

Response to Reviewer 1 Comments

1.However, the symptoms worsened gradually and because of progressive pain, destabilization and weakness of the right hip he was admitted to our hospital. Destabilization Please explain - instability ??

Response 1: We are very sorry, this is indeed an unprofessional statement. We have made amendments and rewrote repetitions in the text.

Change to:

However, the symptoms worsened gradually and because of progressive pain, walking limp and weakness of the right hip he was admitted to our hospital.

2.According to the clinical, laboratory, and imaging findings, we diagnosed his condition by exclusion as CN of the hip associated with syringomyelia and CSM, and performed a total hip arthroplasty (THA) on the right Please provide details – bone stock status intra op Abductor status Cemented cup - reason

Response 2: We are very sorry, we have added the bone stock status (the BMD 0.61g/cm^2 , T score -2.7), the Abductor status (the right abductor with a muscle strength of 5/5), and the cement-type Lubinus anti-dislocation acetabular cup, D = 50mm (Walde mar Link, Germany).

3.why not cementless Head size Precautions taken intraop and post op for stability Techniques adopted for prevention of dislocation

Response 3:We are very sorry, we have added the reason for this question.

In the preoperative evaluation, the patient suffered from osteoporosis and presented bone fragmentation and loss around the hip. We suspect that the mass and strength of bone around the hip joint cannot provide sufficient stability at the bone-implant interface if a bio-type acetabular cup is adopted. Moreover, the cement-type prosthesis possesses a short curing time and a strong fixation is achieved immediately after curing. Two to three days postoperatively, the patient can begin to bear partial weight under the protection, which reduces perioperative complications. During the operation, in order to reduce the risk of dislocation, we used the Hardinge approach to preserve the external rotator muscle group, which can reduce the destruction of hip joint stability, while closely suture the joint tendon; The cement-type lubinus anti-dislocation acetabular cup and biological fully coated biconical femoral stem were used to improve stability and promote bone in growth.

4. Follow up xray and clinical assessment - muscle power

Response 4: We are very sorry, we have added the follow up X-ray (as shown in Fig. 6) and clinical assessment - muscle power (right lower limb with a muscle strength of 4/5).