



# THE FLOATING HIP: CASE REPORT PRESENTATION

Krexī A., Tsakopoulos V., Vavourakis M., Patilas C., Chaniotakis K., Karampinas P., Vlamis J., Pneumaticos S.  
13rd Department of Orthopaedics, School of Medicine, National and Kapodistrian University of Athens, Athens, Greece.

## ABSTRACT

**INTRODUCTION:** Floating hip describes a rare combination of fractures/dislocation and is usually seen in multiple injured patients, more often in young males involved in high-energy automotive/motorcycle trauma. These fractures are often associated to chest trauma, other skeletal fractures or polytrauma.

**MATERIAL AND METHODS:** A 45-year-old man was referred at the emergency department of our hospital 3 hours after he was crushed by his tractor. His radiographs revealed a right-sided posterior acetabular wall fracture with concomitant hip dislocation and ipsilateral femoral diaphyseal fracture. He also had rib cage fractures and fracture in the left ring finger.

In clinical examination, the patient presented peroneal nerve palsy, with acute partial drop foot and numbness in his foot.

Closed reduction of the hip dislocation under anesthesia was achieved and skeletal traction was placed to the distal femur.

The following day, patient was hemodynamically stable and scheduled for surgery. On the operation table, he was placed in left lateral position. Initially, the femoral fracture was reduced and fixated internally and then the acetabular fracture was originally stabilized.

**RESULTS:** The postoperative period was uneventful. In addition, the peroneal nerve recovered. Soft touch-down weight bearing was suggested starting from the first post-op day. After five days, patient was fit to discharge from our hospital.

**CONCLUSION:** A “floating hip” injury is rare but a surgical challenging. Each case needs to be planned and addressed .

## CONTACT

ΚΡΕΞΗ ΑΝΑΣΤΑΣΙΑ  
<Γ..Ν.Α. ΚΑΤ>  
akrexī@yahoo.gr  
6977093339

## INTRODUCTION

A ‘floating hip’ is defined as a fracture of the pelvis or acetabulum with a concomitant femoral fracture . All types of pelvis, acetabulum and femur fractures can occur in various permutations and combinations with each other . It is a rare combination of fractures and is usually seen in multiple injured patients (3,4). This uncommon combination of injuries has been documented to occur once in every 10,000 fractures . This injury also poses several treatment dilemmas and optimal treatment sequence is not agreed in literature .

## CASE REPORT

A 45-year-old man was referred at the emergency department of our hospital 3 hours after he was crushed by his tractor. Initially, he was treated in another hospital and resuscitated according to the ATLS protocol and then he transferred to our hospital, due to the severity of his fractures. On arrival, he was conscious and all his vital parameters were within normal limits.

His radiographs revealed a right-sided posterior acetabular wall fracture with concomitant hip dislocation and ipsilateral femoral diaphyseal fracture (Figures 1,2). He also had rib cage fractures and fracture in the left ring finger.

In clinical examination, the patient presented peroneal nerve palsy, with acute partial drop foot and numbness in his foot.

From his medical history, he was under treatment for diabetes mellitus and in the past he underwent craniotomy due to epidural hematoma after a road accident.

Closed reduction of the hip dislocation under anesthesia was achieved and skeletal traction was placed to the distal femur.

## CASE REPORT

The following day, patient was hemodynamically stable and scheduled for surgery. On the operation table, he was placed in left lateral position. A combined lateral approach for the femur along with a Kocher-Langenbeck approach to the acetabulum, was conducted. Initially, the femoral fracture was reduced and fixated internally using plate and screws (Figure 3). The acetabular fracture was originally stabilized with three lag screws across the posterior aspect of the fracture. After that a neutralization plate with screws was used (Figure 4). The reduction of both fractures was confirmed by the use of C-arm. The operating time was 3 hours and the intraoperative blood loss was 500 ml.

## RESULTS

The postoperative period was uneventful. In addition, the peroneal nerve recovered. Soft touch-down weight bearing was suggested starting from the first post-op day. After five days, patient was fit to discharge from our hospital.



Figure 1. AP right hip demonstrating a posterior wall acetabular fracture with ipsilateral hip dislocation.



Figure 2. AP right femur demonstrating a diaphyseal femur fracture.



Figure 3. AP femur 7 days post-ORIF femur fracture.

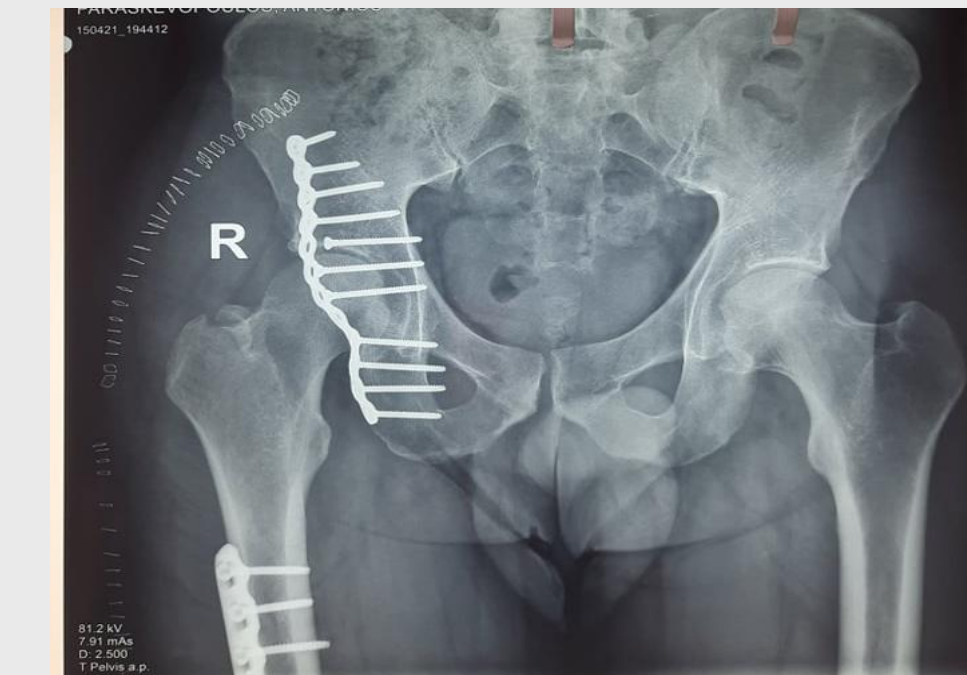


Figure 4. AP pelvis 7 days post-ORIF of posterior wall.

## DISCUSSION

Disruption of the skeletal continuity above and below an articulation can be considered as floating joint and can be associated with neurovascular and or soft tissue injury. The floating hip refers to the concomitant fracture of acetabulum, pelvis, and femur.

In 1999 Mueller classified floating hips into 3 types based on the location of the fractures. According to this classification Type A include a combination of acetabular and femoral fractures, type B a combination of pelvic and femoral fractures, while type C was a combination of fractures of acetabulum pelvis and femur.

Liebergall et al. in 2002 classified floating hips in two groups correlated it with its mechanism of action. The first group (A), defined as posterior type injury, includes a posterior type acetabular fracture and an ipsilateral diaphyseal femoral fracture and is found among front seat passengers. This pattern combines also a possible knee injury, which can present as a patellar fracture, knee instability or a simple knee effusion. The second group (B) is the central type injury, which includes a central type acetabular fracture and an ipsilateral proximal femoral fracture.

## DISCUSSION

According to Liebergall our case is a posterior type injury, regarding the pattern. Although the mechanism of the fractures differs from those described above.

In a patient with floating hip, there are three main issues to be planed before the surgery. The first issue is with regard the time of the surgery, the second with which fracture will be addressed first, and the last issue is with regard to the implant to be used.

Whereas the management of individual fractures of the pelvis and the femur has been thoroughly discussed in the literature and well accepted treatment guidelines have been established, optimal treatment sequence for floating hip is not agreed in literature. These decisions have to be made based on a case-to-case basis .

Regarding the complications nerve injuries, infection, DVT/PE, fat embolism, arterial injury, avascular necrosis, heterotopic ossification and hip osteoarthritis are referred.

Nerve injury can be either traumatic or iatrogenic. In a metaanalysis by Giannoudis et al. was found in 16.4% and 8 % of patients Mueller in his study had a 35 % occurrence of sciatic nerve injury. The recovery rate established for his sciatic nerve injuries were 25%. The neurological injuries documented by Suzuki et al in their paper of floating hip were 5 cases of neurological injuries, of which 3 were present at presentation. The other two cases developed lateral cutaneous nerve palsy post operatively. In our case the patient had peroneal nerve palsy, which was present in the arrival to our hospital.

## CONCLUSION

A “floating hip” injury is rare but a surgical challenging. There are a lot of difficulties in the management of ipsilateral pelvic and femoral fracture patients and the treatment of choice is still controversial. Each case needs to be planned and addressed differently based on the complexity of the fracture. We hope that our case report throws light on tackling this complex injury.

## REFERENCES

- Muller EJ, Siebenrock K, Ekkernkamp A, Ganz R, Muhr G. Ipsilateral fractures of the pelvis and femur – floating hip? Arch of Orthop Trauma Surg 1999;119:179–83.
- Sen R, Jha L. Floating Hip. Journal of Clinical Orthopaedics Jan – June 2017; 2(1):43-48.
- Suzuki T, Shindo M, Soma K. The floating hip injury, which should we fix first? Eur J Orthop Surg Traumatol. 2006;16(3):214–8. doi: 10.1007/s00590-006-0081-4.
- Helal B, Skevis X. Unrecognized dislocation of the hip in fractures of the femoral shaft. J Bone Joint Surg Br 1967; 49B: 296–300.9.
- Liebergall M, Lowe J, Whitelaw GP, Wetzler MJ, Segal D. The floating hip. Ipsilateral pelvic and femoral fractures. J Bone Joint Surg Br. 1992; 74: 93–100.6.