

Case Report

Neglected Ipsilateral Hip Dislocation with Acetabulum Fracture and Knee Dislocation Reconstructed with Dual Mobility Total Hip Replacement & Hinged Knee Replacement

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Abstract:**Background:**

Ipsilateral hip & knee dislocations are rare injuries & replacement for both the neglected problems so far not reported in literature. We present a case of a 60-year-old male who presented with chronic pain and inability to bear weight on the right lower limb, two years after a road traffic accident and initial surgical management for acetabular and knee fractures. Examination revealed a dislocated right hip with proximal femoral migration, deformed femoral head, shallow acetabulum, and a subluxed right knee. After thorough evaluation, a two-stage surgical plan was adopted: Stage one involved a cemented total hip replacement with dual mobility cup and Wagner stem using a trochanteric osteotomy. Four weeks later, a cemented hinged total knee replacement was performed. Postoperatively, the patient was mobilized with full weight-bearing. This case highlights the successful staged reconstruction of a neglected hip dislocation with concurrent knee instability, enabling restoration of mobility and functional independence. Harris hip score and knee society score was excellent at 2 years follow-up.

Keywords: Neglected, ipsilateral hip & knee dislocation, THR, Hinge knee.

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Introduction:

Ipsilateral hip & knee dislocations are very rare injuries and sixteen case reports published so far¹. Most of these injuries are due to high velocity trauma and associated with other fractures that are open or close injuries and neurovascular injury²⁻⁷. But neglected hip and knee problems treated with joint replacement is so far not reported in literature

Case report:**Patient information:**

A 60-year old male presented at an outpatient clinic of orthopaedic department of civil hospital Karachi, with history of road traffic accident 2 years prior (car vs truck). After the accident, he was managed by the bone setter then was referred to private hospital where he was operated for right side acetabular fracture and knee fracture. He presented to us with history of pain in right hip and right knee joint. Pain was mild to moderate in intensity, dull in character, and not radiating. Pain was aggravated while putting

weight and relieved with analgesics. On presentation, he was unable to weight bear on right lower limb for last 2 years after trauma and previous surgery. He was house bound, unable to join his job as a peon, couldn't use public transport and walked on his left lower limb with the help of crutches. He had been hypertensive for the past 5 years. He was taking antihypertensive and analgesic medication regularly with on & off antacids. He received a transfusion of 2 units of packed cell volume during the previous surgery. He was not addicted to anything and had no history of allergies. His demand was that he should be an independent ambulator and resume his job.

Clinical examination:

On examination, the patient was sitting in a wheelchair and unable to bear weight on the right lower limb. The Trendelenburg test could not be assessed. His right leg was shortened and externally rotated with wasting of thigh and calf muscles. Greater trochanter was palpable at a higher level of anterior-inferior iliac spine,

internal & external rotation 20°, abduction & adduction 20°, flexion 90° and Harris hip score was 10.

On examining knee, wasting of quadriceps muscles, right anterior drawer test, and Lachman test were positive. Right posterior drawer and posterior sag were also positive along with right varus and valgus instability. The McMurray test was not possible to perform due to pain. Dorsalis pedis artery & posterior tibial artery were palpable, and function of sciatic nerve was intact. The left lower limb was normal. Left lower limb was normal.



Imaging:

X-ray full pelvis AP view showed a neglected dislocated right hip with a proximal migration of femur, a deformed femoral head with a shallow acetabulum and a recon plate placed. Knee AP & lateral view showed a subluxed knee with K wires placed. Another x-ray after the removal of the K-wires showed subluxed knee joint with calcification visible at the patellar tendon.



A 3D CT scan of his pelvis showed a dislocated hip with proximal migration, deficient superior wall and deformed femoral head and shallow pseudo-acetabulum.

His hematological work-up was unremarkable. His ESR and CRP were within normal limits.



Figure-3: a. AP view; b. Lateral view -- Knee dislocation held with K-wires



Figure-4: a. AP view b. Lateral view -- Subluxed knee posteromedially with calcification at patellar tendon)

Surgical planning:

After consent & counselling, we planned a 2-stage surgery. The 1st stage was a right side cemented THR with a dual mobility cup and a Wagner stem with trochanteric osteotomy through Kocher Langenbeck approach. The 2nd stage took place 4 weeks later; a right side hinged total knee replacement (TKR). Two stage was planned to avoid the infection.

Surgical procedure:

Operative steps of THR; Through the posterior Kocher Langenbeck approach, sciatic nerve was identified and protected, and the recon plate was removed. The posterior wall of the acetabular cup was reconstructed with a graft taken from the femoral head and fixed with 3.5 mm screws; standard greater trochanteric osteotomy was

made, and the soft tissue around the proximal femur was dissected. A cemented dual mobility cup was used for acetabulum reconstruction. The femur was prepared thereafter and uncemented Wagner stem was inserted and joint was relocated. Osteotomy was reattached with fiber tape. Leg length discrepancy was corrected and drain placed. Layered closure of wound was done over drain.

Stitches were removed at 2 weeks. Postoperative x-ray and follow-up x-rays were taken at 2 years. (Figure 5 & 6 here)

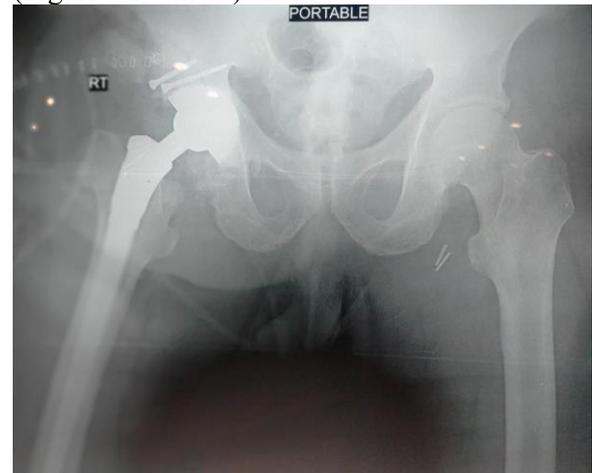


Figure-5: Postoperative x-ray pelvis AP view -- Superior wall reconstructed with bone graft and screws, cemented dual mobility cup and Wagner long stem.



Figure-6: at 2-years follow-up

After 4 weeks, the 2nd stage surgery was done. His knee was exposed through anterior paramedian incision. Distal femur was prepared first than proximal tibia. The implant trail was used to assess stability first, then cemented hinged total knee replacement was done. Postoperatively, the patient was allowed to bear full weight on the first day with the use of a walker. Stitches were removed after 2 weeks. Quadriceps strengthening exercises were done for 4 weeks and knee flexion was achieved at 90°. After 3 months, he was allowed to walk with a stick.

Follow-up:

He was kept on regular follow-up every three months. Patient was mobilized with full weight bearing after both surgeries with help of walker up to 6 weeks, then with stick. Postoperative AP and lateral x-rays at 2 years follow up taken (Figure 7 here). His Harris hip score was 91 (Excellent) and knee society score 95 (Excellent) at last follow-up of 2 years.

Discussion:

High velocity trauma mostly the reason behind the ipsilateral hip and knee dislocation as was the cause in our case car vs truck accident. 1 From all the reported cases most are associated with other injuries and the overall outcome is not that good either due to delay or missed injuries ^{8,9}. M Jallidi et al; reported a case with ipsilateral hip & knee dislocation with associated injuries of femoral head fracture and patella fracture that was managed earlier with reasonably good results ⁸. In our case patient was initially treated by bone setter and later was operated elsewhere and remained non-ambulatory for 2 years.

Replacement is the one of the best option for the post traumatic arthritic joints that improves the quality of life and restore the mobility. ¹⁰ As was in our case where patient developed arthritis in both hip and knee joints & staged reconstruction of both joints decreased the surgical trauma and safe replacement of both the joints.

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Conclusion:

Ipsilateral hip and knee dislocations are rare injuries with bad outcome. The key message is to manage these complex injuries appropriately once these are fixed earlier that will increase the chances of better outcome and avoid complications. But Once complications develop patient should be planned appropriately and can be managed with arthroplasty with excellent outcome.

Figure-7: a. AP view; b. lateral view, of hinged knee prosthesis



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