

# Outcome Analysis of Intertrochanteric Fracture Treated with Dynamic Hip Screw in Rural Population

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## ABSTRACT

**Introduction:** Trochanteric fractures are devastating injuries that commonly affect the elderly and have a tremendous impact on the health care system and society in general. The aim of this study is to assess the functional outcome of trochanteric fractures treated with dynamic hip screw in rural population.

**Materials and Method:** Prospective study of forty patients of trochanteric fractures who underwent dynamic hip screw fixation during January 2012 to January 2015. We used Boyd and Griffin classification to classify the fractures. Functional assessment was done using Kyle's criteria. Minimum follow up was one year.

**Results:** Excellent and good results were obtained in twenty-nine cases out of total of forty cases comprising of 72.5%. Fair and poor results were obtained in eleven cases constituting 27.5%.

**Conclusion:** Operative treatment is the best modality in managing trochanteric fractures. Patients from rural background come late for surgery and their expectation levels following surgery are very high because of the need to squat for toilet purpose and sit crossed legged for sitting on the floor.

**Keywords:** Intertrochanteric fracture, Dynamic hip screw, Rural population, Kyle's criteria

## INTRODUCTION

Trochanteric fractures are devastating injuries that commonly affect the elderly and have a tremendous impact on the health care system and society in general.<sup>1</sup> About three or four decades back, trochanteric fractures were considered as a terminal event of life especially in the elderly because of prolonged immobilization leading to fatal complications like pulmonary embolism, renal impairment and bed sores. Nowadays Trochanteric fractures are adequately treated by modern surgical modalities with excellent results with hardly any residual deformity.<sup>2</sup> The aim of this study is to assess the functional outcome of trochanteric fractures treated with dynamic hip screw in rural population.

## MATERIALS AND METHOD

Prospective study of forty patients of trochanteric fractures who underwent dynamic hip screw fixation during January 2012 to January 2015. The inclusion criteria were patients

with intertrochanteric fracture above fifty years treated with dynamic hip screw with atleast one year follow up. The patients included were manual labourers, farmers and unskilled labour force. The exclusion criteria were subtrochanteric fractures and intertrochanteric fractures treated by modalities other than dynamic hip screw, skilled labourers. We used Boyd and Griffin classification to classify the fractures.<sup>3</sup> Functional assessment was done using Kyle's criteria.<sup>4</sup> Minimum follow up was one year. Two patients had Colle's fracture, 1 patients had inf. Pubic ramus fracture, 1 Patients had L1 Compression fracture with no neurological deficit as associated injuries.

Anteroposterior and lateral x-rays were taken of the affected hip. All data regarding the mode of injury and other particulars were recorded in a detailed proforma, which was exclusively prepared for the study. Associated medical co-morbidities involving cardiac, respiratory and renal systems were assessed by cardiologist, pulmonologist and nephrologist and due care was given to minimize the surgical risk. All patients underwent surgery either under regional or spinal anaesthesia. Cefuroxime 1.5 gm was the antibiotic of our choice.

Patients were nursed post-operatively in the orthopedic ward unless they needed intensive care treatment in which case they were retained in surgical ICU for 48-72 hours and then brought to the orthopedic ward. The Romovac suction drain was removed in 48 hours. Patients were mobilized nonweight bearing from second postoperative day.<sup>5</sup> Patients were given chest physiotherapy, quadriceps and hip exercises by the physiotherapist during the postoperative period. Patients were discharged on 5<sup>th</sup> postoperative day and Sutures were removed on 14<sup>th</sup> post-operative day.

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Gradual ambulation with partial weight bearing was started around 6-8 weeks when the patient could do active straight leg rising. Postoperative x-rays were taken at 6 weeks, 12 weeks, 6 months and one year and then during yearly follow up.

## RESULTS

Results as per Kyle's criteria were tabulated in table 1. In this Study of 40 patients, there were 28 males constituting 70% and 12 females constituting 30%. In this Study there were twenty cases of road traffic accidents, ten cases of trivial fall and five cases of fall from height. Complication was tabulated as per table 2.

## DISCUSSION

The operative management consists of fracture reduction and stabilization of the fractures allowing early mobilization thereby minimizing the complications of recumbences. Such early mobilization following surgical fixation is preferred by most of the authors in preference to conservative treatment, which increase the morbidity and mortality.

In our study of 40 patients, there were 28 Males comprising 70% and 12 Females comprising 30%. This is comparable to the Indian series that show a male preponderance as in Chacko et al<sup>6</sup> and Sethi et al<sup>7</sup> series. In the reported series by T.S.Sethi<sup>7</sup> the percentage of trivial fall has been as high as 77% indicating probably that elderly people comprise the majority of cases in their study. In our series only 25% of cases had sustained trochanteric fractures due to trivial fall. In our series, road traffic accidents were the main cause of injury comprising 62.5% of cases. In our study, type II fractures comprised the majority of cases with an incidence of 55% (22 cases).

In the present study, the over all excellent and good result were obtained in twenty nine cases out of total of forty cases comprising an incidence of 72.5%. Fair and poor results were obtained in eleven cases with an incidence of 27.5%. Poor results were obtained in three cases out of forty cases with an incidence of 7.5%. Results of our study are consistent with that of other authors. Babhulkar et al<sup>8</sup> has showed excellent and good results, in more than 90% of cases in a series comprising of 70 cases. Our results have been inferi-

or compared to Babhulkar Series because patients from our series have come from a rural background and have come for surgery after trying other modalities of treatment thereby delaying the definitive treatment. Results of other foreign authors as recorded in literature are far superior then our study. Sitting and squatting for toilet purposes are activities of daily living in our patients, which vitiates excellent to good results in our study. In our study of 40 cases, there were 1 case with superficial infection (2.5%) which respondent to antibiotics, there were 2 case (with implant cutout (5%) and 1 patient had coxavara deformity (2.5%). Our results were comparable to that of Chatterjee et al.<sup>9</sup>

## CONCLUSION

Road traffic accidents are also becoming a common cause of trochanteric fractures. Operative treatment is the best modality in managing trochanteric fractures. Patients from rural background come late for surgery and their expectation levels following surgery are very high because of the need to squat for toilet purpose and sit crossed legged for sitting on the floor.

## REFERENCES

1. Kaufer H. Mechanics of the treatment of hip injuries. Clin Orthop. 1980;146:53-61.
2. Fox K.M., Magaziner J., and Hebel J.R. Intertrochanteric versus femoral neck fractures: differential characteristics, treatment, and sequel. J Gerontol A Biol Sci Med Sci. 1999; 54:635-640.
3. Boyd HB, Griffin LL. Classification and treatment of trochanteric fractures. Arch Surg. 1949;58:853.
4. Kyle RF, Gustillo RB, Premer RF. Analysis of six hundred and twenty-two intertrochanteric hip fractures. J Bone Joint Surg Am 1979;61:216-21.
5. O'Malley NT, Deeb AP, Bingham KW, Kates SL. Outcome of the dynamic helical hip screw system for intertrochanteric hip fractures in the elderly patients. Geriatr Orthop Surg Rehabil. 2012;3:68-73.
6. Mohanty S.P, Chacko. Comparative analysis of operative and non operative management of trochanteric fractures. Indian Journal of Orthopaedics 1984;18:16-19.
7. Sethi T.S. et.al. Dynamic Hip Screw in Trochanteric Fractures; Indian Journal of Orthopaedics, 1993;27:161-165.
8. Babhulkar SS. Management of trochanteric Fractures. Indian J Orthop 2006; 40:210-8.
9. Chatterjee N, Bhattacharyya G, Bhattacharja T, Mondal P. Dynamic HIP Screw And Sliding Plate For Trochanteric Fractures Of Femur - Review. Indian J Orthop 2000;34:153-155.

S. No.	Result	No. of Cases	Percentages
1	Excellent	11	27.5%
2	Good	18	45 %
3	Fair	08	20 %
4	Poor	03	7.5 %
5	Total	40	100.00 %

**Table-1:** Results as per Kyle's Criteria

Complication	No.of Cases
Superficial Infections	1
Implant Cutout	2
Coxavara Deformity	1

**Table-2:** Complications

**Source of Support:** Nil; **Conflict of Interest:** None

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