

Original Article

Outcome of Trochanteric femoral nailing in Intertrochanteric Fracture Femur — A Prospective study

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Trochanteric femoral nail is recently used as intramedullary device for treatment of intertrochanteric fractures. Trochanteric Femoral Nail (TFN) is very useful in osteoporotic, severely comminuted intertrochanteric fractures. Twenty two patients with intertrochanteric fractures were treated at College of Medicine and Sagore Dutta Hospital, Kamarhati for 2 Years. Patients were operated according to standard protocol. Postoperatively patients were evaluated with Harris Hip Score for functional outcome. Harris Hip Score at the end of 6 months was excellent in 50%, good in 25%, fair in 20% and poor in 5%. Complications are minimal with TFN. Intertrochanteric fractures treated with closed TFN had excellent outcome in most of the patients with early weight bearing and very good healing of fractures.

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Key words : Intertrochanteric fractures, Trochanteric Femoral Nail, Outcome.

Intertrochanteric fractures of the femur are one of the most common fractures of the hip. There is rising incidence of intertrochanteric fractures because of increasing number of senior citizens with osteoporosis and increasing number of RTA (Road traffic accident). In early days, these trochanteric fractures were treated with sliding hip screw system (DHS or SHS). Intramedullary fixation devices have become increasingly popular now a days because of high rates of failures¹⁻³ with sliding hip screws in unstable trochanteric fractures. Trochanteric femoral nailing (TFN) was introduced for improvement of the rotational stability of the proximal femoral fracture fragments. TFN is combination of features of intramedullary femoral nail with sliding load bearing bolts for fixation at femoral neck and head. It has got advantages of minimally invasive surgery with early weight bearing^{4,5} and less complications¹¹.

Materials and methods: Study was done at College of Medicine and Sagore Dutta Hospital, Kamarhati, Kolkata from March 2017 to March 2019. Twenty two (22) patients with unstable trochanteric fractures (Fig 1) between the age group 45-75 years were included in the study. They were treated with closed Trochanteric femoral nailing after preanaesthetic fitness. Multiple fractures and pathological



Fig 1 — Showing patients with unstable trochanteric fractures

fractures were excluded from the study.

TFN was of 180 mm in length with diameter of 9 mm, 10 mm or 11 mm and was introduced with or without reaming of the medullary cavity by closed method on fracture table. Proximal diameter of the nail is around 15 mm. Nail screw angle used were 130° or 135° with derotation screw of 6 mm and compression screw of 8 mm. Entry point of nail was at the tip or about 2 mm lateral to the tip of the greater trochanter in AP view and at the centre on lateral view of the image intensifier. In severely comminuted fractures insertion was done through fracture site. Post operative x-rays (Fig 2) were taken to see the reduction, alignment and compression at fracture site. Stitches were removed usually on 14th postoperative day. Follow ups were done after 1 month, 3 months and 6 months. Patients were mobilized on 3rd day and partial weight bearing with crutch support

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Fig 2 — Showing Postoperative x-rays

was allowed after about 4-6 weeks. All patients were evaluated with Harris Hip Score for outcome.

Results: Male patients were more affected (65%) than females. Average age of the patient was about 67 years. Average time of surgery was about 50 mins. The peroperative blood loss was around 100ml on an average. Postoperative and follow up x-rays were done for evaluation of reduction, alignment and signs of union. One patient had got early complication of superficial wound infection but the wound was healed with dressing and antibiotics. One patient had backout of compression screw on 1 month follow up, most probably due to early weight bearing by the patient. Almost all patients were pain free at 3 months follow up. All patients were evaluate with Harris Hip Score and at the end of 6 months Hip score was excellent in 60%, good in 20%, fair in 15% and poor in 5% cases.

DISCUSSION

Trochanteric femoral nailing is a very safe and effective procedure in unstable trochanteric fractures but is technically demanding and technology dependent. Good quality image intensifier and good quality instruments are must for this operation to be of good quality. But TFN could not be used in trochanteric fractures, where the fracture line extends below the lesser trochanter. Accurate entry point, anatomical reduction and correct proximal reaming path is necessary for the operation to be successful one. Few studies in small patient groups had shown good functional outcome with very few complications with proximal femoral nailing⁶⁻⁸. Advantage of TFN is that, it's a closed procedure with minimal blood loss and fewer complications. In our study there is less operative time, less peroperative blood loss. There was no cut out effects of the proximal bolts in our cases. To avoid cut out effects proper positioning of the proximal screws in the femoral neck and head is must⁹⁻¹⁰. Lateral protrusion of the proximal screws are very much relevant due to

impaction and collapse at fracture site. In our study one patient had backout or lateral protrusion of compression screw. Impaction of the fracture site is beneficial for better consolidation of the fracture and early rate of union. Mortality rates and general complications did not reveal any surprising results and is consistent with other studies^{8,11}.

Our study shows that the newly developed Trochanteric Femoral Nailing is a very good procedure with good functional outcome, minimal pitfalls and comparable complications. Optimal reduction of the fracture, proper proximal reaming and proper positioning of the nail and proximal screws are very much crucial for a successful procedure and minimal surgical failures.

So, it is concluded that, unstable intertrochanteric fractures treated with closed TFN had excellent functional outcome in most of the patients with early weight bearing, very good healing of fractures minimal complications.

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