A Prospective Double-Blinded Randomised Controlled Trial comparing the Direct Superior Approach versus Posterior Approach for Total Hip Arthroplasty

Babar Kayani, Sujith Konan, Jenni Tahmassebi, Dia Giebaly, Fares Sami Haddad

INTRODUCTION:

The direct superior approach (DSA) is a modification of the posterior approach (PA) that preserves the iliotibial band and short external rotators except for the piriformis or conjoined tendon during total hip arthroplasty (THA). The objective of this study was to compare postoperative pain, early functional rehabilitation, functional outcomes, implant positioning, implant migration, and complications in patients undergoing the DSA versus PA for THA.

METHODS:

This study included 80 patients with symptomatic hip arthritis undergoing primary THA. Patients were prospectively randomised to receive either the DSA or PA for THA, surgery was undertaken using identical implant designs in both groups, and all patients received a standardized postoperative rehabilitation programme. Predefined study outcomes were recorded by blinded observers at regular intervals for two-years after THA. Radiosteriometric analysis (RSA) was used to assess implant migration.

RESULTS:

There were no statistical differences between the DSA and PA in postoperative pain scores ($p=0.312$), opiate analgesia consumption ($p=0.067$), and time to hospital discharge ($p=0.416$). At two years follow-up, both groups had comparable Oxford hip scores ($p=0.476$); Harris hip scores ($p=0.293$); Hip disability and osteoarthritis outcome scores ($p=0.543$); University of California at Los Angeles scores ($p=0.609$); Western Ontario and McMaster Universities Arthritis Index ($p=0.833$); and European Quality of Life questionnaire with 5 dimensions scores ($p=0.418$). Radiographic analysis revealed no difference between the two treatment groups for overall accuracy of acetabular cup positioning within Lewinnek's safe zones ($p=0.687$) and femoral stem alignment ($p=0.564$). RSA revealed no difference in femoral component migration ($p=0.145$) between the groups at two years follow-up.

DISCUSSION AND CONCLUSION:

There were no differences between patients undergoing the DSA versus PA for THA with respect to postoperative pain scores, functional rehabilitation, patient-reported outcome measurements, accuracy of implant positioning, and implant migration at two years follow-up. Both treatment groups had excellent outcomes that remained comparable at all follow-up intervals.