

Comparison of DHS/TFN in Stable Intertrochanteric Fractures

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Abstract

Surgical management of intertrochanteric fractures is the preferred treatment to avoid complications of prolonged immobilization. Dynamic Hip Screw (DHS) has been the gold standard. Intramedullary devices have biomechanical advantage as they are near to the mechanical axis of hip joint. Seventy one patients with stable intertrochanteric fractures between December 2011 to January 2014 at SNMC, Bagalkot were treated with either DHS or Trochanteric Femoral Nail (TFN), 41 with DHS and 30 with TFN. Results were compared for average duration of surgery, blood loss, hospital stay and functional outcome according to Harris Hip score. There was no significant difference in functional outcome between the two modalities of treatment. However the duration of surgery, blood loss and hospital stay was significantly lower in TFN group. Our study indicates that TFN may be better choice when compared to DHS in stable intertrochanteric fractures.

Keywords: DHS; TFN; Harris Hip Score.

Introduction

With the rising life expectancy through the globe, Intertrochanteric fractures, which are essentially osteoporotic fractures are on the rise. It is estimated that the incidence of hip fractures will rise from 1.66 million in 1990 to 6.26 million by 2050 [1]. The treatment of intertrochanteric fractures have passed through several stages. Initially these fractures were treated conservatively by means of external splintage, skin traction, skeletal traction and Russel traction [2]. To prevent complications of immobilization surgical treatment was advocated [3]. Several internal fixator devices were used like Jewett blade plate, Mclaughlins plate and Dynamic hip screws [4]. DHS in last two decades has been considered a gold standard. But with the introduction of cephalomedullary nails, there is debate on to which is the ideal treatment. Cephalomedullary nails offer

biomechanical advantage, being nearer to mechanical axis of hip joint and being load sharing devices. In this study 71 patients with stable intertrochanteric fractures were treated with either DHS or TFN. The advantages of surgical technique and functional outcome in terms of Harris hip score were compared.

Materials and Methods

71 patients with stable intertrochanteric fractures treated at SNMC Bagalkot from December 2011 to January 2014 were included in the study. Regular follow up was done in outpatient department for a period of 1 year (2 weeks, 6 weeks, 12 weeks, 24 weeks and 52 weeks).

Inclusion Criteria

Cases of intertrochanteric fractures Boyd and

Griffin type 1 and type 2.

Exclusion Criteria

Cases of intertrochanteric fractures Boyd and Griffin type 3 and 4.

Patients not fit for anaesthesia.

Statistical Methods Applied

Descriptive statistics like mean, percentage, and SD were used.

Chi-square test for significance of proportions.

Results

Total of 71 patients were included in the study in

which 41 patients underwent surgery with DHS and 30 patients underwent surgery with TFN. Both the groups were compared for average duration of surgery, blood loss, hospital stay and functional outcome according to Harris Hip score. Average duration of surgery was 54 minutes (ranging from 40 to 71 minutes) for TFN group and 76 minutes (ranging from 61 to 96 minutes) for DHS group. Average blood loss for TFN group was 146ml (ranging from 120 to 180 ml) and for DHS group it was 320 ml (ranging from 260 to 430 ml).

Average hospital stay was 9 days for TFN group (ranging from 5 to 12 days) and 13 days (ranging from 8 days to 19 days) for DHS group. According to Harris Hip score TFN group had 80% excellent to good results at 1 year follow up and DHS group had 70.8% excellent to good results at 1 year follow up.

Table 1: HHS at 1 year follow up for TFN group

	Number of Patients	Percentage
Excellent	14	46.7%
Good	10	33.3%
Fair	06	20.00%
Total	30	100%

Table 2: HHS at 1 year follow up for DHS group

	Number of Patients	Percentage
Excellent	18	44%
Good	11	26.8%
Fair	12	29.2%
Total	41	100%

Harris Hip score at 1 year follow up

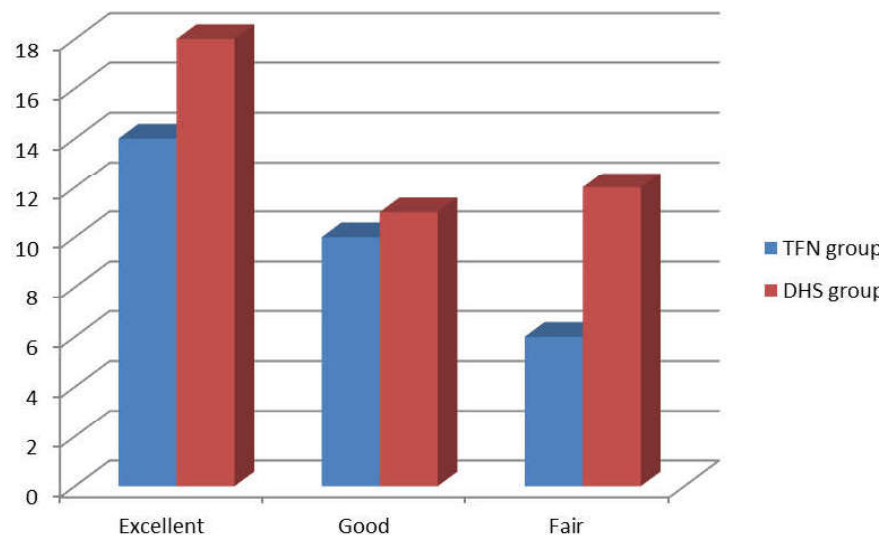


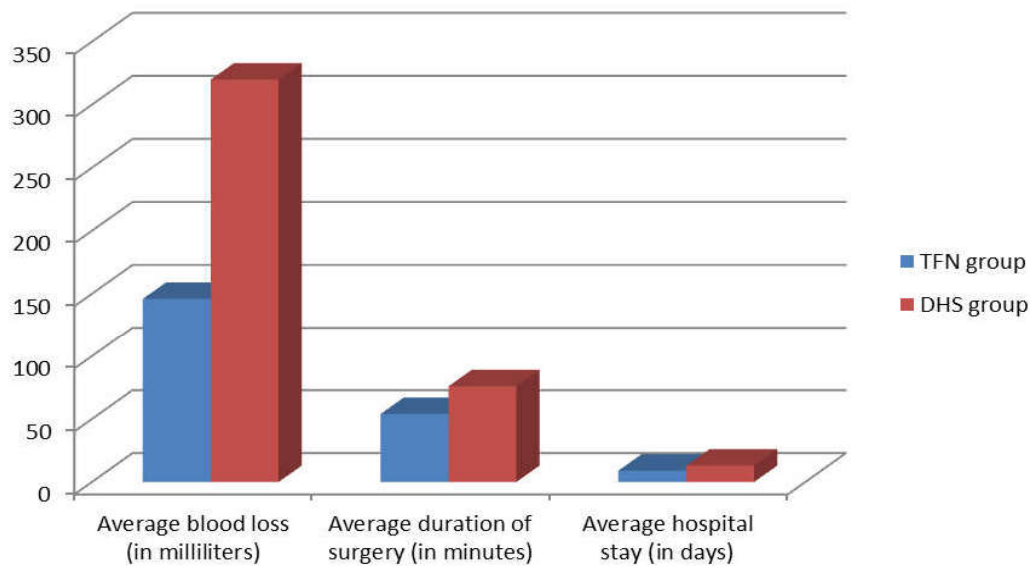
Fig. 1: Harris HIP Score at 1 Year

Table 3: TFN group

Variable	Number of Patients	Mean	Standard Deviation
Average blood loss (in milliliters)	30	146	24.6
Average duration of surgery (in minutes)	30	54	12.3
Average hospital stay (in days)	30	09	6.7

Table 4: DHS Group

Variable	No of Patients	Mean	Standard Deviation
Average blood loss (in milliliters)	41	320	20.3
Average duration of surgery (in minutes)	41	76	13.4
Average hospital stay (in days)	41	13	3.6

**Fig. 2:** Comparison between two groups

Discussion

In the study conducted by Pan et al [5] and Shen et al⁶ showed significantly lower blood loss and operative time in TFN group as compared to DHS group. This is consistent with our study.

There was no significant difference in functional outcome between the two modalities of treatment. These results are supported by studies by Pajarinen et al [7], Saudan M et al [8] and Kafer M et al [9]. Though DHS has been the gold standard for treating Intertrochanteric fractures, TFN inserted by means of a minimally invasive procedure allows surgeons to minimize soft tissue dissection, thereby reducing surgical trauma and blood loss, it also has mechanical advantage of being nearer to weight bearing axis.

Conclusion

Our study indicates that TFN may be a better choice than DHS in stable intertrochanteric fractures. However Studies with larger sample size may be required to give conclusive evidence.

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