EVALUATION FUNCTIONAL OUTCOME OF HELICAL FIXATION PFN A2 IN PROXIMAL FEMUR FRACTURE IN ELDERLY

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Article Info: Received 10 October 2021; Accepted 21 November 2021

DOI: <https://doi.org/10.32553/ijmbs.v5i12.2336>

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Conflict of interest: No conflict of interest.

Abstract

Background: Intertrochanteric fractures are the most frequently operated fractures and has the highest mortality and morbidity rates. Evaluation functional outcome of helical fixation pfn a2 in proximal femur fracture in elderly

Methods: Hospital based prospective randomized comparative study conducted on 30 patients with Close stable &unstable intertrochanteric femur fracture.

Results: As per HHS, we have found that 76.67% cases (23) under excellent category and 20.00% (6) good and 3.33% (1) fair of HHS.

Conclusion: We can conclude that the PROXIMAL FEMORAL NAIL ANTIROTATION2 is after proper training and technique a safe and easy implant option for treatment of complex peritrochanteric fractures.

Keywords: HHS, Femur, fracture

Introduction

Globally, proximal femoral fractures have been on the rise with the increase in life expectancy and osteoporosis in the elderly population and road traffic accidents among the younger counterparts. The total number of trochanteric fractures are predicted to reach 1.6 million by 2025 and 2.5 million by 2050.^{1,2}

Intertrochanteric fractures are the most frequently operated fractures and has the highest mortality and morbidity rates. Intertrochanteric femur fracture is one of the most important health problems amongst the elder population. Incidence of these fractures has increased primarily due to increasing life span and more sedentary life style brought by urbanization. In younger population, IT fracture occurs due to high velocity trauma, where as in elderly population, it is most often due to trivial trauma. Incidence of intertrochanteric fractures is more in females compared to males due to osteoporosis. Mortality ranges between 15-20%. The incidence of all hip fracture is approximately 80 per 100,000 person and is expected to double over the next 50 years as the population age. Intertrochanteric fracture make up 45% of all hip fracture.³

Intertrochanteric femoral fractures occur mostly in the elderly and are associated with high mortality rates. Systemic or localized complications can occur during long-term bed rest. Early rehabilitation through stable reduction and firm internal fixation can be viewed as the most

important treatment goal. Although the type of orthopaedics implant used for surgical treatment of intertrochanteric femoral fracture should be selected based on the pattern of fracture and the patient's condition, the experience and preference of the surgeon performing the procedure often play the most important role in this selection process.⁴

For long time, dynamic hip screws (DHS) were the main treatment option, but proximal femoral nails have recently gained wide popularity¹. Many researchers have reported on the outcomes of DHS and proximal femoral nails in the treatment of unstable trochanteric fractures; however, there have been few studies regarding the treatment outcomes for stable trochanteric fractures, as such fractures can be easily overlooked. The surgical treatment of stable trochanteric fractures is uncontroversial, and good results regarding fracture union and a reduced need for revision surgery can be expected with various implants. However, caution should be taken in cases involving elderly patients with osteoporosis, since postoperative reduction loss is not all that rare in such patients, even for stable fractures. In particular, most previous studies involving patients with stable trochanteric fractures have focused on evaluating different surgical methods and implants, with the primary aim to reduce the rate of fracture complication and reoperation.

Materials and Methods

Study Design: Hospital based prospective randomized comparative study

Inclusion criteria

- Close stable & unstable intertrochanteric femur fracture.
- Boyd and Griffith type I, II, III grade fracture.
- Patients consenting to study

- Age above 60 years

Exclusion Criteria

- Compound and pathological intertrochanteric fracture.
- Patients with vascular injury.
- Medically or anaesthetically unfit patients.
- Patient below 60 yrs.

Results

Table 1: Distribution of the cases according to general characteristics

Age in yrs	68.32±6.32
Male : female	18:12
Fall : RTA	21 : 9
Right side : left side	16 : 14
Stable fracture : unstable fracture	12 : 18
BOYD & GRIFFITH Classification(1:2:3)	17 : 10 : 3
Open reduction and closed reduction	0 : 30

The mean $\pm$ SD value was 68.32 $\pm$ 6.32 Yrs. As per gender wise 18 female and 12 male. As per mode of injury, we have observed that 70% (21) of the cases falls under FALL MOI category and 30% (9) of the cases in RTA MOI category. As per side, we have found that 53.3% (16) right handed and 46.7% (14) left handed category. As per type

of fracture, we have found that 40% (12) stable and 60% (18) unstable type of fracture. As per BOYD & GRIFFITH classification, we have found that 56.67% (17), 33.33% (10) found type-3 and 10% (3) type-1. As per reduction, 100 % (30) of the cases fall under closed reduction category.

Table No 2: Distribution of the cases according to HHS (24 week)

HHS (24 week)	Number	Percentage%
Excellent	23	76.67
Fair	1	3.33
Good	6	20.00
total	30	100

The above table depicts the Distribution of the cases according to HHS (24 week). As per HHS, we have found that 76.67% cases (23) under excellent category and 20.00% (6) good and 3.33% (1) fair of HHS.

Discussion

Fractures of intertrochanteric femur have been recognized as a major challenge by the Orthopaedics community, not solely for achieving fractures union, but for restoration of optimal function in the shortest possible time that to with minimal complications. The aim of management accordingly has drifted to achieving early mobilization, rapid rehabilitation and quick return of individuals to pre-morbid home and work environment as a functionally and psychologically independent unit.

In 2015, G.N. Kiran Kumar et al(2015)⁵, reviewed 45 patients of unstable intertrochanteric fractures, recommended PFN A2 for fixation of unstable

intertrochanteric fractures with less operative time and low complication rate. proper operative technique is important for achieving fracture stability and to avoid major complications.

In 2017 Srinivas Kasha et al conducted study on 78 patients in elderly population were operated with PFN A2 concluded that procedure with PFN A2 was easy to perform with minimal intraoperative and post-operative complications. Efficacy of implant is good. 2017 Y. Guo et al-2018, J Thiyageswaran et al⁶

Conclusion

Dynamic hip screw is the gold standard for treatment of stable type of intertrochanteric fractures as well as unstable types. But it is associated with many complications. We can conclude that the PROXIMAL FEMORAL NAIL ANTIROTATION2 is after proper training and technique a

safe and easy implant option for treatment of complex peritertrochanteric fractures.

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