

Introduction

Data from recent publications suggest that the Infinity-Lock Button System may provide good outcomes in treating acromioclavicular joint separation.

Publications

Loukovitis K. et al (2019)

- Data were collected on 30 patients implanted with the Infinity-Lock Button System (Xiros; n=15) or a Synthetic Tape with AP screw (n=15).
- Minimum follow up at 3 months.
- The outcome scores showed improvement from the pre-operative state.
- Radiological assessment at 6 weeks showed improvement in the coracoclavicular distance.
- No complications were reported.
- The results of the 2 treatments were not statistically significantly different however, the authors concluded that the results showed better early radiographic and clinical outcomes when using the Infinity-Lock Button System.

Table 1. Results Summary For Loukovitis K. et al (2019)

	Infinity-Lock Button System (Xiros)	Synthetic Tape With AP Screw
Pre-operative / Post-operative CC distance	20.1 / 12.7 mm	22.3 / 16.8 mm
Improvement in CC distance	7.4 mm	5.5 mm
CC: clavicle ratio	1.7: 1	1.8: 1
Post-operative CC: Clavicle Score (/100)	0.9: 1	1.4: 1
Post-operative ASES Score (/100)	76	77
Post-operative Nottingham Score (/100)	80	69

Chowdhury A. et al (2019)

- Data were collected retrospectively on patients implanted with the Infinity-Lock Button System (n=15) in a single UK district general hospital from May 2016 to September 2018.
- One patient was lost to follow-up.
- There were statistically significant differences between the pre- and post-operative DASH scores, and pre- and post-operative Oxford Shoulder Scores.
- Radiological assessment showed improvement in the coracoclavicular distance (mean reduction=7.79 mm (se=1.31 mm)).
- Three complications were reported. One incidence of post-operative paraesthesia (self-limiting), two failures of fixation necessitating revision surgery.
- The authors concluded that the Infinity-Lock Button System results in improved radiological and clinical outcomes in AC joint disruption and is an effective technique in the management of this condition.

Table 2. Results Summary For Chowdhury A. et al (2019)

	Pre-operative (mean, se)	Post-operative (mean, se)	P - value
DASH	74.2 (6.44)	27.0 (8.05)	p=0.0015*
Oxford Shoulder Score	44.8 (3.51)	20.75 (3.31)	p=0.0015*

* Wilcoxon Signed-Rank Test

Romano, Casillo et al. 2020

- Data were collected retrospectively on 15 male patients with chronic grade III acromioclavicular (AC) joint dislocation, who underwent surgical stabilisation of the AC joint dislocation between 2018 and 2019 using the Infinity-Lock Button System through a modified surgical technique.
- The patients were followed up for 18 months.
- A total of 12 patients rated their outcomes as very good and 3 as good. No patients were dissatisfied with surgery.
- The mean Constant Score increased from 38 points pre-operatively to 95 points post-operatively. The average Specific Acromio Clavicular Score (SACS) decreased from 52 points pre-operatively to 10 post-operatively, both significantly.
- No complications were detected.
- No clinical or radiographic loss of AC joint reduction were found at last follow up.
- The authors concluded that the described technique is effective for treatment of chronic grade III AC joint dislocation, resulting in elevated satisfaction ratings and predictable outcomes. Nevertheless, further longer-term follow-up studies are required.

Table 3. Results Summary For Romano, Casillo et al. (2020)

	Pre-operative (mean, sd)	Post-operative (mean, sd)	P - value
Forward Flexion	70 +/- 28	162 +/- 8	<0.05
External rotation with elbow at side	15 +/- 5	35 +/- 10	<0.05
External rotation at 90o of abduction	46 +/- 9	84 +/- 5	<0.05
Active internal rotation hand level	5 +/- 3	9 +/- 1	NS
Internal rotation at 90o of abduction	38 +/- 9	88 +/- 1	<0.05
SACS	52 +/- 15.7	10 +/- 8.2	<0.00001
Constant Score	38 +/- 15	95 +/- 3	<0.00001

Conclusions from the recent studies

- The Infinity-Lock Button System resulted in improved radiological and clinical outcomes following acromioclavicular joint disruption.
- Data suggests that the Infinity-Lock Button System is an effective technique in the management of acromioclavicular joint disruption.
- Further research with larger patient groups should be performed to corroborate these early findings.
- Infinity-Lock Button System is effective for treatment of chronic grade III AC joint dislocations

Abbreviations

DASH: Disabilities of the Arm Shoulder and Hand score.

ASES: American Shoulder and Elbow Surgeons Standardised Shoulder Assessment form.

CC: Coracoclavicular.

OSS: Oxford Shoulder Score.

Study Citations

Loukovitis K, Dupley L, Sharma S, Heasley R, Jain N. A Comparison Study of the Clinical and Radiographic Outcomes of Two Techniques of Coraco-Clavicular Ligament Reconstruction for Acromioclavicular Joint. EFORT Congress, Lisbon 2019.

Chowdhury A, Kohli S, Taiwo A, Sampalli S, Elmorsy A. Clinical and radiological outcomes of the Xiros Infinity-Lock Button System, a novel suture button technique, for the management of Acromioclavicular joint disruption. EFORT Congress, Lisbon 2019.

Romano, A. M., P. Casillo, M. De Simone, G. Nastrucci, D. Risorto, M. Susanna, A. Di Giunta and F. Ascione (2020). "The Infinity-Lock System for Chronic Grade III AC Joint Dislocation: A Novel Technique, Rehabilitation Protocol and Short Term Results." J Clin Med 9(8).