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Case Report

Revision of total hip arthroplasty using dual mobility acetabular cup as treatment of recurrent hip dislocation following total hip arthroplasty: a case report

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ABSTRACT

One of the most common causes of revision surgery after total hip arthroplasty (THA) is dislocation. We present a recurrent case of hip dislocation following THA treated with dual mobility cup. Treated with total hip arthroplasty in another hospital in January 2024. Following the first surgery he suffered from a first event of hip dislocation in February 2024, managed with open reduction. One week following the open reduction, the hip became dislocated again and was treated with closed reduction. Two months later he was referred to our center with recurrent posterior right hip dislocation. Revision surgery was performed, using dual mobility acetabular cup. Intraoperative evaluation showed adequate stability and limb length was acceptable. Partial weight-bearing and active range of motion exercise was initiated following the surgery. Dual mobility acetabular cup reduces rate of dislocation and has satisfactory mid-term outcome.

Keywords: Recurrent hip dislocation, Dual mobility, Acetabular component, Total hip arthroplasty

INTRODUCTION

One of the most common complications following total hip arthroplasty (THA) is dislocation. Inadequate implant position, soft tissue and/or bone impingement are several factors contributing to dislocation after THA.[1] Revision THA is a very technically demanding procedure. Several strategies can be considered to address this issue, including larger diameter femoral heads, elevated rim acetabular implants, constrained implants, and dual mobility construct.[2,3]

Dual mobility is comprised of two articulations that may improve stability, allowing greater range of motion and head-to-neck ratio and increase in jump distance, all resulting in greater resistance to dislocation.

CASE REPORT

We present a 64-year-old male presented with a dislocated right hip following a minor fall. Prior to the current condition there was a history of neglected right hip dislocation that occurred two months prior to admission. This was treated with total hip arthroplasty in another hospital in January 2024. Immediate postoperative course was uneventful, however, two months after surgery the patient suffered from a first event of hip dislocation in February 2024, managed with open reduction. One week following the open reduction, the hip became dislocated again and was treated with closed reduction. Two months later he was referred to our center after a low energy injury resulting in recurrent posterior right hip dislocation. On physical examination, flexion, adduction and internal rotation of the hip were

apparent. Presence of limb length discrepancy of 3 cm was noted. Radiologic evaluation showed posterior dislocation of the hip joint (Figure 1).

Revision surgery was performed, with incision made on the previous one. Fibrous tissue was prominent upon superficial dissection. Joint capsule was exposed, showing dislocation of femoral component posteriorly. Acetabular component was then removed. The acetabulum was reamed and medialization was carried out, with inclination at 45 degree and anteversion at 15 degrees. Cemented dual mobility cup with size of 54 mm, a 54 mm liner and head with 28 mm diameter were installed (Figure 2). Intraoperative evaluation showed adequate stability and limb length was acceptable. Partial weight-bearing and active range of motion exercise was initiated early following the surgery.

Figure 1: Pre operative X-ray.

Figure 2: Post operative x-ray.

DISCUSSION

Dislocation is one of the most devastating complications following THA. Preventing and treating this complication is challenging, since there is very limited consensus on this matter.[2] Less risk of dislocation, less impingement, lower friction and wear are several benefits of dual mobility cups.[4] Previous study on dual mobility constructs showed that they had protective property against dislocation and revision caused by dislocation, both in primary and revision THA.[5] Mid-term evaluation also showed that dual mobility was superior in term of overall survivorship.[3] It is, however, important to emphasize that dual mobility implants are not alternative to inadequate surgical technique or previous errors, which includes disproportionate cup orientation or inadequate soft tissue restoration. Other matters that need to be considered when evaluating dislocations following THA include implant selection, surgical technique, patient factors, soft tissue including capsular repair, femoral head diameter and component orientation.

CONCLUSION

Dual mobility implants can be considered since it has low rate of instability and satisfactory overall survivorship.

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