

www.jmscr.igmpublication.org

Impact Factor 3.79  
ISSN (e)-2347-176x



**Journal Of Medical Science And Clinical Research**

An Official Publication Of IGM Publication

## **A Rare Case of Fracture Intracapsular Neck Femur with Distal Femur Nail in Situ**

Authors

**Dr. Rohan Khavte<sup>1</sup>, Dr. Yash Shah<sup>2</sup>**

<sup>1</sup>MS Ortho, Assistant Professor, Orthopaedics, Govt Medical College, Miraj, Maharashtra, India

<sup>2</sup>MS Ortho, Assistant Professor, Orthopaedics, Govt Medical College, Miraj, Maharashtra, India

Corresponding Addresses

**Dr. Rohan Khavte**

Khavte Accident and Orthopaedics Hospital, Taluka Daund, Dist. Pune Pin 413801.

Email: [rohankhavte@gmail.com](mailto:rohankhavte@gmail.com)

**Dr Yash Shah**

Matruseva Hospital, Pune

Email: [dr.yashshah@gmail.com](mailto:dr.yashshah@gmail.com)

### **ABSTRACT**

*A 64 year old male patient was previously operated 8 years ago for a fracture of right thigh came with a history of trivial trauma.*

*The patient was further investigated with X-ray of the right hip joint with the proximal half of the femur and X-ray of the right knee with the distal half of the femur both done in the antero-posterior view.*

*The X-ray suggested that the patient was previously operated for a distal femur fracture with an interlocking distal femur nail. The X-ray also showed an intra-capsular fracture of the neck of femur.*

**“PRE-OP TEMPLATING”** -*this was the biggest challenge confronting us. The Austin Moore Prosthesis normally ranges from a length of 11cm to 15cm. With the distal femoral nail in situ, the ordeal was to fit an AMP of an appropriate length so as not to give rise to a stress fracture at the junction between the two implants.*

*We were faced with the dilemma of whether to remove the previous implant in the well united distal femur fracture and put a long stem bipolar prosthesis or to keep the distal femoral nail in situ and do a hemiarthroplasty.*

*After considering the pros and cons of both the procedures, we decided to go with the latter.*

**Results:** *The patient had a good result and could do weight bearing satisfactorily.*

### OUR CASE

A 64 year old male patient was previously operated 8 years ago for a fracture of right thigh and was apparently normal following the surgery barring some right knee stiffness. He came with a history of trivial trauma (falling in the bathroom) to the right hip joint and inability to walk and inability to do activities of daily living. The patient presented in the emergency room three days after the injury. On examination there was swelling, tenderness and ecchymosis around the right hip joint. There was no associated neurovascular deficit. There were scar marks of previous surgery around the right knee. There was also a restriction of his right knee range motion. His flexion of right knee was restricted to 90<sup>0</sup>, and full extension was not possible. A Thomas Splint was applied to the patient in the emergency department, the vitals were stabilized and the patient was shifted to the special orthopaedic geriatric ward.

The patient was further investigated with X-ray of The right hip joint with the proximal half of the femur and X-ray of the right knee with the distal half of the femur both done in the antero-posterior view.



**Figure 1.** X-ray pre op showing the Neck femur fracture



**Figure 2.** Pre-op X-ray showing the previous distal femoral nail in situ



**Figure 3.** Shows that the distal femur fracture has healed sufficiently.

The X-ray suggested that the patient was previously operated for a distal femur fracture with an interlocking distal femur nail. The Xray also showed an intra-capsular fracture of the neck of femur.

After medical fitness and pre-anaesthesia check up, the patient was posted for hemiarthroplasty of the right hip joint with an Austin Moore Prosthesis.

### DISCUSSION

Fracture of the neck of the femur can be classified with Garden's classification or Pauwel's classification.

**Garden Classification** <sup>[1,2]</sup>

Type I	Incomplete, valgus impacted
Type II	Complete fracture. nondisplaced
Type III	Complete, displaced < 50%
Type IV	Complete, displaced

**Pauwels Classification** <sup>[3]</sup>

(based on vertical orientation of fracture line)

Type I	< 30 deg from horizontal
Type II	30 to 50 deg from horizontal
Type III	> 50 deg from horizontal (most unstable with highest risk of nonunion and AVN)

Such a fracture with a distal femoral fracture is quite rare and the management is quite challenging.

**“PRE-OP TEMPLATING”** -this was the biggest challenge confronting us. The Austin Moore Prosthesis normally ranges from a length of 11cm to 15cm. With the distal femoral nail in situ, the ordeal was to fit an AMP of an appropriate length so as not to give rise to a stress fracture at the junction between the two implants.

We were faced with the dilemma of whether to remove the previous implant in the well united distal femur fracture and put a long stem bipolar prosthesis or to keep the distal femoral nail in situ and do a hemiarthroplasty.

After considering the pros and cons of both the procedures, we decided to go with the latter.

**INTRA-OPERATIVE FINDINGS**

The patient was given spinal anaesthesia and was given lateral position. A curvilinear incision was taken 4 cm proximal and distal to the greater trochanter. Subcutaneous tissue and tensor fascia

lata were separated. Charnley's self retaining retractors were applied. The Gluteus Maximus was split. The external rotators of the hip joint viz. the piriformis, the gemelli and the obturators were detached from their insertions and the hip capsule was excised. The fractured head which was displaced posteriorly was removed using a cork screw head extractor.



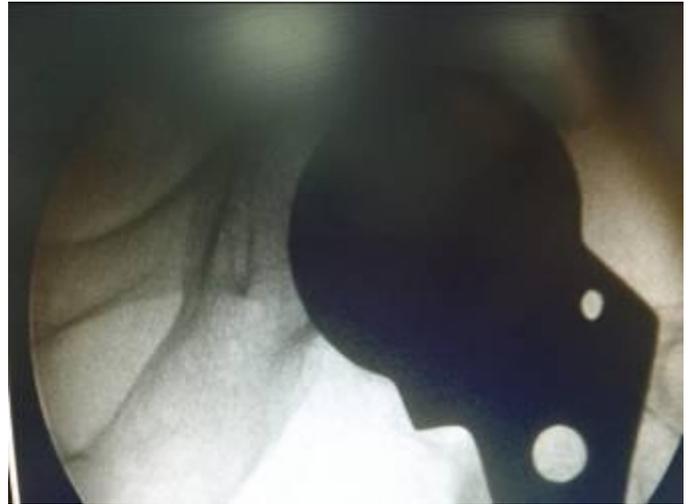
**Figure 4.** The exposure after opening up the short external rotators. Sutures are taken into the short external rotators in advance so that they can be later sutured using the Ranawat's technique.



**Figure 5.** The femoral head extracted. This was further sized



**Figure 6.** Shows another view of the extracted femoral head.



**Figure 8.** The intra-op C arm picture showing that the Austin Moore prosthesis is well placed in the acetabulum.

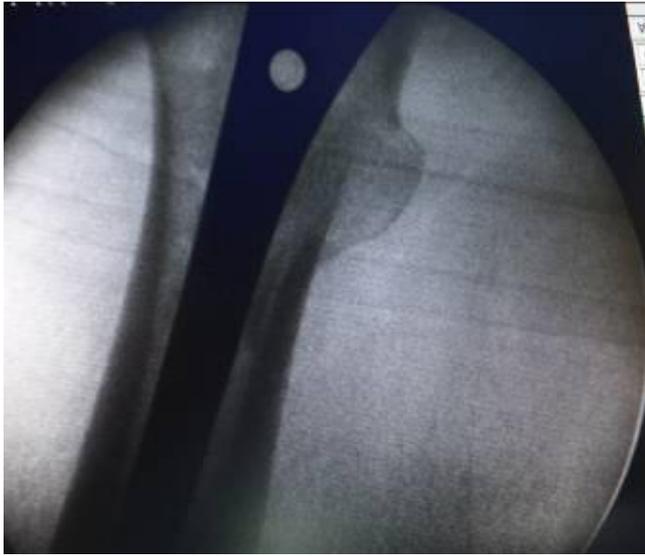


**Figure 7.** The Austin Moore's prosthesis is inserted.

The head size was measured to be 45mm. An Austin Moore Prosthesis with the head size of 45mm diameter and a length of 15cm was inserted after broaching. This was checked under the image intensifier and was found to exactly abut the distal femoral nail with no gap between the two implants, thus minimizing the chances of stress fracture between the two implants.

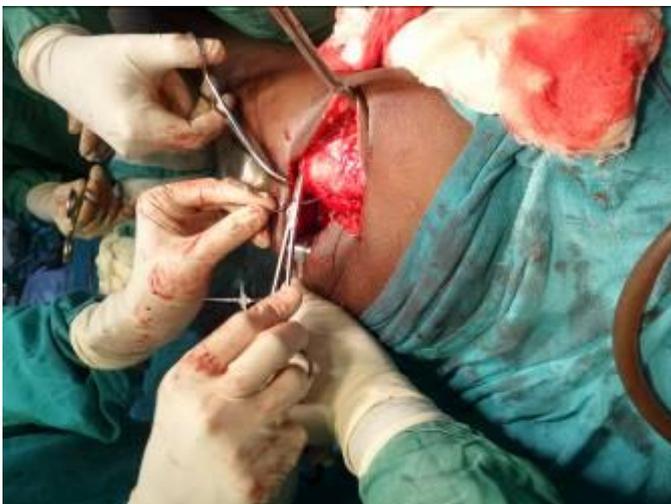


**Figure 9.** The intra-op C arm picture showing that the Austin Moore prosthesis is well placed just over the distal femoral nail.



**Figure 10.** The intra-op C arm picture showing that the Austin Moore prosthesis is well placed in the femoral canal

The capsule was meticulously sutured. The external rotator muscle group was sutured to the acetabular margin by Dr. Ranawat's technique. <sup>[4]</sup>



**Figure 11.** Suturing of the capsule by Ranawat's technique.

The gluteus maximus was sutured and so was the skin and subcutaneous tissue. A suction drain was put and the patient was immobilised in the position of 15 degrees abduction and slight external rotation using an abduction brace.

C- Arm imaging was used to check the implant

## POST OP PROTOCOL

The post op X-ray showed a well fitting Austin Moore's prosthesis with it's stem touching the tip of the distal femoral nail. 48 hrs post-op, the lab reports viz. haemoglobin, serum electrolytes were within normal limits. The drain was removed on Post op day 2. And on day 2 the patient was made to sit on the bed side.



**Figure 12.** The post op X-ray showing central placement of the Austin Moore prosthesis.



**Figure 13.** Post op X-ray showing a well fitting prosthesis on the distal femoral nail.

## FOLLOW UP

The patient was followed up at 2 weeks, 4 weeks, 2 months and 3 months intervals. The patient could do weight bearing satisfactorily.

## REFERENCES

1. Weissleder R, Wittenberg J, M.D. MG et-al. Primer of Diagnostic Imaging, Expert Consult- Online and Print. Mosby. (2011) ISBN: 0323065384.
2. Koval KJ, Zuckerman JD. Atlas of orthopaedic surgery, a multimedia reference.

Philadelphia: Lippincott Williams & Wilkins, c2004. (2003) ISBN: 0781717884.

3. Joshua Blomberg (3 July 2014). "Femoral Neck Fractures". Orthobullets. Retrieved September 2014.
4. An Extensile Posterior Exposure for Primary and Revision Hip Arthroplasty C. S. Ranawat, V. J. Rasquinha, A. S. Ranawat, K. Miyasaka; Minimally Invasive Total Joint Arthroplasty 2004, pp 39-46