

A Novel Technique for Planning MIS Surgical Fixation of Hip Fractures

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INTRODUCTION:

The gold standard for intertrochanteric fracture fixation is the dynamic hip screw (DHS). Minimally invasive DHS (MIDHS) surpasses conventional DHS (CDHS) with shorter surgery and quicker recovery.¹ Our novel MIDHS technique offers a precise guidewire trajectory on all 3 planes, enhancing surgical preparation.

MATERIALS & METHODS:

A retrospective case-controlled study was performed. 15 patients who underwent surgical fixation with 4-hole DHS from 2019 to 2023 were evaluated. Fractures were categorised using Kyle's classification. Cases were performed by different surgeons with similar levels of experience. Outcome measurements included tip-apex distance (TAD), surgery duration, haemoglobin loss, and hospital stay duration. TAD was measured by two independent assessors using the postoperative anteroposterior and lateral radiographs.

RESULTS:

Baseline characteristics were similar between both groups except for fracture types. The MIDHS group had more complex fractures (40% MIDHS Kyle III/IV vs 10% CDHS Kyle III/IV) ($p = 0.04$). Mean surgical time was significantly shorter (43.8 ± 12.3 minutes) compared to the CDHS group (73.4 ± 18.2 minutes). No significant difference was observed in hospital stay duration, haemoglobin loss, or TAD.

CONCLUSION:

Despite having more complex fractures, MIDHS group had shorter mean surgical time than CDHS group, with no significant difference in

TAD, haemoglobin loss and hospital stay duration. A larger cohort of patients may result in more statistically significant outcome comparisons.

Table 1: Pre-operative data

Variable	MIDHS (95% CI), n = 5	CDHS (95% CI), n = 10	p- Value
Kyle's classification, n			
I	0	6	
II	3	3	
III	1	1	
IV	1	0	0.04

Table 2: Post-operative data

Variable	MIDHS (95% CI), n = 5	CDHS (95% CI), n = 10	p- Value
Duration of surgery (min), M ± S.D. (R)	43.8 ± 12.26 , 95% CI [33.0, 54.6]	73.4 ± 18.2 , 95% CI [62.1, 84.7]	0.019*

REFERENCES:

1. Lee YS, et al. Dynamic hip screw in the treatment of intertrochanteric fractures: a comparison of two fixation methods. Int Orthop.2007;31(5):683-688. doi:10.1007/s00264-006-0248-y