

## Complications and Outcomes of Primary Total Hip Arthroplasty in Displaced Neck of Femur Fractures

Jillian Rutherford-Davies, FRCS (Tr&Orth); Aatif Mahmood, MRCS;

Gunasekaran Kumar, FRCS (Tr&Orth);

Royal Liverpool University Hospital, Liverpool, United Kingdom

**Background/Purpose:** Total hip arthroplasty (THA) has been shown to be better than hemiarthroplasty or internal fixation for treatment of displaced intracapsular neck of femur (NOF) fractures, due to reduced failure rates and better outcomes. Improvement in prostheses, bearing surfaces, enhanced rehabilitation, and better cost benefit in medium to long term have all played significant parts in the success of arthroplasty in NOF fractures. The aim of this study was to analyze the complications and outcomes of THA in isolated displaced NOF fractures in our institute.

**Methods:** A retrospective analysis of a prospective database was performed. All THAs for NOF fractures were identified between June 2008 and August 2013 and analyzed. Inclusion criteria for this study were: isolated low-energy displaced intracapsular NOF fractures and follow-up of at least 6 months. Exclusion criteria were high-energy injuries, pathological fractures (other than osteoporosis), associated ipsilateral hip arthritis, and associated injuries. Data collected included surgeon grade, time to surgery from presentation, hemoglobin (Hb) drop, type of prosthesis used, wound complications, unplanned surgery, periprosthetic fractures, Short Form-12 (SF-12) physical component summary (PCS) and mental component summary (MCS), Oxford Hip Score (OHS) (range, 0-48), limp, and radiographic outcomes (limb-length discrepancy [LLD], subsidence, and heterotrophic ossification [HO]).

**Results:** Between June 2008 and August 2013, 141 THAs performed for NOF fractures were included on the basis of inclusion/exclusion criteria. Of the 141 (33 males/108 females) THAs performed with a mean age of 71 years (range, 51-92), 124 had a follow-up of at least 6 months. Average follow-up was 14 months (range, 6-48). All patients were American Society of Anesthesiologists (ASA) 1 or 2 or 3, Abbreviated Mental Test (AMT) score of 8 or above, and community ambulators with or without walking aids. 63 THAs were performed via posterior approach and 78 were through a lateral approach. 123/141 were performed by consultants and the rest by the registrars. Time from presentation to surgery was 2.4 days (range, 0-9) and average Hb drop was 2.7 g/dL. The majority of THAs were uncemented (125) with a bearing surface combination of polyethylene on metal. All 124 patients had radiographs assessed for initial LLD. 14 patients had an initial LLD of >0.5 cm (-1.2 cm to +1.6 cm) and femoral subsidence in uncemented femoral stem of more than 2 mm was identified in 6 with no functional issues. Functional scores were available for 74 patients. Average OHS was 32 (23-45), SF-12 PCS 43 (31-56), and MCS 39 (33-55). There were 6 wound healing issues that required washout and primary closure. There were no deep infections. Revision to cemented long femoral stem was performed for 6 femoral periprosthetic fractures (4 uncemented, 2 cemented). There were 5 dislocations that were successfully treated with closed reduction and bracing and one case of HO that did not require surgery. Six patients were from out of area and were followed up elsewhere. There were 5 deaths within 6 months and 6 patients failed to attend follow up.

**Conclusion:** In selected patients, primary THA for low-energy displaced NOF fractures provides good functional outcomes and acceptable complication rates. Type of prosthesis used did not have any significant difference in outcomes.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an “off label” use). For full information, refer to page 600.