

A comparative study of conservative functional treatment versus acute ligamentous repair in simple dislocation of the elbow at tertiary health care center

Rajkumar Indrasen Suryawanshi¹, Amol Khairnar^{2*}, Vijay Kamble³

¹Hon Associate Professor, ^{2,3}Assistant Professor, Department of Orthopaedics, S B H G M C and Sarvopchar Rughalaya Dhule, Maharashtra.
Email: rajkumarsuryawanshi59@gmail.com

Abstract

Background: The anatomy of the elbow is complex. Sufficient stability is essential to elbow functionality and is provided by soft tissue structures as well as bony structures. **Aims and Objectives:** To study conservative functional treatment versus acute ligamentous repair in simple dislocation of the elbow at tertiary health care center. **Methodology:** This was a cross-sectional study carried out in the department of Orthopedics at tertiary health care centre during the one year period i.e. January 2017 to January 2018, there were 46 patients admitted with dislocation of the elbow, with the written and explained consent all of them enrolled to Surgical Treatment Group (ST) (n=23) and Conservative treatment Group (CT) (n=23) randomly, all of them assessed in the subsequent visits by MEPS (Mayo Elbow Performance Score), the statistical analysis was done by un-paired t-test, and chi-square test and analyzed by SPSS 19 version software. **Result:** In our study we have seen that The mean age of in ST group was 45±4.52 Yrs. and in CT group was 43 ± 4.72 Yrs. was comparable (t = 1.4677, df = 44, p>0.05). The male to female ratio in both the groups was 1.09 and 1.3 was comparable with each other (X²=0.34, df=1, P>0.05), By MEPS Majority of the patients in ST groups were having Excellent Outcomes i.e. 75.00% as compared to 25.00%, Good -57.14% and 42.86%, Fair- 33.33% and 66.67%; Poor-10.00% and 90.00%, this observed difference was statistically significant (X²=11.71, df=3, p>0.008). **Conclusion:** It can be concluded from our study that outcome of conservative surgery were better as compared to surgical methods.

Key Word: conservative functional treatment, acute ligamentous repair, dislocation of the elbow

*Address for Correspondence:

Dr. Rajkumar Indrasen Suryawanshi, Hon Associate Professor, Department of Orthopaedics, S B H G M C and Sarvopchar Rughalaya Dhule, Maharashtra.

Email: rajkumarsuryawanshi59@gmail.com

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this complex anatomy is important in recognizing injury patterns in elbow dislocation, especially as it is the second most common dislocation after shoulder dislocation, with an incidence of 5 to 6 per 100 000^{1,4}. There are a number of mechanisms of dislocation^{5,6}; most are posterior dislocations. O'Driscoll *et al.*⁷ performed biomechanical analysis regarding posterolateral elbow dislocation and postulated that it is initiated by a rupture of the lateral ulnar collateral ligament (LUCL). This results in postero lateral rotatory instability, causing the forearm to displace into external rotation and circumferential tearing of the capsuloligamentous structures to occur from lateral to medial. Standard treatment consists of conservative therapy involving short-term immobilization of the joint followed by functional aftercare. However in surgical reconstruction of the soft tissues of the elbow have

INTRODUCTION

The anatomy of the elbow is complex. Sufficient stability is essential to elbow functionality and is provided by soft tissue structures as well as bony structures. Knowledge of

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multiplied in recent years ^{8,9}, so, we have done study of conservative functional treatment versus acute ligamentous repair in simple dislocation of the elbow at tertiary health care center.

METHODOLOGY

This was a cross-sectional study carried out in the department of Orthopedics at tertiary health care centre

during the one year period i.e. January 2017 to January 2018, there were 46 patients admitted with dislocation of the elbow, with the written and explained consent all of them enrolled to Surgical Treatment Group (ST) (n=23) and Conservative treatment Group (CT) (n=23) randomly, all of them assessed in the subsequent visits by MEPS (Mayo Elbow Performance Score), the statistical analysis was done by un-paired t-test, and chi-square test and analyzed by SPSS 19 version software.

RESULT

Table 1: Distribution of the patients as per the Age

	Surgical Treatment Group (ST) (n=23)	Conservative treatment Group (CT) (n=23)	p-value
Average age (mean ±SD)	45± 4.52	43 ± 4.72	t = 1.4677, df = 44, p>0.05

The mean age of in ST group was 45± 4.52 Yrs. and in CT group was 43 ± 4.72 Yrs. was comparable (t = 1.4677, df = 44, p>0.05).

Table 2: Distribution of the patients as per the Sex

Sex	Group (ST) (n=23)	Group (CT) (n=23)	P-value
Male	12	13	X ² =0.34, df=1, P>0.05
Female	11	10	

The male to female ratio in both the groups was 1.09 and 1.3 was comparable with each other (X²=0.34, df=1, P>0.05)

Table 3: Distribution of the patients as per the outcomes by MEPS

Outcome	Group (ST) (n=23)	Group (CT) (n=23)	p-value
Excellent	15 (75.00)	5 (25.00)	X ² =11.71, df=3, p>0.008
Good	4 (57.14)	3 (42.86)	
Fair	3 (33.33)	6 (66.67)	
Poor	1 (10.00)	9 (90.00)	

By MEPS Majority of the patients in ST groups were having Excellent Outcomes i.e. 75.00% as compared to 25.00%, Good -57.14% and 42.86%, Fair- 33.33% and 66.67%; Poor-10.00% and 90.00%, this observed difference was statistically significant (X²=11.71, df=3, p>0.008)

DISCUSSION

Elbow dislocation is divided into simple and complex dislocation. Simple dislocation occurs without a fracture around the elbow including the distal humerus, proximal ulna and proximal radius; whereas complex dislocation occurs with a concomitant fracture.¹⁰ Simple dislocation can be mostly treated with conservative management although the stability of joint needs to be assessed after reduction. According to some authors, surgical or non-surgically treatment of some simple dislocations more commonly leads to the complaint of decreased range of motion (ROM) than the instability of elbow joint.^{11,12} Initiation of early rehabilitation is helpful to reduce these complaints. Therefore, it is generally recommended to determine the treatment method of simple dislocation according to the stability on reduction of the elbow

joint.^{13,14} If simple elbow dislocation requires an extension block of over 30° to 45° to maintain joint reduction, surgical treatment should be considered because early joint motion is impossible.¹⁴ In our study we have seen that The mean age of in ST group was 45± 4.52 Yrs. and in CT group was 43 ± 4.72 Yrs. was comparable (t = 1.4677, df = 44, p>0.05). The male to female ratio in both the groups was 1.09 and 1.3 was comparable with each other (X²=0.34, df=1, P>0.05), By MEPS Majority of the patients in ST groups were having Excellent Outcomes i.e. 75.00% as compared to 25.00%, Good -57.14% and 42.86%, Fair-33.33% and 66.67%; Poor-10.00% and 90.00%, this observed difference was statistically significant (X²=11.71, df=3, p>0.008). These findings are similar to Milan Kracka¹⁵ they found Patients who were treated conservatively reached statistically significant better

scores in Quick Disability Arm Shoulder Hand, Oxford Elbow Score, and Mayo Elbow Performance Score. Functional conservative treatment resulted in a higher range of motion. The complication rate was higher in the group of surgically treated patients.

CONCLUSION

It can be concluded from our study that outcome of conservative surgery were better as compared to surgical methods.

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