

Unstable Inter-Trochanteric Fracture Femur Treated By Dynamic Hip Screw in Valgus Fixation



Medical Science

KEYWORDS : unstable intertrochanteric fracture, DHS, valgus fixation.

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ABSTRACT

Background: unstable inter-trochanteric (IT) femur fractures are always difficult to treat. Dynamic hip screw (DHS) is one of the preferred methods for stable fractures. Our aim is to study the outcome of unstable IT fractures treated

by DHS fixed in valgus.

Method: retrospective study of 22 patients having unstable IT femur fractures with postero-medial comminution, Boyd and Griffin type 2 & 3, treated with 4-hole DHS plate fixed in 140-degree valgus. All patients were hospitalized for around 4-5 days, stitches removed at 10th day. Partial weight bearing allowed at 3 weeks and full weight bearing allowed at 6 weeks post-operatively.

Results: The average follow-up was 8 months. The average age of the patient was 63 years with a range of 35 to 80 years. There were 14 type 2 fractures and 8 type 3 fractures. The average surgical time was 55 minutes ranging from 30 to 90 min and average blood loss was 90 cc. The average time to union was 8 weeks ranging from 6 to 12 weeks. There were no nonunions. There was knee pain in 4 patients and one patient with superficial infection which responded to appropriate antibiotics. Two malunions with varus angulation of less than 10 degrees were seen. According to Sanders traumatic hip scoring there were 31% excellent results, 58% good results and 11% poor results.

Conclusions: Although DHS is well recommended in stable IT fractures, valgus fixation in unstable fractures gives good results without extra surgical skill or extensive pre-operative planning.

INTRODUCTION

Inter-trochanteric fractures are one of the most common fractures in the elderly age group. Unstable fractures having loss of postero-medial buttress are difficult to treat. DHS and PFN (proximal femur nail) are most widely implanted choices for IT fractures. PFN is preferred for unstable fractures and DHS is preferred for stable fractures as it may lead to excessive medial translation of the femur shaft if used in unstable fractures. Although PFN requires less time and has less intra-operative bleeding, PFN has some disadvantages over DHS that it comes in a fixed angle, allows controlled collapse and there is a chance of knee pain as its tip abuts the anterior femur cortex. When DHS is used in unstable fractures fixed in valgus, the plane of the fracture becomes more horizontal, it helps shear force get converted into compressive force. Our aim of study is to analyze the outcome of DHS fixed in valgus angle in unstable IT fractures.

MATERIAL AND METHOD

We included 22 patients of unstable IT fractures that have been treated with DHS in valgus fixation, in a retrospective study. Patients came to C U Shah Medical College, Surendranagar, admitted in ward on the same day with primary treatment of analgesics and applied skin traction. Physical fitness was done. When found to be unstable physically like hypertension, diabetes etc. patients were made stable first. In the operation room, patients were given spinal anaesthesia. On the traction table, first reduction was checked under image intensifier guidance. Routine lateral approach was taken. After guide pin insertion, first R (Richard) nail was inserted in about 135 degrees. Just below the R nail entry point, the lateral cortex was breached using an osteotome to facilitate valgus fixation which acts as incomplete osteotomy. Then a side plate was introduced, the limb was abducted in traction position to bring it near the plate. The side plate was secured to the femur shaft using 4.5mm cortical screws. A 6.5mm cancellous derotation screw was additionally inserted when felt necessary. Closure was done in routine manner. Drainage tube was not used in any cases. Patients were discharged after 2nd dressing. Stitches were removed after 10th day. Meanwhile physiotherapy was started to strengthen the quadriceps. Partial weight bearing was allowed after 3rd week. Full weight bearing was allowed after 6th week after clinical and radiological signs of union. Radiographically evaluation was done for union, collapse and any implant-related complications. Sanders (32) traumatic hip rating score was used to evaluate the functional results. It emphasizes on pain, walking capacity, functional restriction, muscle and motion power, performance of daily activities and radiographic evaluation.



RESULTS

The average follow-up duration was 8 months ranging from 3 to 18 months. One death occurred and one was lost to follow-up. The average age of the patient was 63 years with a range of 35 to 80 years. There were 64% males and 36% female patients. Majority of the fractures occurred due to road traffic accidents account-

ing for 75%.there were 14 type 2 fractures and 8 type 3 fractures. The average surgical time was 55 minutes ranging from 30 to 90 min and average blood loss was 90 cc, The average time to union was 8 weeks ranging from 6 to 12 weeks. There were no nonunion. We had our share of complications which included knee pain in 4 patients, shortening of less than or equal to 2 cm in 4 patients and one patient with superficial infection which responded to appropriate antibiotics. Two malunion with varus angulation of less than 10 degrees was seen. According to Sanders traumatic hip scoring there were 31 % excellent results, 58% good results and 11% poor results. One death occurred due to comorbid conditions

CONCLUSION

Intertrochanteric femur fracture can be treated by various surgical modalities, PFN and DHS are among most preferred implant choice. As DHS is one of the oldest and easy to use implant which gives variable angle fixation options, it is used in most of IT fractures at our institute. Although it is preferred for stable IT fractures when lateral wall and postero medial buttress is intact, it can be used in unstable IT fractures also when used in valgus mode. Valgus fixation makes fracture line more horizontal which helps getting shearing force converted into compression force thus enhancing chances of union.

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