

Dual Mobility Total Hip Arthroplasty Coupled With Acetabular Reconstruction In The Setting Of Acetabular Dymorphism In Complex Primary/Revision Arthroplasty. A Case Series.

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INTRODUCTION

Acetabular dymorphism may arise from several conditions such as developmental dysplasia of the hip (DDH), trauma, dislocations etc. This is a cause for concern for the surgeon when dealing with complex primary or revision hip arthroplasty. Failure rates are higher as the seating of the acetabular component may be compromised, giving rise to the possibility of further revisions secondary to dislocations and/or wear. In this report, we present our experience using cemented dual-mobility total hip arthroplasty (THA) coupled with acetabular reconstruction in two patients: in a patient with a dislocated 1st stage revision hip arthroplasty and one with chronic neglected DDH.

KEY WORDS: Dual-mobility, complex primary, hip arthroplasty, dislocation, revision arthroplasty

METHODOLOGY

Patient 1, a 73 year old lady who had previously undergone first stage revision arthroplasty with a cemented spacer implant for an infected primary THA. She suffered a dislocation 2 weeks post-surgery and was initially treated with traction and parenteral antibiotics for 6 weeks. Intra-operatively, she had a deficient postero-superior acetabular wall which was augmented using structural allograft; immediately prior to implanting a dual-mobility THA. (Figure 1)

Patient 2, a 64 year old lady with neglected DDH (Hartofilakidis Type B). Pre-operatively, she was noted to have a 4cm limb length discrepancy. Intra-operatively, we identified and reamed the true acetabulum. Postero-superior wall reconstruction was performed using structural autograft followed by dual-mobility THA. Post-operatively, her limb lengths were symmetrical. (Figure 2).



Figure 1: 3 months following dual-mobility THA & acetabular reconstruction (Patient 1)



Figure 2: 3 months following dual-mobility THA (Patient 2)

RESULTS

In both cases, the surgical incisions healed well and they were advised to keep toe-touch weight-bearing to minimize joint reaction forces for 3 months to allow adequate healing of the acetabular reconstruction. At 5 and 3 months post-operatively, both patients are fully weight-bearing comfortably and mobilizing independently with aids.

DISCUSSION

Dislocation/instability is a significant complication following revision/complex primary hip arthroplasty. In dual-mobility THA, the presence of two articulation surfaces increases the primary arc of motion prior to impingement thereby potentially reducing the risk of dislocation. The presence of two articulations may also reduce stresses on the acetabular implant-cement and cement-bone interfaces. This has the added benefit in the setting of acetabular reconstruction using structural graft augments whereby reductions in stress and strain may provide a better environment for bony union.

CONCLUSION

Dual-mobility THA coupled with acetabular reconstruction is a viable option in the setting of acetabular dymorphism or complex primary/revision hip arthroplasty.