

Factors Influencing Functional Outcome Of Philos Plate Fixation For Proximal Humerus Fractures

¹Hazwan AW, ²Khairul NS, ¹Ahmad Zakiran A

¹Department of Orthopaedic & Traumatology, Hospital Tengku Ampuan Afzan, 25100, Kuantan, Pahang.

²Department of Orthopaedic & Traumatology, Kulliyah of Medicine, International Islamic University of Malaysia, Kuantan, Pahang

INTRODUCTION:

Displaced and unstable proximal humerus fractures are difficult to treat and they have high morbidity especially in elderly. The main goal is to achieve painless shoulder with full recovery in terms of range of movements of the shoulder joint [1]. It is a common occurrence, which accounts for 4 to 5% of all fractures incidence [2]. Impingement syndrome is one of the commonest postoperative complication is thought to be due to improper positioning of the plate [3]. This study aim is to appreciate the functional outcomes of Philos plate fixation for proximal humerus fractures and to establish association with high plate positioning with impingement syndrome of the shoulder after Philos plate fixation for proximal humerus fractures

METHODS:

This is a retrospective study, reviewing 26 patients who had proximal humeral fractures and underwent open reduction and Philos plate fixation between December 2010 and January 2015 in Hospital Tengku Ampuan Afzan, Kuantan, Pahang. Preoperative X-rays or CT scans were inspected, follow-up visits and X-ray images were obtained at every follow up consultation to evaluate the plate position and bone union. A distance of 18 mm or less between the upper edge of the plate and the tuberosity was classified as a high plate position. Assessments of impingement syndrome and other complications were done and also functional outcome measured with Constant shoulder scoring system during final follow-up [4].

RESULTS:

From 26 patients, 19 were male and 7 were female, mean age was 51.96 (21-78 years old), majority were Malays. All cases achieved union. None of the cases developed complication like malunion, infection, AVN, and loosening of implant while 2 cases complicated with shoulder impingement post operatively.

Table 1 : Factors and the Constant score

Factors	Constant score				Mean	P value
	Patient (n=26)	Moderate (56-70)	Good (71-85)	Excellence (86-100)		
Age						
<60 years	18	4	6	0	80.74	0.036
>60 years	8	4	4	8	70.25	
Gender						
Male	19	5	9	5	77.95	0.982
Female	7	3	1	3	76.43	
Race						
Malay	19	5	7	7	78.32	0.124
Chinese	5	3	2	0	71.00	
Indian	2	0	1	1	86.50	
Fracture Type						
3 parts fracture	18	4	7	7	79.89	0.098
4 parts fracture	8	4	3	1	72.25	
High Plate Position						
Yes	6	4	2	0	68.33	0.043
No	20	4	8	8	80.30	

DISCUSSIONS:

Among all the factors, age more than 60 years, and high plate position found to be a significant factor in the outcome of the surgery. Neer 3 parts fractures have higher mean of Constant score compare to Neer 4 parts fractures. We also observed that high plate position is significantly associated with impingement syndrome postoperatively with a p value of 0.007.

CONCLUSION:

This study showed that age, fracture type and plate position were key factors affecting shoulder function after philos locking plate fixation surgery. We recommend that plate should be position at most 19mm from the greater tubercle to prevent impingement syndrome postoperatively and for better functional outcome.

REFERENCES:

1. C. H. Venkateswarlu, M. Vinod Kumar, B. Mrudhula, B. Anjireddy, "Functional outcome of philos plate fixation for proximal humerus fractures," J Evid Based Med Healthc, pp. 137-139, 2016.
2. Lind T, Kroser K, Jensen J., "The epidemiology of fractures of the proximal humerus," Arch Orthop Trauma Surg, pp. 108:285-7, 1989.
3. Zhao K., Pi B., Wang Y., Wan G., Shen J., Yang H., "Factors influencing the effect of locking plate fixation in proximal humeral fractures of the elderly," International Surgery Journal, pp. 812-816, 2016.
4. Constant CR, Murley AH, "A clinical method of functional assessment of the shoulder," Clin orthop Relat Res, vol. 160, no. 4, p. 214, 1987.