Treatment of Intertrochanteric and Peritrochanteric Fractures: Femoral Head Replacement and Proximal Femoral Locking Plate Implantation

Sir,

As a common type of fracture in the elderly,[1] intertrochanteric femoral fractures are often accompanied by peritrochanteric fractures due to osteoporosis.[2] Fracture displacement, slow fracture healing, poor blood supply, and complications in the elderly make conservative treatment and traditional screw internal fixation surgery unsatisfactory. Therefore, it is crucial to choose an appropriate fixation method for patients suffering from intertrochanteric fractures combined with peritrochanteric fractures.[3]

A new surgical method, namely femoral head replacement combined with proximal femoral locking plate is introduced in this study, which effectively solves the difficulties encountered in the clinic. This surgical method has various advantages. On the one hand, femoral head replacement can quickly restore the patient's hip function and enable the patient to go down to the ground at an early stage. On the other hand, the proximal femoral locking plate can immobilise the fracture of the greater or lesser trochanter, which makes the implanted femoral stem prosthesis in the bone marrow cavity more stable.

A 74-year-old female was hospitalised for 26 days for pain, swelling, and mobility problems in her right hip. She reported that she was struck by a bicycle two hours before, leading to trauma of the right hip for which she received oral analgesics.

Upon physical examination, notable findings were as follows: Swelling of the right hip, significant tenderness, and deformities of the right-lower limb characterised by flexion, shortening, and external rotation. Palpation of the right-lower limb revealed the presence of a strong dorsalis pedis pulse. Diagnostic imaging, which was three-dimensional reconstructions, indicated the presence of a right intertrochanteric fracture with associated peritrochanteric involvement and displaced fractures (Figure 1A). Upon admission, the patient underwent a comprehensive assessment of the right hip, followed by surgical intervention that involved the right femoral head replacement and fixation of the right femoral greater trochanter under general anaesthesia. Intraoperative findings confirmed an intertrochanteric fracture of the right femur, along with fractures of both the greater and lesser trochanters. Careful removal of blood clots surrounding the fractured femoral head was conducted, and the surgical site was thoroughly irrigated using normal saline and iodophor solution to minimise the potential risk of infection. An appropriately sized femoral stem was selected based on the dimensions of the femoral canal, and a corresponding femoral head was chosen based on the size of the acetabulum. The femoral stem was implanted first, followed by the insertion of the femoral head (Figure1B), that reached the successful reduction of the prosthetic femoral head. To prevent dislocation of the stem, the fractured greater trochanter (Figure 1C) was subsequently stabilised using a proximal femoral locking plate. The patient commenced gradual ambulation three days postoperatively. Follow-up x-rays confirmed that the surgical hardware was appropriately positioned (Figure 1D). The patient's recovery was closely monitored during subsequent follow-up appointments.

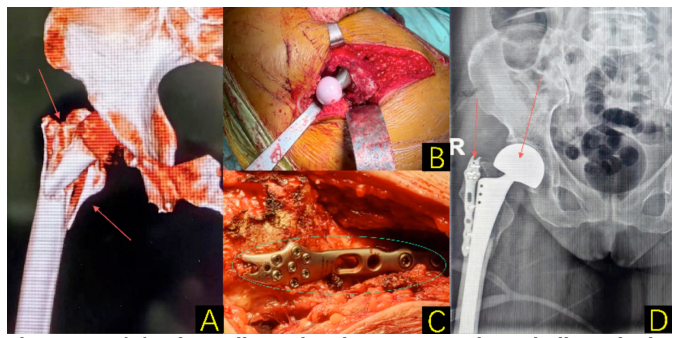

Figure 1: (A) Three-dimensional reconstructions indicated the presence of a right intertrochanteric fracture with associated peritrochanteric involvement and displaced fractures. (B) The femoral stem was implanted first, followed by the insertion of the femoral head. (C) A proximal femoral locking plate was used. (D) Follow-up x-rays confirmed that the surgical hardware was appropriately positioned.

COMPETING INTEREST:
The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:
CYL: Drafted, revised, and edited the manuscript.
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CZ: Performed questionnaire survey and collected the data.
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