

Evaluation of Functional Outcome of Failed or Neglected Intracapsular Neck Femur Fractures Treated with Valgus Intertrochanteric Osteotomy Using a Double-Angle Blade Plate

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Purpose: Failed surgery of intracapsular neck femur fracture or a neglected presentation in young adults presents a unique dilemma to trauma surgeons. Every effort points toward preserving the head but the modalities available are difficult and results not standard. We evaluated the role of valgus intertrochanteric osteotomy with a 120° double-angle blade plate in such cases and in cases with delayed presentation in young adults.

Methods: Data of all patients between the ages of 16 and 50 years with intracapsular neck femur fractures managed from June 2015 to June 2018 were retrospectively reviewed. All cases with revision surgery for neck femur fractures or delayed cases presenting after more than 3 weeks of injury and managed with 120° double-angle blade plates were included. We treated 21 cases with valgus intertrochanteric osteotomy over the period with an average follow-up of 19 months (range, 6-42 months). The mean age of patients was 29.6 years. There were 4 cases with ipsilateral neck femur and shaft femur, 4 cases of neglected fractures, 5 cases of failure with DHS (dynamic hip screw), and the rest of the cases were managed initially with 3 partially threaded cancellous screws. All patients were managed with 120° double-angle blade plates after removing an intertrochanteric wedge based on the varus angle and ensuring that valgus angle did not increase more than 140°. All cases were evaluated radiologically and clinically and their functional outcome evaluated.

Results: In all 21 cases the fracture went on to satisfactory union after an average of 13.5 weeks (range, 10-20.5 weeks). The average Harris hip score increased from 63.2 points (range, 51-73 points) before surgery to 90 points (range, 79-97 points). All the patients with united fractures were able to sit cross-legged, squat, and do one-legged stance. Pain and limitation of motion improved remarkably. One patient had united fracture of the neck femur but developed avascular necrosis with collapse of femoral head after a period of 18 months.

Conclusion: Valgus intertrochanteric osteotomy is an effective procedure to achieve union in neglected and ununited neck femur fractures in young patients. Double-angle blade plate, because of its morphology, offers the advantage of usage even in cases where previously DHS has been used and the procedure has failed. A mild flexion deformity can also be corrected easily with the help of angle blade plate. In order to avoid medial joint pain of the knee joint, the blade plate was kept 5 mm beyond the lateral border of the trochanter, which helped to lateralize the shaft to its original axis. Double-angle blade plates provide a useful method to salvage young patients with failed neck femur or neglected fractures with very few complications.