

## ORIGINAL RESEARCH

**Medial Support for Unstable Intertrochanteric Fractures**J. Satyanarayana<sup>1</sup>, Ravi Kiran Nandiraju<sup>2</sup>, A. Sundeep Kund<sup>3</sup>**ABSTRACT**

**Introduction:** Unstable intertrochanteric fracture pose problems to surgeons. Medial support in unstable intertrochanteric fractures should provide the optimal answer. Seventy unstable intertrochanteric fractures were studied.

**Materials and Methods:** In 50 patients, medialisation and stable internal fixation with dynamic compression screw and plate was done. The mean interval of trauma to surgery was 21.4 days. Anatomic reduction was done in thirty case.

**Results:** The average follow-up was 2.5 years. Results were excellent in 40, good in 6, fair in 1 and poor in 3. In ten cases screw placement changed post operative; in one case there was superficial infection seen; in three cases landed osteoarthritis; in two cases union was delayed; screw cut out was found in two cases.

**Conclusion:** Medial support and internal fixation with dynamic hip screw for unstable intertrochanteric fractures provides stability. This method provides optimal restoration of anatomy and probability of fracture union.

**Keywords:** Unstable intertrochanteric fracture, Internal fixation, Medial support.

**How to cite this article:** J. Satyanarayana, Ravi Kiran Nandiraju, A. Sundeep Kund. Medial support for unstable intertrochanteric fractures. International Journal of Contemporary Medical Research 2015;2(4):947-948

<sup>1</sup>Associate Professor of Orthopaedics, <sup>2</sup>Assistant Professor of Orthopaedics, <sup>3</sup>Civil Assistant Surgeon, Osmania General Hospital Hyderabad, Telangana, India

**Corresponding author:** Dr. J. Satyanarayana, Associate Professor of orthopaedics, Osmania General Hospital, Hyderabad, Telangana, India

**Source of Support:** Nil

**Conflict of Interest:** None

**INTRODUCTION**

Unstable intertrochanteric fractures pose problems to surgeons. In these fractures comminution is the problem and stable internal fixation with resoration of anat-

omy and medial support for the proximal fragment is advised.<sup>1</sup> Restoration of the anatomy and maintainace of limb length and neutralising hip forces with valgus angle at fracture site is an important aspect.<sup>2</sup> Fracture stability but not exact anatomic reduction is believed to be the step by Hughston and fracture classification should be done on function aspect.<sup>3</sup> He opined in unstable intertrochanteric fractures there will be comminution and loss of contact between each major fragments. Supporting the fracture medially by the distal fragment and providing optimal valgus and stable internal fixation with dynamic hip screw is the crux.<sup>4</sup> Medial supporting by distal fragment and stable internal fixation with dynamic hip screw was done in fifty cases of unstable intertrochanteric fractures.

**MATERIALS AND METHODS**

In this series total of seventy unstable intertrochanteric fractures were treated surgically, of which twenty cases were excluded and remaining fifty cases in which medial support of distal fragment with dynamic hip screw fixation were included. Out of which 29 were male patients and 21 were female, the presentation was between 36 years and 76 years of age. All cases were due to road traffic accidents. Polytrauma cases were not included. Patients were adviced not to bear weight and isometric hip and knee exercises were advocated as pain tolerated. All cases were reviewed every one month and toe touch with walker support was allowed as tolerated. Only after the fracture united radiologically, patient were allowed to walk without support. Modified Shepherd index,<sup>5</sup> was used to asses the final outcome and the p value was calculated for each index.

**STATISTICAL ANALYSIS**

Results were calculated based on discriptive statitics with the help of SPSS version 19.

**RESULTS**

All cases were due to road traffic accidents. The age of patients ranged from 36 years to 76 years. In twenty eight cases the fracture was right side and in twenty two

cases the fracture was on left side. The mean interval of trauma to surgery was 21.4 days. All patients were discharged only after suture removal. Out of 50 cases, less than 2 cm shortening in affected limb was present in 34 cases and between 2-4 cm in 16 cases. The final results at 2 years follow up were excellent in 40, good in four, fair in one and poor in two patients. In this series, six cases were problematic, which constitute screw cut out of proximal femur, short screw and screw breaching the hip joint with loss of reduction which had to be treated with rest without resurgery. One case had infection and one presented with osteoarthritis at 6 months follow up. Varying degrees of loss of normal valgus was observed in all cases.

## DISCUSSION

In various series, unstable intertrochanteric fractures have been reported from 10% to 34%.<sup>1,3,6</sup> Surgery with stable fixation is the treatment of choice for unstable intertrochanteric fractures and can avoid other complications of conservative management. The stable situation for comminuted unstable fracture is contact and collapse at fracture site using the mechanics of dynamic hip screw with out damaging the hip function. Sarmiento and Williams,<sup>7</sup> described in detailed about factors affecting stability of fracture. They emphasised on good contact at fracture site with valgus angle at fracture site which aid in added mechanics at fracture site allowing collapse at leading to sound union. With medial support of distal fragment to the fracture it adds to the stability of the comminuted fracture pattern.

The dynamic hip screw should have adequate hold in the femoral head for optimal stability. Varying degrees of loss of normal valgus was observed in all cases. Coxa vara is due to unstable situation.<sup>8,9</sup> Physiotherapy and toe touch walking with walker was advocated in all cases which didnot effect on the results. In some series, non ambulation and rest were advised for gross comminution, poor bone quality and unstable fracture fixation,<sup>10</sup> Mulholland and Gunn,<sup>10</sup> showed 39% excellent results when compared with our series excellent results were seen in 74%. This shows the importance of stability at fracture site with contact and collapse occurring at fracture site which is optimally possible with dynamic hip screw and medial support for fracture.

The mechanics of the dynamic hip screw allows controlled collapse at fracture site and there by aiding in early union without complications and thus reducing morbidity. Variable factors influencing fracture union are to be considered which include comminution at

fracture, stable reconstruction, osteoporosis, hold and placement of dynamic hip screw, post operative patient compliance. In spite varying degress of loss of normal valgus with shortening in this series, medial support and stable fixation with dynamic hip screw plate construct of unstable intertrochanteric fracture good results can be achieved.

## CONCLUSION

Medial support and internal fixation with dynamic hip screw for unstable intertrochanteric fractures provides stability. This method provides optimal restoration of anatomy and probability of fracture union.

## REFERENCES

1. Evans EM. The treatment of intertrochanteric hip fractures of the femur. *J Bone Joint Surg [Br]* 1949; 31-B: 190-203.
2. Boyd HB, Anderson LD. Management of unstable trochanteric fractures. *Surg Gynecol Obstet* 1961; 112: 633-638.
3. Hughston JC. Unstable intertrochanteric fracture of the hip. *J Bone Joint Surg [Am]* 1964; 46-A: 1145.
4. Dimon JH, Hughston JC. Unstable intertrochanteric fractures of the hip. *J Bone Joint Surg [Am]* 1967; 49-A: 440-450.
5. Shepherd ME. Assessment of function after arthroplasty of hip. *J Bone Joint Surg [Br]* 1954; 36-B: 354.
6. Cram RH. The unstable Intertrochanteric fractures. *Surg Gynecol Obstet* 1955; 101: 15-19.
7. Sarmiento A, Williams EM. The unstable intertrochanteric fractures: Treatment with a valgus osteotomy and I-Beam nail plate. *J Bone Joint Surg [Am]* 1970; 52-A:1309-1318.
8. Brodetti A. The blood supply of femoral neck and head in relation to the damaging effects of nails and screws. *J Bone Joint Surg [Br]* 1960; 42-B: 794-801.
9. Harrington KD, Johnston JO. The management of comminuted unstable intertrochanteric fractures. *J Bone Joint Surg [Am]* 1973; 55-A: 1367-1376.
10. Mulholland RC, Gunn DR. Sliding screw plate fixation of intertrochanteric femoral fractures. *J Trauma* 1972; 12, 581-591.