



Study of Results of Ipsilateral Fracture Neck And Shaft Femur operated By Proximal Femoral Interlocking Nail

KEYWORDS

ipsilateral neck and shaft femur, proximal femoral nail, Difficult Reduction, Decreased blood loss, Delayed union.

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ABSTRACT *AIM: To study the results of proximal femoral nailing of ipsilateral neck and shaft femur fractures to study the clinical results in term of activity of daily living, radiological union and to see any complication at full follow up.*

METHODOLOGY: We have done a retrospective study of ipsilateral neck and shaft femur fracture treated with proximal femoral nail with follow up on 1, 2, 4, 6 and 12 month by clinically and radiologically.

CONCLUSION: Ipsilateral neck and shaft femur fractures are generally associated with slightly higher failure rates. The reasons for this include the greater intrinsic instability of the fractures, demanding more stabilization; more difficult fracture reduction because there are two different fractures that are to be addressed simultaneously. Proximal Femoral Nail provides conducive environment which allows early mobilization, and lessens the complications due to the bed ridden state, decrease the time in returning to work, decreased blood loss and surgical time

INTRODUCTION:

Ipsilateral fractures of the femoral neck and shaft are rare and are usually encountered in young adults as high-energy injuries. This is a combination of injuries that present diagnostic difficulties and complex treatment choices. Since reported initially, treatment of this combination of injuries is still in evolution. There are nearly 60 different recommended methods for managing these concurrent fractures yet no single method can be considered standard or, even preferable. The more obvious deformity and pain of shaft fracture often mask the neck fracture in the same extremity, making diagnosis and treatment of these fractures difficult. Moreover, in a polytrauma case, attention is directed to the more obvious, serious and life-threatening injuries. The rate of missed diagnosis of neck fracture in polytrauma cases ranges from 19% to 50% but with increasing awareness and advances in imaging, this rate is falling.

MATERIAL AND METHODS:

We have done a retrospective study of IPSILATERAL NECK AND SHAFT FEMUR FRACTURES operated with PROXIMAL FEMORAL NAILING.

MATERIAL:

- By interview
- By follow up at intervals of 1, 2, 4, 6 and 12 months
- By clinical examination
- By analyzing case papers

METHODOLOGY:

Prerequisites

- Patient fit for anesthesia
- Fracture table
- C – arm image intensifier

Instruments

- Surgical instruments
- Reamers and guide pins
- PFN –long
- Standard instrument set and jig

SURGICAL STEPS

Patient were given spinal or epidural anesthesia and shifted to a radiolucent fracture table in a supine position with perineal post. Operative leg was slightly adducted and put on traction. Opposite limb was put in a full abduction as to give space for the C-arm in between the legs. Reduction was achieved by traction and internal rotation primarily and adduction or abduction as required. Reduction was checked in a C-arm with anterior-posterior and lateral view.

Methods to achieve reduction by closed means:

If indirect reduction was not satisfactory the following methods were used

- Insertion of steinmen pin in the proximal fragment and manipulation so as to correct the deformity.
- Manipulate the proximal fragment with nail insertion.
- Maintaining relative adduction of the limb by pulling the chest and abdomen part of the patient towards the normal unaffected side by chest straps. Keeping the jig close to the body and inserting the nail in this position

RESULTS:

Proximal femoral nail, being an intramedullary device, we found that as the incision is small and duration of surgery is less, the amount of blood transfusion required is also less compared to other devices. The fracture site is not exposed compared to implants like DHS, PLATE.

In our study we found out in 3 patients who were earlier diagnosed as shaft femur fracture and when given traction on fracture table neck femur fracture was also diagnosed. So one must always be suspicious about neck femur fracture in a high velocity trauma and must rule it out. There are various studies to support this and one such study recommends the use of CT scan for this purpose.

In spite of inaccurate anatomical reduction (see on x-rays) very good functions were seen in proximal femoral nails. Distal locking was always done and patient was mostly allowed bedside knee bending on the 2nd post operative day (if not contraindicated by associated problems) and very good patient compliance was seen. Patients were normally discharged after 5th post operative day. Prolonged immobilization and non weight bearing seen in other implants causes significant joint space narrowing

We have seen 1 case of infection which was treated with antibiotics according to the culture report.

The average union time in our study was 7.7 months lower than some of the union rates of series with other implants.

There were 4 cases of delayed union in our study. Delayed unions were dealt with either dynamisation by removal of distal screws or allowing full weight bearing walking.

There were 3 non unions (15%) in our study. Non unions were seen mostly at the site of shaft femur as there was comminution or there was a distracted fracture at the end of surgery. So we insist that shaft femur fracture reduction should be done in the best possible way. Shaft non union was managed with bone graft alone or bone grafting and plating

In our study we found that there is just one complication of coxavara regarding the head because since old times more importance is given to reduction of neck femur as we get only one chance of reducing it.

Proximal Femoral Nail provides conducive environment which allows early mobilization, independence to the patient and lessens the complications due to the bed ridden state, decrease the time in returning to work, decreased blood loss and surgical time during surgery.

1.UNION

Union	No of patients	Percentage
Present	13	65
Delayed	4	20
Non Union	3	15

Table 1

The average duration of radiological union in our series was 7.7months. There were 4 delayed unions and 3 non unions out of 5 required interventions in various forms.

2.HARRIS HIP SCORE

SCORE	No of patients	Percentage
<70 = poor	1	05
70 - 79 = fair	5	25
80 - 89 = good	8	40

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Figure 1
1 YEAR FOLLOW UP



Figure 2
CLINICAL PHOTOS



Figure 3
28 YRS / MALE

INJURY : HIGH VELOCITY
 UNION : 3 MONTHS
 CROSS LEG SITTING : POSSIBLE
 SQUATTING : POSSIBLE
 SHORTENING: NO
 RESULT : GOOD
 COMPLICATION : NONE

CONCLUSION:

After the study of Results of Internal fixation of Ipsilateral neck and shaft femur fractures in adults our conclusions are as under:

1. Ipsilateral neck and shaft femur fractures in adults are mainly resulting from high velocity trauma in Young population and they are difficult to treat without internal or external fixation and are associated with few complications.
2. Of all the available modalities of fixation of Ipsilateral neck and shaft femur fractures in adults Proximal Femoral locking Nail (PFN) has given good overall results.
3. PFN is a closed nailing procedure which achieves a Biological Fracture Fixation with minimal blood loss, less duration of surgery, preserving the fracture hematoma and helping easy healing of the femoral fracture.
4. Proximal and distal bolts passed through the proximal femoral nail gives good stability in axial and rotational axis, preventing shortening and malunion postoperatively.
5. As compared to other modalities there is a low infection rate as well as few postoperative complications.
6. The procedure takes less time surgical time and the patient can be mobilized fast postoperatively as well after fixation with PFN.
7. Ipsilateral neck and shaft femur fractures in adult patients neck femur being an undisplaced fracture is missed on few occasion and has being diagnosed intraoperatively after giving traction to patient on fracture table. Hence we should get CT scan of the hip in cases of shaft femur fracture due to high velocity trauma and diagnosed these cases pre-operatively.
8. During operation one must aim at achieving anatomical reduction of the fracture of neck femur as there is only one chance of doing it and preventing complications of neck femur fracture.
9. During surgery one must not leave the shaft femur fracture distracted. A smaller diameter of nail should be used so that if there is any distraction at femoral shaft fracture then it can be reduced manually and then distal locking should be done. If we don't see any signs of union in Ipsilateral neck and shaft femur fractures at the shaft fracture we should intervene at the earliest possible by means of dynamisation or bone grafting at the 3 to 5 months period.

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