



ROLE OF DHS WITH TSP IN UNSTABLE TROCHANTERIC FRACTURE

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ABSTRACT DHS is a sliding compressive device which have been used in trochanteric fracture very frequently, though this implant has few limitations like screw cut out and uncontrollable collapse, specially seen in unstable type of trochanteric fracture. These are due to lateral wall comminution and single point entry. We operated upon 10 cases of unstable trochanteric fracture in which we used DHS with fixed trochanteric stabilising plate and used multiple screw through the plate for anti-rotation. All fracture was united on an average of 7 weeks. No case of implant failure was seen.

KEYWORDS : trochanteric fracture, dhs , tsp.

INTRODUCTION:

Intertrochanteric fracture is still a challenging situation, despite many implants are present to fix this. Generally, PFN and DHS are used depending on the fracture pattern. But in case of unstable trochanteric fracture the confusion still present. DHS is a sliding screw device used to have controlled impaction but in case of unstable fracture medial displacement of the shaft results in excessive sliding of screw in barrel and have higher incidence of screw cut out. TSP with DHS played an important role because of its buttress effect to stabilise lateral wall.

PATIENTS AND METHOD:

This is a prospective study having 10 patients, of all ages and both gender having unstable trochanteric fracture. We have excluded open fracture, subtrochanteric fracture, and medically unfit patients for surgery. All patients were properly examined and assessed both clinically and radiologically. Harris hip scoring system and RUSH score were used to assess the outcome. All fracture was classified according to AO, and in case 31-A2 and 31-A3 type of fracture was selected. Closed reduction was done in 7 of cases and in 3 cases open reduction was done to achieve anatomical reduction. we used DHS with trochanteric stabilising plate and multiple screw were given through the TSP to head of femur to provide stability and anti-rotation.

An extra static screw was also added below the barrel to check the uncontrolled collapse. Post-operative period was uneventful. All patients were allowed non-weight bearing ambulation, along with bed side physiotherapy. Full weight bearing was allowed after visible callus formation in radiograph. The follow up period was of 6 months to observe all possible complication.



Figure 1 DHS with TSP



Figure 3 preoperative radiograph



Figure 2: static screw checking uncontrolled collapse

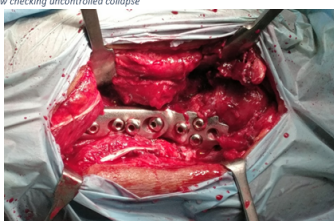


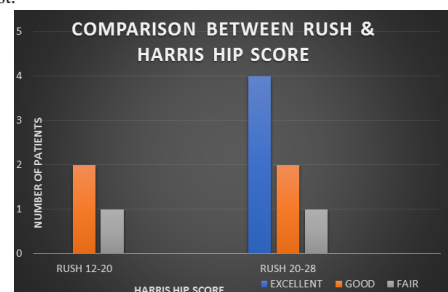
Figure 4 intraoperative image



Figure 5 postoperative radiograph

RESULTS:

Amongst of 10 patients 6 were male and 4 were female having mean age of 57.5 years. 7 of the patients belonged to AO 31-A2 and 3 of AO-A3. 7 of them due to simple fall and 3 were due to RTA. Closed reduction was done in 7 of cases while in 3 cases open reduction were done to achieve anatomical reduction. Mean operative time was 48 min excluding the preparation time. In all patients DHS with fixed TSP plate was used along with static screw. Drain was given in every case and wound was closed in layers. Drain was removed in 3-4 days depending upon the clot formation in drain tube. Average drain collection was 128 ml. 3 patient received 1 unit of PRBC after operation. 2 patients were having serous oozing from the wound, C/S was negative in both cases and was subsided with regular dressing. Average time of hospital stay was 17.2 days. All patients were discharged after stitch off. Physiotherapy exercises like static quadriceps drill, pelvic lifting, ankle ROM, and chest physiotherapy were started from day of admission. Bed side knee bending was allowed after removal of drain in postoperative period. Non-weight bearing axillary crutch walking was given till the radiological feature of callus formation in follow-up. Partial weight bearing was given for 2 weeks, after that full weight bearing allowed. Follow-up visit is were kept at 1,3,6,9,12 month from the day of operation. Chief complaint in follow-up was of mild to moderate pain in trochanteric area. All patients were evaluated functionally by Harris hip score and radiologically by RUSH score at 6 months. 4 out of 10 patient had excellent results as per Harris hip score 4 patient had good results and 2 had fair results. Mean RUSH score was 22.12. Association of Rush and Harris hip score was analysed by chi-square test.



DISCUSSION :

Both intramedullary and extramedullary devices have been used for management of unstable intertrochanteric fracture till date. Augmentation of TSP to DHS added a superiority to intramedullary devices and provides an extra edge in dealing with this kind of fracture. The basic advantages are proper exposure of fracture site, steep learning curve, buttress support to trochanter adds stability and prevent rotation of head, prevent the uncontrolled collapse and also resists femoral medialization.

Chiavras et al., developed RUSH scoring system for grading of radiographic union of hip fracture¹. All the patients in our study were having score 12-28. Majority of patients were having a score of 20-28 which indicate high union rate. Functional outcome was measured by HARRIS HIP SCORE and majority of patients were noted to have excellent to good results.

Hsu et al., in their series showed the reduced rate of operation by adding TSP in the fixation of unstable trochanteric fracture with posterolateral wall fracture².

Babst et al in their study showed that TSP with DHS added additional stability with prevention of rotation of head neck fragment.³ They also concluded that additional buttressing effect prevents lateralization of the greater trochanter.

A biochemical study by Bong and colleagues reported that use of TSP had ability to prevent femoral medialization comparable to intramedullary devices⁴

CONCLUSION :

DHS with TSP is an effective technique and has excellent functional and radiological outcome with minimal complication in the management of unstable trochanteric fracture.

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