DAA may promote faster recovery in patients with multiple comorbidities. This video describes the surgical technique for THA via the minimally invasive DAA in a 50-year-old man with morbid obesity (body mass index, 40 kg/m^2) and hip osteoarthritis and discusses the clinical and radiographic outcomes of a case series of 256 consecutive hips in patients with obesity who underwent THA via this technique.

Materials and Methods

A total of 239 patients with obesity (256 hips) and hip osteoarthritis underwent THA via the minimally invasive DAA between May 2012 and January 2021 at the institution of the authors of this video. The mean follow-up was 63 months (range, 4 to 81 months). The Harris hip score of each patient was determined preoperatively and at final follow-up. Demographic and clinical parameters, including mean patient age, in-hospital length of stay, and day of postoperative stair climbing, were retrospectively collected from hospital records. Intraoperative and postoperative complications were recorded at the hospital and during outpatient evaluation. Cup inclination and stem alignment were evaluated on postoperative radiographs.

Results

The mean patient age at the time of surgery was 50.3 years (range, 25 to 71 years). The mean preoperative Harris hip score was 45.5 points (range, 24 to 66 points). The mean Harris hip score significantly improved to 89.4 points (range, 80 to 99 points) at final follow-up ($P < 0.001$). Cup placement was in the Lewinnek safe zone ($40^\circ \pm 10^\circ$), with a mean cup placement of 38.2° (range, $21^\circ \pm 58^\circ$). Stem alignment was in the tolerance range of varus/valgus ($\pm 5^\circ$), with a mean valgus stem alignment of 0.3° (range, $-5.6^\circ \pm 7.2^\circ$). The mean hospital length of stay was 7.2 days (range, 3 to 12 days). Patients achieved a rehabilitation outcome of autonomous stair climbing at a mean of 4.4 postoperative days. An overall complication rate of 4.7% (12 of 256) was reported, including three superficial infections and one deep infection, two periprosthetic fractures, two dislocations, and four lateral femoral cutaneous neuroapraxias.

Conclusion

The results of the study support the DAA for THA in patients with obesity. The DAA can improve the outcomes of THA in this patient population because of its low invasiveness, which promotes faster rehabilitation. If performed by surgeons experienced with the approach, the DAA is associated to good THA component positioning and an acceptable complication rate.