

Operative Management of Peritrochanteric Fractures



Management

KEYWORDS : Inter trochanteric fracture, Proximal femoral nailing (PFN), Dynamic hip screw (DHS).

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ABSTRACT

There are various implants designed for the management of Inter Trochanteric fractures which can be divided into intra medullary (Proximal femoral nailing) and extra medullary (Dynamic hip screw). The purpose of this article is to demonstrate that that proximal femoral nailing is a superior technique for the management of inter trochanteric fractures as compared to dynamic hip screw.

1. Introduction

Inter-trochanteric fractures are devastating injuries that most commonly affect the elderly and have a tremendous impact on both the healthcare system and society in general. These fractures most commonly occur in patients over sixty years of age. They are three to four times more common in women who are osteoporotic; trivial fall being the most common mechanism of injury.

The purpose of the present study is to demonstrate that that proximal femoral nailing is a superior technique for the management of inter trochanteric fractures as compared to dynamic hip screw.

2. Materials and Methods

MECHANISM OF INJURY

Intertrochanteric fractures usually occur as a result of a trivial fall, involving both direct and indirect forces. Direct forces act along the axis of the femur or directly over the greater trochanter to result in trochanteric fractures. Indirect forces, including the pull of iliopsoas muscle on the lesser trochanter and the abductors on the greater trochanter have also been incriminated as a cause of the fracture. Other modes of injury may be either road traffic accidents or a fall from height.

Aims and Objectives

To evaluate the outcome of inter trochanteric fractures treated by proximal femoral nailing and dynamic hip screw in terms of-

- Duration of hospital stay
- Duration of surgery
- Fracture union
- Functional outcome
- Complications

This prospective study was conducted on 30 patients having Intertrochanteric fractures who were treated operatively by either Proximal femur nailing or Dynamic hip screw.

INCLUSION CRITERIA;

- Patients with Type I, II and III Boyd and Griffin's intertrochanteric fractures
- More than 20 yrs of age
- Patients who are fit for surgery

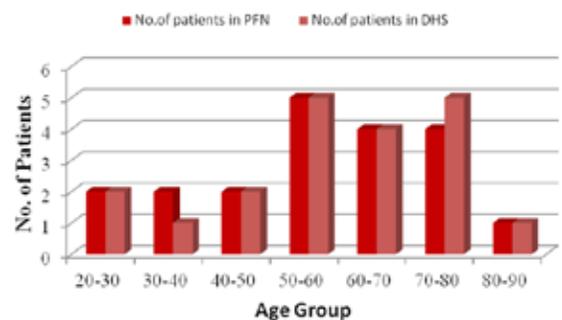
EXCLUSION CRITERIA;

- Skeletally immature individuals
- Patients with compound and pathological fractures
- Patients admitted for reoperation

3. Observation and Results

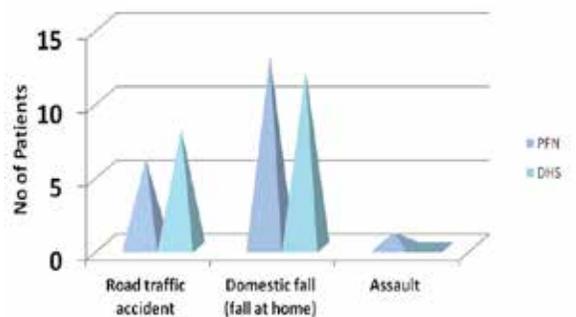
The data thus collected from patients of these two groups was analysed, evaluated, compared with each other and the observations can be summarized as follows-

1. Age: There is no significant in age distribution in two groups. Most of the cases belongs to age group between 50-60 years.



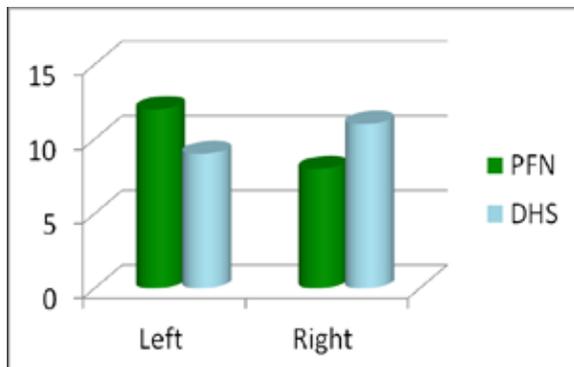
2. Sex: There was a female preponderance in our patients. A female to male ratio was about 2:1.

3. Mode of Injury: Most common mode of injury in young patients is the road traffic accident while most common mode of injury in older patients is the simple fall (Domestic fall).



4. Type of fractures: In the study, we have 30 intertrochanteric fractures with variable degree of comminution, Out of which 17 were of unstable fracture pattern.

5. Side of the fracture: Amongst the 16 cases operated by PFN, 10(60%) patients were found to have proximal femoral fractures on the left side while 6(40%) patients were having fracture on the right side. Amongst the 14 cases operated by DHS, 6(45%) patients were found to have proximal femoral fractures on the left side while 8 (55%) patients were having fracture on the right side.



6. Average length of Nail used and average size of Barrel plate: The PFN nail used of uniform length of 250mm. The average barrel plate used in DHS was 135° 4 holed plate.

7. Diameter of the nail in PFN were from 9mm to 12mm. In two cases we have used nail of diameter 9mm, In 12 cases nail of 10 mm diameter while in two case nail of 11mm diameter was used.

8. Wound complications: Superficial wound infection was seen in 3 cases in total in those operated by DHS.

9. Period of Hospitalisation: Average time for which patient was admitted in hospital was 7 days in case of PFN and 10 days in case of DHS.

10. Mobilization: We found the mobilization of patients operated by both PFN and DHS was almost same but the weight bearing of patients from the PFN group was earlier.

11. Average time of Fracture Union : Average time of union in all our 30 patients was about 16 weeks. (Range:12 to 20 weeks)

12. Mean blood loss: There is comparatively less blood loss in patients managed by proximal femoral nail as compared to patients of Dynamic Hip Screw group. The mean blood loss in PFN group was 120 milli litres of blood while as compared to the mean blood loss in DHS group it was 180 milli litres.

4. Conclusion

In the study we aimed to evaluate whether these theoretical advantages could be proved in practice, by a comparison of the results of Proximal Femoral Nail (PFN) and Dynamic Hip Screw (DHS) implants.

1. The claimed advantage with Proximal femoral nail is that a **SMALLER EXPOSURE** is required than for a sliding screw, it may therefore be associated with **lesser blood loss, shorter operating time and less morbidity**.

2. There may also be **MECHANICAL ADVANTAGES**, because the shaft fixation is nearer to the centre of rotation of the hip, giving a **shorter lever arm** and a **lower bending movement** on the device. It gives a biomechanically sound fixation.

3. In **OSTEOPOROTIC BONES** Proximal femoral nail fixation carries definitive advantage over Dynamic Hip Screw fixation devices.

4. **MALROTATION AND DEFORMITY** after trochanteric fracture fixation is usually a result of improper fixation of fracture fragments in rotation at time of surgery. In fractures managed by closed intramedullary nailing, incidence of **malrotation & deformity** is found to be **lower**.

5. In our study, we found that **Proximal femoral nails** prove to be **MORE USEFUL IN DIFFICULT FRACTURES** with a **subtrochanteric extension** or **reversed obliquity** and for high subtrochanteric fractures.

6. The **ROTATIONAL STABILITY** was higher when Proximal femoral nail is used in these fractures.

7. The incidence of **WOUND INFECTION** was found to be lower with intramedullary implants which resulted in early ambulation of the patients.

8. In our study, the **MEAN BLOOD LOSS** was comparatively **less** in patients managed by Proximal Femoral Nail fixation as compared to the Dynamic Hip Screw fixation.