

# Ipsilateral Floating Hip and Floating Knee - A Rare Entity

Yashavantha Kumar C<sup>1</sup>, Nalini K B<sup>1</sup>, Prashanth Nagaraj<sup>1</sup>, Abhijith Jawali<sup>1</sup>

## What to Learn from this Article?

*Rare Presentation of ipsilateral floating knee and hip fractures in young adult.  
Review of literature on such cases and presenting results of management in one case.*

### Abstract

**Introduction:** Ipsilateral floating hip and floating knee are very rare injuries. These injuries so uncommon that only three cases of similar kind have been reported. These injuries are due to high velocity injuries following motor vehicle accidents. Management of such complex injuries is a challenging task even in experienced hands as there are no standard treatment guidelines for such fractures.

**Case Report:** We hereby report a 20 yr old male who sustained ipsilateral floating hip and ipsilateral floating knee injuries following motor vehicle accident. Patient was stabilized initially and later taken up for surgery. Patient was treated with interlocking nail for femur and tibia in the same sitting whereas acetabulum fracture was managed conservatively. At five months all the fractures united well with restoration of good range of motion in both hip and knee

**Conclusion:** Ipsilateral floating knee and floating hip are very rare injuries seen following high velocity motor vehicle accidents. There are no standard guidelines for treatment of those fractures as only a few cases of similar kind have been reported in literature. Early fixation and aggressive mobilization ensures fracture union and fewer complications.

**Keywords:** Floating hip; Floating Knee; Ipsilateral.

### Introduction

Ipsilateral floating hip and floating joint injury is a simultaneous skeletal disruption above and below a joint. Floating knee and floating hip occurring individually are not rare. Ipsilateral floating knee and floating hip are very rare. This type of uncommon fractures results from high energy trauma with a complex mechanism of injury[1]. To best of our knowledge only three cases of similar kind have been reported in literature [2-4]. Management of such injuries is a challenging task even in experienced hands. We hereby report a twenty year old patient who sustained ipsilateral floating knee and hip injury on right side following a motor vehicle accident.

### Case Report

A 20 year old male travelling in a motorcycle struck a car and sustained injuries to right lower limb. Patient had pain and deformity in right lower limb immediately following trauma. Patient was not able to walk and was taken to hospital by bystanders. There were no clinical features suggestive of head injury. Abnormal mobility and crepitus was seen in thigh and leg. There were no open wounds over right lower limb. There were no

### Author's Photo Gallery



Dr. Yashavantha  
Kumar C



Dr. Prashanth  
Nagaraj



Dr. Nalini K B



Dr. Abhijith  
Jawali

<sup>1</sup>Dept of Orthopaedics  
MS Ramiah Medical College, Bangalore, India -560054

#### Address of Correspondence

Dr Yashavantha Kumar C  
No 20, sri tiru nivas, lotte golla halli, near sterling residency,  
RMV II Stage, Bnagalore-560094  
Email: kumyashwanth@gmail.com Phone: 919663581868.

Copyright © 2013 by Journal of Orthopaedic Case Reports

Journal of Orthopaedic Case Reports | pISSN 2250-0685 | eISSN 2321-3817 | Available on www.jocr.co.in | doi:10.13107/jocr.2250-0685.105

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.



Figure 1: Preoperative photograph showing tibia fracture



Figure 2: Preoperative photograph showing femur fracture



Figure 3 : Preoperative radiograph of hip joint

neurovascular deficits distally. Patient was haemodynamically stable when received in casualty. Lower limb was splinted and adequate analgesics were given. Radiographs revealed undisplaced posterior column fracture and displaced femoral shaft fracture at distal third[Fig 1]. Displaced tibia shaft fracture of mid third was seen on the same side[Fig 2]. CT scan pelvis confirmed undisplaced posterior column fracture and ruled out other injuries [Fig 3-4].

Patient was taken up for surgery next day. Interlocking of the tibia was done first in supine position without fracture table. Patient was put on a fracture table and interlocking of femur was performed. Posterior column fracture stability was checked after femur and tibia nailing under fluoroscope and was found to be stable. Acetabulum fracture was planned for conservative management. Patient was advised bed rest for six weeks.

At six weeks bone grafting of femur fracture was done

from iliac crest due to cortical defect on medial side. Patient was started on partial weight bearing after six weeks. Full weight bearing was started at three months. All the fractures united by five months and patient returned daily activities[Fig 5-8]. At one year follow up patient is walking full weight bearing without aid and had good range of motion in both hip and knee joints[Fig 9-10]. There was no leg length discrepancy, rotational and angular malunion.

**Discussion**

Floating knee and floating hip injuries render both hip and knee joint unstable both proximally and distally. These types of injuries are high-velocity injuries. The injury usually results from a collision between a pedestrian or a motorcyclist and a motor vehicle as seen in our case [4]. There is enough literature for management floating knee and floating hip, but there is no sufficient

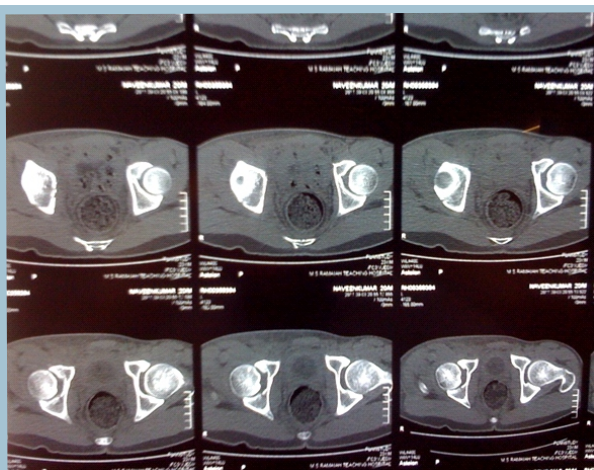


Figure 4: Undisplaced posterior coloumn fracture seen on CT scan



Figure 5: United fracture tibia



Figure 6: United fracture femur



Figure 7: Clinical photo with patient lying

literature in the management of simultaneous ipsilateral knee and hip floating injuries [6-8]. Liebergall et al. reported 17 patients with ipsilateral acetabular and femoral fractures [9]. They concluded that operative stabilization of the femur and acetabulum gave the best clinical results, while non-operative treatment of acetabulum fractures had to be the treatment of choice in undisplaced or minimally displaced fractures [9-10]. In our case acetabulum fracture was undisplaced and was stable on dynamic fluoroscopy. Closed reduction and interlocking nailing of both femur and tibia was done.

Many studies are there in literature regarding floating knee injuries. Letts et al. described five patterns of ipsilateral tibial and femoral fractures and made treatment recommendations on the basis of these patterns. Because of high prevalence of complications after closed treatment, operative stabilization of both fractures is recommended even for young children. Veith R G et al treated fifty-seven consecutive ipsilateral fractures of the femur and tibia in fifty-four adults. Twenty-one patients had concomitant life-threatening injuries, and in thirty-three extremities the fractures were open. Local complications included below-the-knee amputation, three deep infections, and four ununited fractures. Mortality rate in floating injuries. Mortality rates from floating knees range from 5% to 15% and amputations are reported in approximately 25% of patients [11-16].

In our case there were no neurovascular complications before and after surgery. There was only restriction of terminal 20 degree of terminal flexion in knee joint on the affected side. We opted not to nail both shaft fractures thorough same incision to avoid knee stiffness which is a notorious complications following such injuries. All the fractures were united by five months and patient was able to do routine daily activity. Patient was able to squat and

sit cross-legged. We want to emphasize the advantages of early fixation and aggressive mobilization of such complex fractures. Modern anaesthetic and surgical advances have made early fixation of multiple fractures a realistic and often life saving alternative.

We want highlight through this case report that such injuries are very very rare and only few cases of similar kind have been reported in literature. Early fixation and rehabilitation is the key to avoid complications of multiple injuries.

### Conclusion

Ipsilateral floating knee and floating hip are very rare injuries seen following high velocity motor vehicle accidents. There are no standard guidelines for treatment of those fractures as only a few cases of similar kind have been reported in literature. Early fixation and aggressive mobilization ensures fracture union and fewer complications

### Clinical Message

Although ipsilateral floating knee and hip fractures are rare, the management depends on personality of individual fractures. Rehabilitation should be aggressive and good results can be expected depending on severity of primary trauma.

### References

1. Brainard BJ, Slauterbeck J, Benjamin JB. Fracture patterns and mechanisms in pedestrian motor-vehicle trauma: the ipsilateral dyad. *J Orthop Trauma* 1992;6:279-82.
2. Güvenir Okcu, M.D., Hüseyin S. Yercan, M.D: A case of ipsilateral floating hip and knee with concomitant arterial injury; *Joint Dis Rel Surg* 2007;18(3):134-138.
3. Esoh J.B. Floating knee with ipsilateral floating hip injury equivalent variant: A Case report; *Nigerian Journal of Orthopaedics And Trauma* December 2006: 5(2):50 – 53.
4. NqAB et al: Concomitant ipsilateral floating hip and floating knee injuries; *IJCP* June 2007.
5. Bohn WW, Durbin RA. Ipsilateral fractures of the femur and tibia in children and adolescents. *J Bone Joint Surg [Am]* 1991;73:429-39.
6. Bone LB, Johnson KD, Weigelt J, Scheinberg R. Early versus delayed stabilization of femoral fractures. A prospective randomized study. *J Bone Joint Surg [Am]* 1989;71:336-40.
7. Court-Brown CM, Byrnes T, McLaughlin G. Intramedullary nailing of tibial diaphyseal fractures in adolescents with open physes. *Injury* 2003;34:781-5.
8. Letournel E. The treatment of acetabular fractures through the



- ilioinguinal approach. *Clin Orthop Relat Res* 1993;(292):62-76.
9. Liebergall M, Mosheiff R, Safran O, Peyser A, Segal D. The floating hip injury: patterns of injury. *Injury* 2002;33:717-22.
  10. Muller EJ, Siebenrock K, Ekkernkamp A, Ganz R, Muhr G. Ipsilateral fractures of the pelvis and the femur-floating hip? A retrospective analysis of 42 cases. *Arch Orthop Trauma Surg* 1999;119:179-82.
  11. Blake R, McBryde A Jr. The floating knee: Ipsilateral fractures of the tibia and femur. *South Med J* 1975;68:13-6.
  12. Fraser RD, Hunter GA, Waddell JP. Ipsilateral fracture of the femur and tibia. *J Bone Joint Surg [Br]* 1978;60:510-5.
  13. Karlstrom G, Olerud S. Ipsilateral fracture of the femur and tibia. *J Bone Joint Surg [Am]* 1977;59:240-3.
  14. Paul GR, Sawka MW, Whitelaw GP. Fractures of the ipsilateral femur and tibia: emphasis on intra-articular and soft tissue injury. *J Orthop Trauma* 1990;4:309-14.
  15. Veith RG, Winqvist RA, Hansen ST Jr. Ipsilateral fractures of the femur and tibia. A report of fifty-seven consecutive cases. *J Bone Joint Surg [Am]* 1984;66:991-1002.
  16. Letts M, Vincent N, Gouw G. The "floating knee" in children. *J Bone Joint Surg [Br]* 1986;68:442-6.

Conflict of Interest: Nil  
Source of Support: None

#### How to Cite this Article:

Kumar YC, Nalini K B, Nagaraj P, Jawali A - Ipsilateral Floating Hip and Floating Knee, A Rare Entity. *Journal of Orthopaedic Case Reports* 2013 July-Sep;3(3):3-6

## Join IORG Online Case Discussion Forum

### Academic Philanthropy and Knowledge Sharing

#### Speak the Orthopaedic Language : Join the Most Unique Orthopaedic Forum

Unique Case Discussions in company of more than Six thousand Orthopaedic Surgeons from around the world. Based on principle of 'Academic Philanthropy' where Surgeons from all across the world share their experiences and expertise for improving the 'Knowledge pool and add to improvement of patient management. Effective Knowledge based discussions with presentation of x rays, clinical pictures and videos which can be posted by any member of the Group. Regular Literature back up and articles are provided by the moderators and Research group on related topics. Healthy academic environment for case discussions with wide variety of cases ranging from simple cases to most complicated cases discussed. Great Learning experience for Orthopaedic Trainees and Post Graduate students with around 20 to 25 cases presented and discussed every day. In addition the forum has regular announcements of Orthopaedic fellowships, conferences and important useful notifications useful to all orthopods. Features like 'Article of the day' with free access to full text articles, Case of the day, Orthopaedic Case Bank, Collaborative Authorship program and Manuscript Assistance make this forum special and buzzing with activities. This forum is supported by Indian Orthopaedic Research Group and International Orthopaedic Research Group and also by Journal like *Journal of Orthopaedic Case Reports*, *Journal of Orthopaedic and Rehabilitation*, *Arthropeadia* and *Journal of Medical Thesis*. Join the largest Exclusive Group of Orthopaedic Surgeons and the Unique Online Continuing Medical Education (CME) forum. Present your work to this huge audience and get comments and fresh viewpoints and insights. EXCLUSIVELY FOR ORTHOPAEDIC SURGEONS ONLY. For more information please write to us at [indian.ortho@gmail.com](mailto:indian.ortho@gmail.com)

#### How to Join the Forum?

Search Indian orthopaedic research group on Facebook. Check under groups and ask to Join Facebook account is needed to join. Feel free to write to us at [indian.ortho@gmail.com](mailto:indian.ortho@gmail.com) for any assistance