



## Unstable Intertrochanteric Fracture in Elderly Treated with Bipolar Hemiarthroplasty: A Prospective Case Series

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### ABSTRACT

*Intertrochanteric fractures in osteoporotic bones which are grossly comminuted are highly unstable and difficult to treat. Conservative treatment with traction and prolonged immobilization lands up with many complications. Rate of failure with internal fixation, with dynamic hip screws has been found to be high, especially in osteoporotic bones. The*

*aim of this study was to assess the efficacy of cemented hemiarthroplasty in the management of proximal femoral fractures in elderly patients with severe osteoporosis*

**KEYWORDS : Intertrochanteric fracture, Hemiarthroplasty, Bipolar, Osteoporosis**

### INTRODUCTION

The management of unstable intertrochanteric fractures is challenging because of poor bone quality, osteoporosis and other underlying diseases. Failure rate of unstable intertrochanteric fractures with osteoporosis treated with osteosynthesis is seen. Therefore, prosthetic replacement has been recommended by some authors as primary treatment for unstable intertrochanteric fractures. The aim of this study is to evaluate the functional and clinical outcomes of cemented bipolar arthroplasty as a primary treatment for unstable intertrochanteric fracture in the elderly patient.

### MATERIALS AND METHODS

A series of 20 patients who underwent bipolar hemiarthroplasties for unstable intertrochanteric fractures were followed up prospectively. These patients were all above 65 years of age and they had been independently mobile before they had sustained the fractures. Exclusion criteria were patients with compound intertrochanteric fractures, polytrauma patients, patients who were < 65yrs of age and patients who were unfit for surgery. Preoperative data and post operative data was tabulated. Preoperative templating of radiographs of the fractured side and contralateral side was performed to determine the approximate size and position of the stem and the approximate femoral neck offset. The operation was performed by using Moore's approach, with the patients in the lateral decubitus position. The femoral head and neck was removed. Post-operative radiographs were obtained. The sutures were removed on day 12 and the patients were discharged. Patients were ambulated full weight bearing on the first post-operative day. They were followed up at six weeks, three months, six months and then yearly up to seven years. Clinical evaluation was done according to Harris Hip score.

### RESULTS

The following observations were made from the data collected during the study of 20 cases of intertrochanteric fractures over 7 years, 12 male and 8 female with mean age of 68.2 years treated by cemented bipolar hemiarthroplasty. The average surgery time was 120 min. Limb length discrepancy was seen in seven patients which was <1 cm. There was no case of dislocation or rotational deformities noted. There were no cases of subsidence of the prosthesis during the follow-up. Subsidence of the femoral stem was defined as a change in the distance from the superolateral edge at the shoulder of the prosthesis to the tip of the greater trochanter on the anteroposterior radiograph of the hip, and subsidence of >5 mm was classified as a subsided stem. Patients were discharged from the hospital at a mean on the twelfth day. The functional results were graded according to Harris Hip Scoring System, where in, a score of more than 90 indicates excellent result, a score between 80 and 90 indicates good results, a score between 70 and 80 indicates fair results and a score below 70 is rated as poor. In this study the mean HHS at 6 months and at 12 months was 79.2 and 85.2 respectively.

### DISCUSSION

The complexity of intertrochanteric fractures in elderly osteoporotic patients poses challenging problems, with an added risk of increased morbidity and mortality. Although the internal fixation of such fractures may reduce the morbidity of pain, it does not permit an early mobilization. Early ambulation following surgeries are important, for preventing complications. The poor mechanical properties of the weak and osteoporotic bones in elderly patients do not provide a good purchase for the screws, which subsequently lead to an early biomechanical failure. Hemiarthroplasty is a frequently employed alternative, as it gives stability and allows immediate full weight bearing. Many of the complications of internal fixations can be avoided by performing a hemiarthroplasty.

In this series, patients were ambulated full weight bearing on the first post-operative day, so there were no recumbency related complications seen. A total of 18 (90%) out of 20 patients in our study had excellent to fair outcomes. Thus, the results of this modality of treatment look promising, especially in view of the variable results of osteosynthesis in this group.

Primary hemiarthroplasty offers a modality of treatment that provides adequate stability and early mobilization in these patients, thus preventing postoperative complications. Delays in the surgeries are one of the most important predictor of mortality in patients with intertrochanteric fractures and also of the postoperative morbidity. The cornerstone of management of such fractures is early surgery, followed by mobilization.

### REFERENCES

1. Haq RU, Dhammil K. Clinical outcome following treatment of stable and unstable intertrochanteric fractures with dynamic hip screws. *Ann Acad Med Singapore*. 2012 Jun;41(6):275-76
2. Koval KJ, Zuckerman JD. Hip fractures: II. Evaluation and treatment of intertrochanteric fractures. *J Am Acad Orthop Surg*. 1994;2:150-56.
3. Green S, Moore T, Proano F. Bipolar prosthetic replacement for the management of unstable intertrochanteric hip fractures in the elderly. *Clin Orthop Relat Res*. 1987;224:169-77.
4. Sidhu AS, Singh AP, Singh AP, Singh S. Total hip replacement as primary treatment of unstable intertrochanteric fractures in elderly patients. *Int Orthop* 2010;34:789-92.
5. Haentjens P, Casteleyn PP, De Boeck H, Handelberg F, Opdecam P. Treatment of unstable intertrochanteric and subtrochanteric fractures in elderly patients. Primary bipolar arthroplasty compared with internal fixation. *J Bone Joint Surg Am* 1989;71:1214-25.