

Case Report

Case report of total hip replacement in an amputee

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ABSTRACT

Total hip replacement (THR) in an ipsilateral neck of femur fracture is an unusual situation. Hip fractures are a common source of morbidity and mortality worldwide. Nevertheless, the discovery and development of hip arthroplasty has improved its prognosis, with a high survival rate and satisfactory functional results. Although total hip replacement has been well described in the literature especially for healthy individuals, we found only few pieces of information about the technical characteristics and results of this procedure in patients with lower extremity amputation. There were few previous case reports in the literature that describe total hip replacement (THR) in above-knee amputees and this was the first case to be done in our institute. We presented a case involving an above knee amputee (AKA) who sustained an ipsilateral neck of femur fracture. Our patient underwent a THR with a satisfactory post-operative outcome. Technical considerations for AKAs undergoing THR also are reviewed in this article.

Keywords: Total hip replacement, Amputee, THR in an amputee, Amputated limb

INTRODUCTION

THR is a highly successful operation in alleviating pain and improving the overall function of the hip, in patients with end-stage arthritis of the hip and avascular necrosis (AVN) complicating neck of femur fracture in old age. However, THR as a surgical option in an ipsilateral above-knee amputation is very rare with limited literature about the clinical outcomes.⁸⁻¹⁰ In this article, we were presenting a case of a 43 year old male patient who underwent THR of the ipsilateral above-knee amputated limb due to neck of femur fracture of subcapital type (Gardner's classification type 4) following a RTA.

CASE REPORT

43 year old male who met with a RTA, presented to us a week following the RTA with pain in right hip. The patient was an AKA, which was done 7 months ago for right foot

gangrene and progressive cellulitis. On presentation, he was conscious and coherent. Clinical examination revealed wasting of Gluetus muscle with a healthy above knee stump. X-ray of right hip joint was taken which showed femoral neck fracture of Gardner's classification type 4 (Figure 1).

Anaesthetist assessment and fitness for surgery was obtained and THR was done in lateral approach. The patient was put in left lateral decubitus position secured with anterior and posterior supports acting over the pelvis (Figure 2). Prepping and draping of the stump was done.

Through lateral approach, soft tissue was dissected. IT band was stretched. Gluetus medius, gluetus minimus, joint capsule were also dissected (Figure 3).

Femoral head excised and neck osteotomy was done. Head was found to be of size 47 mm. Acetabulum was revealed

and found to be of size 50 mm. A 50 mm modular shell with liner was used. Femoral stem reamed and size 01 used. Femoral head 36 mm used (Figure 4).

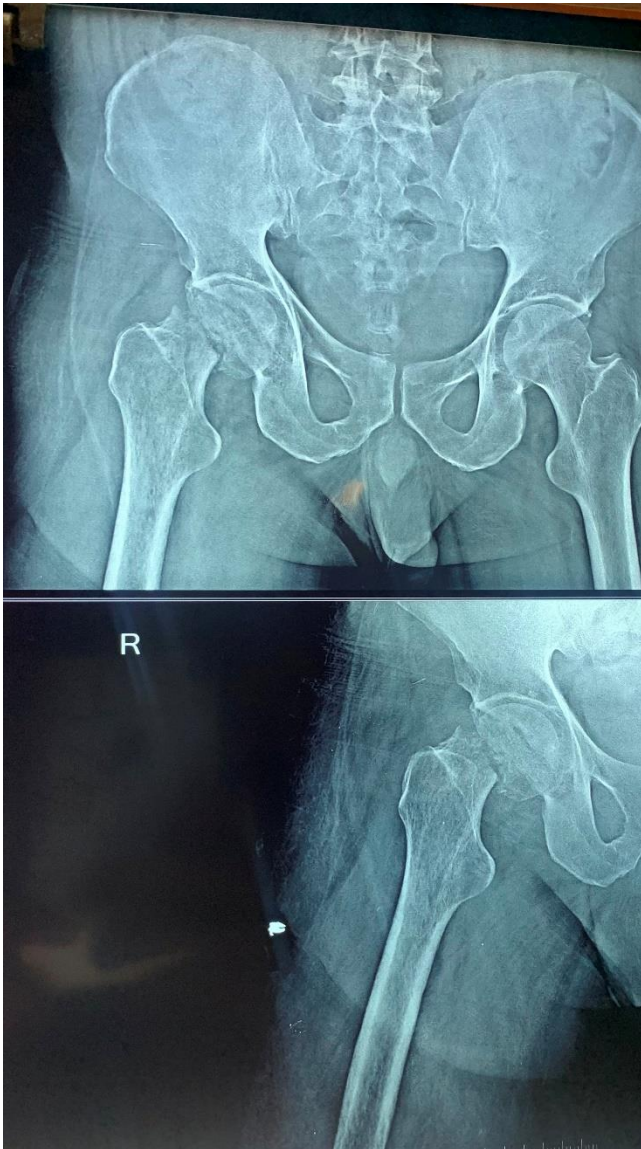


Figure 1: X-ray of pelvis and both hip joint showing fracture of right neck of femur (subcapital).

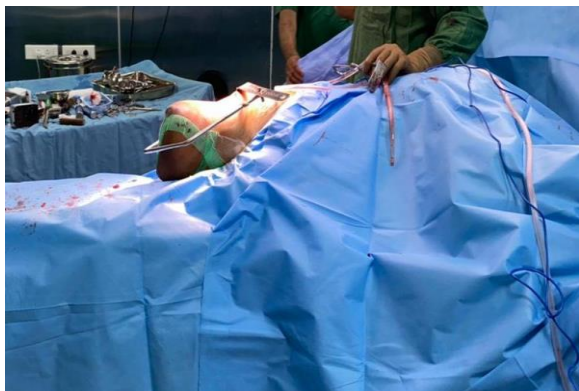


Figure 2: Positioning of patient in left lateral position.

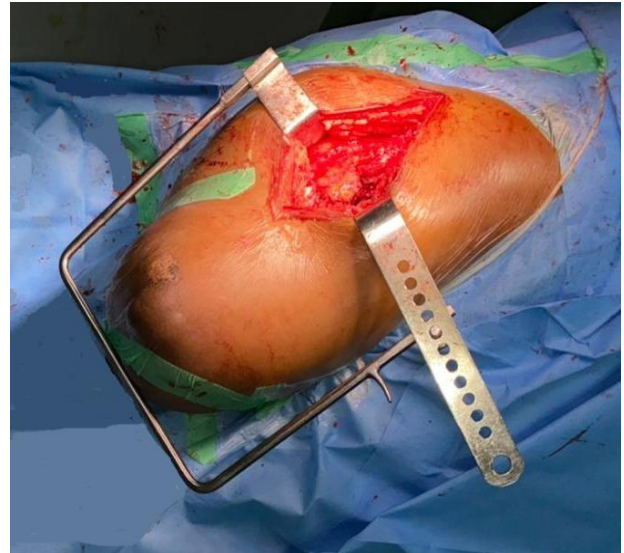


Figure 3: Pre-implantation picture after initial dissection.



Figure 4: Femoral implants.

Range of movements (ROM) was found to be satisfactory. Wound wash given and closed in layers. Sterile dressing

was applied with a drain. Post-operative radiographs showed proper placement of implant (Figure 5).

The patient tolerated the procedure well. The immediate postoperative period was uneventful. There was no infection, deep vein thrombosis, dislocation or any other major complications. Postoperative radiographs showed satisfactory implant alignment. On postop day 2 the patient was mobilised and physiotherapy started for rehabilitation of the patient. Now the patient had recovered and was able to mobilise with the support of walker. The patient recovered well and had achieved good ROM, similar to those movements before the RTA. Patient was planned for prosthesis placement after 6 months.



Figure 5: Post-operative picture showing implant placement.

DISCUSSION

In a case of neck of femur fracture the most common complication faced was avascular necrosis of the head. The main blood supply to the femoral was achieved through the retinacular arteries and artery to the ligamentum teres (Foveolar artery). In a neck of femur fracture the blood supply was compromised, especially in a subcapital type leading to AVN. The problem in an amputee was the placement of proximal femoral nail or dynamic hip screw which can lead to secondary osteoarthritis of hip joint and failure of treatment in a later days, so the ideal choice was a THR. This will also compliment the patient in the following days in fitting of the prosthesis. The problems faced in a THR operation in an AKA were the placement of femoral stem and the acetabular module. To place the femoral stem and to achieve a good version, the conservative method of using the foot to find the version cannot be used in an amputee so, this had been achieved by palpation of lesser trochanter and mid of the calcar.

For placement of the acetabular module, a good traction was achieved by the usage of a bone hook and traction using tip of the greater trochanter as the guide. To increase the stability we had used a bigger sized head with a wider head to neck ratio. Studies have shown using Steinmann pin to achieve reduction of the joint.⁸ We wanted to avoid using a Steinmann pin as it was invasive and it can be a potential stress raiser. In our technique we simply used a bone hook around the inter-trochanteric area along with manipulation holding the stump. The final outcome was satisfactory.

The limitation of the study included the number of hip replacements done in amputees which were a rarity and the follow up period as the rehabilitation phase of THR with follow up takes years.

CONCLUSION

AKA with neck of femur fracture is an unusual presentation. The final outcome is supposed to make the patient bear a prosthetic device. To achieve that, instead of fixation, total hip replacement forms a viable option. The procedure is very technically challenging, but if performed precisely the result will be satisfactory.

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