

Study on Surgical Management of Intertrochanteric Fractures of Femur with 95 Degrees Angle Blade Plate

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Abstract: Intertrochanteric fractures are seen more commonly in the elderly. They occur commonly in osteoporotic bone. They are 3-4 times more common in women than in men. Although relatively uncommon, intertrochanteric fractures also occur in the young, most commonly in men after high energy injuries. By definition, Intertrochanteric fracture includes any fracture from the extra capsular part of the neck of the femur to a point 5 cm distal to the lesser trochanter. In the earlier days, intertrochanteric fractures were treated conservatively as these fractures unite invariably. Internal fixation of trochanteric fractures is a life saving measure in the elderly. There are many options available for internal fixation of trochanteric fractures like dynamic hip screw (DHS), dynamic condylar screw (DCS), GAMMA nail, proximal femoral nail, 95 degree angle blade plate etc. Our aim in this study is to evaluate surgical and functional outcome of 95° angle blade plate in treatment of intertrochanteric fractures.

Methods: 20 patients, 13 male, 7 female. The mean age was 59 years with intertrochanteric fracture of femur were treated by open reduction and internal fixation with 95 degrees angle blade plate.

Results: Evaluation of cases using Kyle Criteria: Results were evaluated by Kyle criteria. 30% (6 patients) scored excellent results, 45% (9 patients) had good results, 15% (3 patients) had fair results and 10% (2 patients) had poor results. 2 patients had implant failure which needed re-doing.

Evaluation of cases according to anatomical outcome: 75% patients had a good result and 25% had fair result. Shortening of more than 1 cm was noted in 2 patients, varus angulation was noted in 4 patients, restriction of hip movements was noted in 5 patients and knee movement restrictions were noted in 1 patient.

Conclusion: The 95 degrees angle blade plate is a suitable option for the treatment of intertrochanteric fractures and subtrochanteric fractures.

Keywords: Intertrochanteric fracture, 95 degrees angle blade plate.

THESIS SUMMARY

Introduction

Intertrochanteric fractures are seen more commonly in the elderly. They occur commonly in osteoporotic bone. Most of them result from a simple fall from standing height. They are 3-4 times more common in women than in men. Though the energy is low, comminution of the fracture is usually seen due to osteoporosis.

Although relatively uncommon, intertrochanteric fractures also occur in the young, most commonly in men after high energy injuries.

A cadaver study has shown that the energy required to break this tough bone is very high in young adults.

By definition, Intertrochanteric fracture includes any fracture from the extra capsular part of the neck of the femur to a point 5 cm distal to the lesser trochanter.

Osteoporotic hip fracture is increasingly recognized as a growing problem in Asia as per the Asian Audit Report, 2009. It is estimated that the incidence of hip fracture will rise from 1.66 million in 1990 to

6.26 million by 2050. Also by 2050, more than 50% of all osteoporotic fractures will occur in Asia.

Among elderly patients, hip fractures are associated with an in-hospital mortality of 7-14%. In the earlier days, intertrochanteric fractures were treated conservatively as these fractures unite invariably. But this method is associated with high mortality and morbidity rates, 30% of elderly patients die within 1 year of fracture. After 1 year, patients resume their age-adjusted mortality rate.

Current guidelines recommend that surgeons perform hip fracture surgery within 72 hours of injury as observational studies suggest earlier surgery is associated with better functional outcome and lower rates of non-union, shorter hospital stays and duration of pain and lower rates of complication and mortality.

Internal fixation of trochanteric fractures is a life saving measure in the elderly. Proper precautions are to be taken during surgery to prevent complications like coxa vara deformity, shortening, limited hip movements and secondary osteoarthritic changes in the hip.

Post-fracture rehabilitation is equally necessary. Early post-operative ambulation and physiotherapy is crucial and the best approach for the patient. The overall goal is returning of patient to pre-morbid level of function.

Materials

The present study includes 20 cases of intertrochanteric fracture of femur in adult patients above 16 years of age irrespective of sex treated by open reduction and internal fixation with 95 degrees angle blade plate, in the Department of Orthopaedics at K.R Hospital, Mysore, attached to the Mysore Medical College & Research Institute, Mysore, from November 2011 to October 2013, selected on the basis of purposive sampling (Judgment sampling) method. The average age incidence was 59 years. 13 males and 7 females. Among them the minimum age was 17 years and maximum age noted was 80 years. 45% of the patients were in the age group of 61 - 70 years with the mean age of 54 years for males and 67 years for females. Predominantly males were affected. Fall from standing height was the most common mechanism of injury. Type II fractures were the most common. The average duration of hospital stay was 20.15 days. 12 patients had fracture on the right side. And 8 patients had a fracture on the left side. In our study 7 fractures were Boyd and Griffin's type II fractures, followed by 6 cases of type III, 4 cases of type I and 3 cases of type IV. . The final results were evaluated by Kyle criteria, anatomical outcome

Results

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Evaluation of cases using Kyle Criteria: In our study, 30% (6 patients) scored excellent results, 45% (9 patients) had good results, 15% (3 patients) had fair results and 10% (2 patients) had poor results. 2 patients had implant failure which needed re-doing.

Evaluation of cases according to anatomical outcome:

In our study, 75% patients had a good result and 25% had fair result. Shortening of more than 1 cm was noted in 2 patients, varus angulation was noted in 4 patients, restriction of hip movements was noted in 5 patients and knee movement restrictions were noted in 1 patient.

Conclusion

Hip fractures are the leading cause of morbidity and mortality in the elderly. Intertrochanteric fractures are a common injury, more commonly seen in elderly females and arising out of trivial fall. Patients with trochanteric fractures are bed-ridden, which leads to severe health problems and reduced quality of life which increases the burden on the care-givers.

Patients with trochanteric fractures undergoing early surgery have an improved ability to return to independent living and prevention of complications of prolonged immobilisation.

The 95 degrees angle blade plate can be used for both stable and unstable intertrochanteric fractures, but the final outcome is dependent on various factors such as the type of fracture, the condition of the medial wall, the bony architecture, and the comorbid conditions of the patient, the operative technique, implant position and post-operative care.

The position of the implant should be such that the tip of the blade should be in the lower half of the femoral head and the blade should pass below the superior cortex of the neck.

This study shows that the 95 degrees angle blade plate offers a reliable and effective alternative for the treatment of trochanteric fractures.

The 95 degrees angle blade plate is a stable and acceptable implant for the treatment of intertrochanteric fractures.

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