OUTCOME OF OPEN VERSUS CLOSED REDUCTION IN INTERLOCKING NAIL FEMUR AMONG A HOSPITAL COHORT IN SOUTHERN MALAYSIA

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INTRODUCTION:

The closed reduction method was proposed throughout the decade as a preferred method. Still, due to lack of infrastructure, patient factors, complications in surgery, and timing of surgery, few centers adopted the open method as reduction method. The purpose of our study is to compare the outcome between the open method and the closed method of interlocking femur shaft with relation to factors attributing to the reduction method.

METHODS:

This is a retrospective cohort study conducted between January 2017 to December 2020 using patient medical records by universal sampling. Total of 205 patients' data analyzed using SPSS v25 statistics software. Demographic analysis was conducted via descriptive analysis. Chi-square and simple linear analysis used for univariate while multiple linear and logistic regression used in multivariate analysis.

RESULTS:

This study shows significant association between duration taken to surgery and method of reduction. Based on the table shown, we found that three outcomes (estimated blood loss [EBL], length of surgery [LoS] and hospital stay) are positively associated with open reduction. Upon controlling the patient and surgical factors, results show that EBL and LoS positively associated with open reduction.

	Crude Values			Adjusted Values*			Adjusted Values**		
	ref: Closed reduction								
	ß	p	95% CI	ß	p	95% CI	ß	p	95% CI
EBL	417.2	<0.001	245.36, 589.09	310.6	0.001	130.76, 490.5	208.5	0.02	33.57, 383.56
Surgery Length	0.626	<0.001	0.312, 0.94	0.578	0.001	0.241, 0.914	0.386	0.021	0.059, 0.713
Hospital Stay	4.483	0.014	0.931, 8.035	3.259	0.091	-0.52, 7.039			
Total Cost	-14.478	0.924	-312.66, 283.7						
	or								
Infection	1.204	0.747	0.39, 3.715						
Bone Union	1.346	0.489	0.58, 3.125						

*adjusted for patient factor
**adjusted for patient factor and other complication

Table 1: Multiple regression output comparing all the significant data

DISCUSSIONS:

The study exhibits that closed nailing results in lesser blood loss and quicker surgical time compares to open nailing. The concern regarding a higher infection rate or non-union with an open reduction due to a larger wound and increased blood loss has also not been seen in our study thus far.

CONCLUSION:

Our study concludes that longer awaiting time for surgery is significantly associated with open reduction, Furthermore, open reduction results in higher blood loss intraoperatively and longer surgery time.

REFERENCES:

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