



Total hip replacement or hip hemiarthroplasty for the treatment of displaced femoral neck fractures in the elderly?

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Hip arthroplasties for the treatment of displaced femoral neck fractures (DFNFs) in the elderly can be total hip replacement (THR) or hip hemiarthroplasty (HHA), either cemented or uncemented.^[1,2] However, despite the high prevalence of these fractures and large number of studies on this topic, the most optimal choice of arthroplasty to be used still remains unclear.

The majority of hip fractures are fragility fractures in the elderly resulting from a low-energy trauma which increase the risk of mortality.^[3-5] These fractures are one of the main causes of disability with a negative impact on patient mobility and physical independence.

A meta-analysis with the data from 2,325 (1,171 HHA *vs.* 1,154 THA) patients revealed that both HHA and THA were valid solutions to treat DFNFs, with comparable survivorship.^[6] Hip hemiarthroplasty was associated with reduced

dislocations, while a lower risk of acetabular erosion and further revision surgeries were reported for THA.

Another meta-analysis using data from 24 randomized-controlled trials (RCTs) including 2,808 procedures concluded that THA led to the highest Harris Hip Scores and lowest rate of revision surgery compared to bipolar HHA (B-HHA) and unipolar HHA (U-HHA).^[7] However, B-HHA had the lowest dislocation rate compared to U-HHA and THA. No significant differences in functional outcomes and complication rates were found between cemented and uncemented implants; however, a tendency for lower mortality, revision and dislocation rates in cemented implants was evidenced.

A total of 25 RCTs involving 3,223 patients (1,568 THA and 1,655 hemiarthroplasty [HA]) were included in a meta-analysis.^[8] This meta-analysis showed that THA had better mid-term functional results and quality of life with a lower acetabular erosion rate, while HA was better in reducing hospital stay, surgery time and blood loss, as well as lower dislocation rates.

A total of 9,638 patients with a neurological disease who also underwent unilateral arthroplasty for a femoral neck fracture were included in another study.^[9] The patients were treated with HA, a conventional THA (cTHA) with femoral head size of ≤ 32 mm, or a dual-mobility component THA (DMC-THA). Patients with a neurological disease who sustained a femoral neck fracture had similar rates of dislocation following HA or DMC-THA. Most patients with a neurological disease were not eligible for THA and underwent HA, whereas eligible cases for THA could benefit from a DMC-THA.

An observational cohort study based on the Swedish Arthroplasty Register (SAR) compared 2,242

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patients with dual mobility cups (DMCs) and 6,726 with conventional total hip arthroplasty, all due to acute fractures.^[10] The authors concluded that total hip arthroplasty with a DMC had similar outcomes in terms of revisions and, due to dislocation or infections specifically, as one with conventional bearing. Similar outcomes were regardless of the surgical approach.

In conclusion, despite the high prevalence of femoral neck fractures and large number of studies on this topic, the most optimal choice of arthroplasty to be used still remains unclear.

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