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Arthroscopically Assisted Stabilization for Acute vs. Chronic Type V Acromioclavicular Joint Injuries Results in Similar Functional Outcomes at Mid-Term Follow-Up

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Presenter Disclosure Information

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disclosed no conflict of interest.

Background

- Surgical treatment of **high-grade (Rockwood type IV-VI) ACJ injuries** in specific cases
- Technique used for surgical stabilization depends on **chronicity of injury**
- ISAKOS shoulder committee recommending **biologic augmentation** in **chronic ACJ injuries (> 3 weeks after injury)**
- **Limited and inconsistent evidence** pertaining to **comparative studies** examining functional outcomes following ACJ stabilization in **either the acute or chronic setting**

Existing studies limited to:

- Small sample sizes
- Heterogenous severity of included ACJ injuries (Rockwood types III-V)
- Short follow-up period

Beitzel et al., Arthroscopy, 2013
Beitzel et al., Arthroscopy, 2024
Dey Hazra et al., JSES, 2022
Lädermann et al., JSES, 2021
Moatshe et al., Arthroscopy 2018
Rosso et al., KSSTA, 2020

Purpose & Hypothesis

Purpose:

To **compare functional outcomes** of patients undergoing isolated arthroscopically assisted ACJ stabilization **for acute or chronic type V ACJ injuries** at mid-term follow-up.

Hypothesis:

Patients who underwent delayed ACJ stabilization (≥ 3 weeks) in the chronic setting would achieve **similar functional outcomes at mid-term follow-up** compared to those who underwent surgery in the acute setting (< 3 weeks).

Methods

Inclusion criteria:

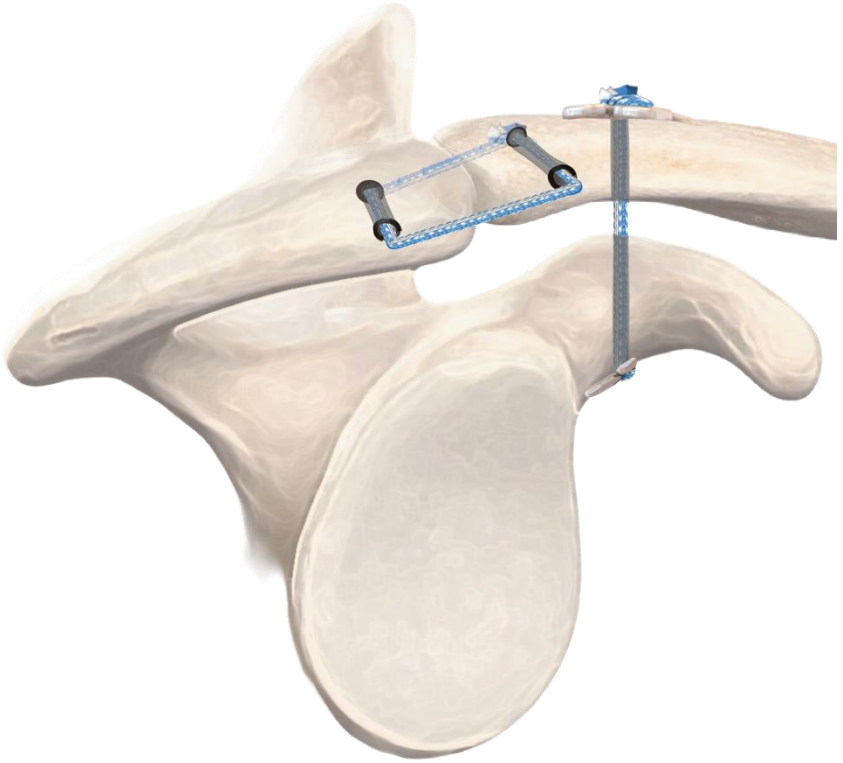
- **Isolated** acute or chronic **type V ACJ injuries**
- CC suspensory fixation with **additional AC cerclage**
- Time frame: January 2015 to August 2021
- Minimum follow-up of **two years**

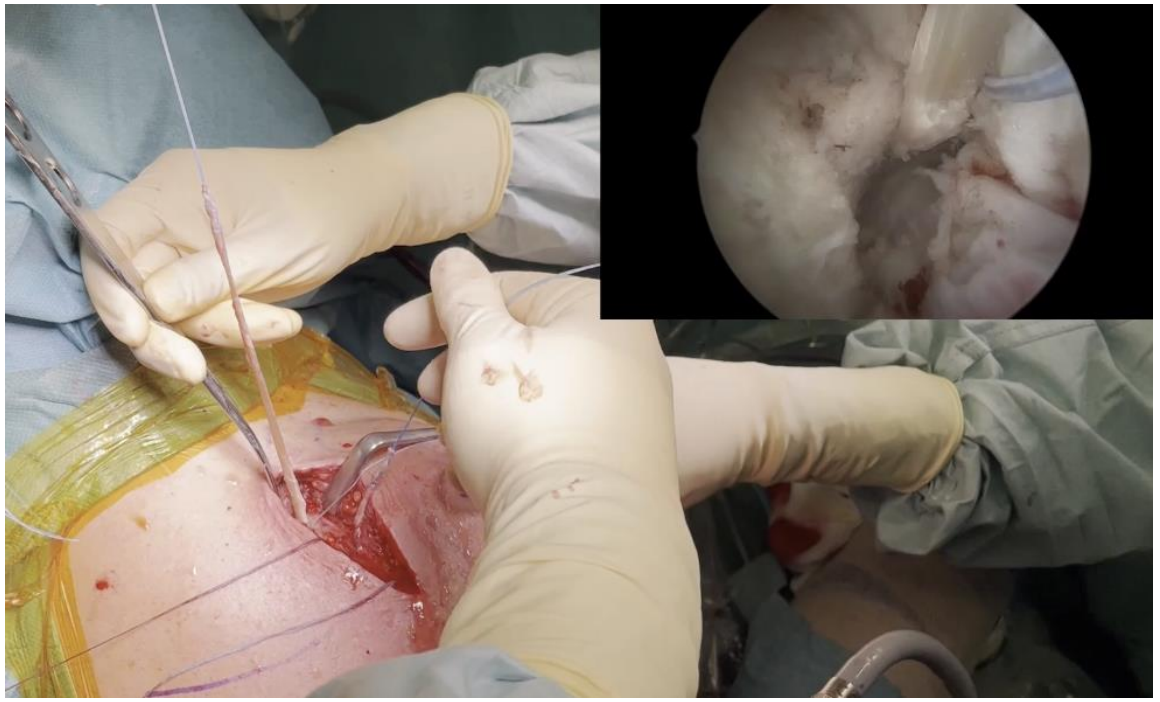
Exclusion criteria:

- **Conservative treatment** of ACJ injury
- Stabilization with **different surgical technique**
- Not classified as Rockwood type V
- **Concomitant surgical procedures** (e.g. LHBT, rotator cuff, labrum)

Methods – Surgical Technique

CC-Stabilization (suture tape and 2 titanium buttons) + AC-cerclage in box-configuration





Chronic setting: + hamstring tendon autograft!

Methods

1

Functional Outcome Measures at. min. 2-year-FU:

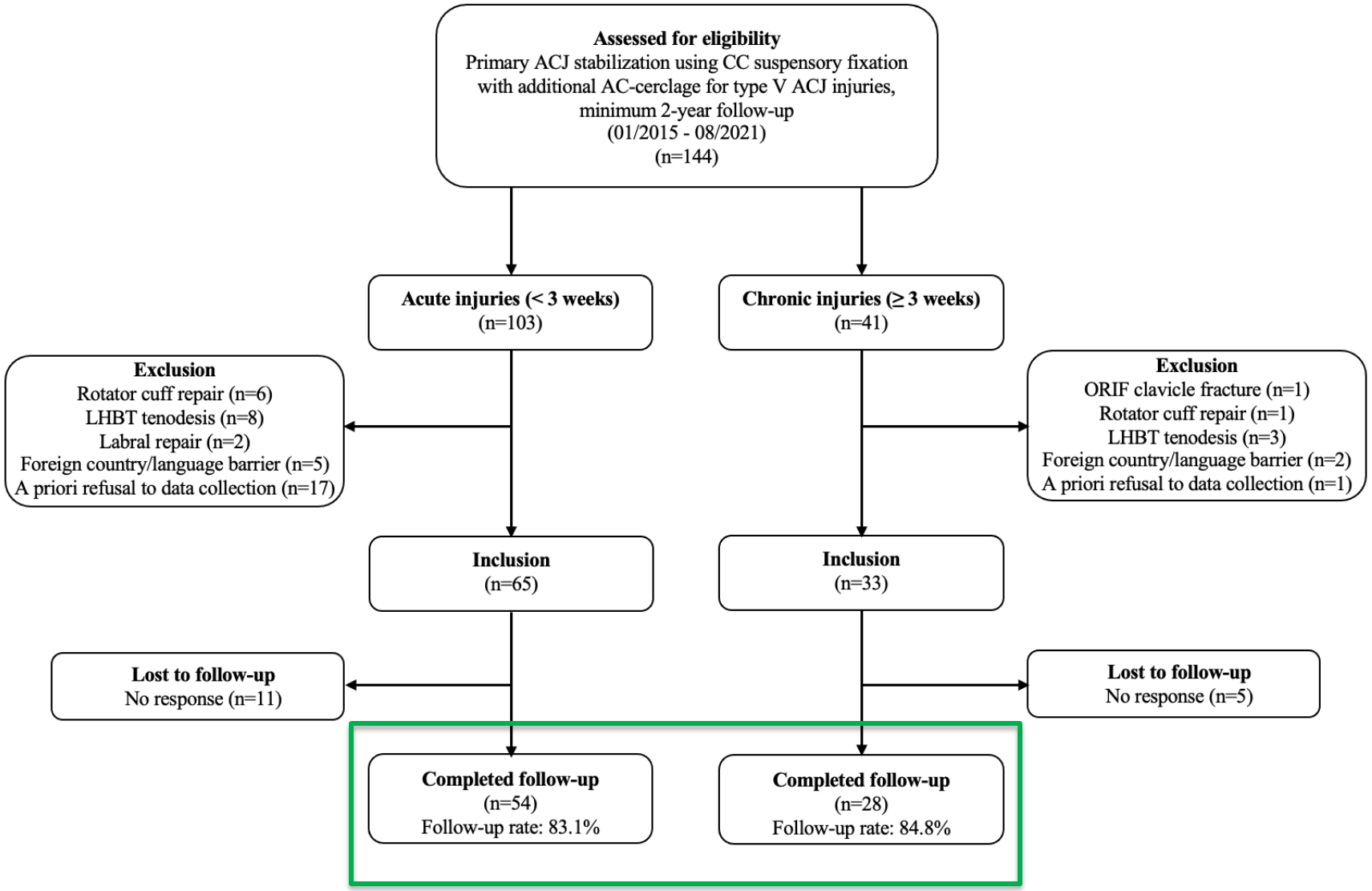
- Constant-Murley Score
- American Shoulder and Elbow Surgeons (ASES) Score
- Nottingham Clavicle Score
- VAS for pain

2

Postoperative subjective satisfaction with cosmetic appearance of ACJ

- Five-point Likert Scale: "totally satisfied", "very satisfied", "moderately satisfied", "slightly satisfied", "not at all satisfied"

Results


Assessed for eligibility
Primary ACJ stabilization using CC suspensory fixation with additional AC-cerclage for type V ACJ injuries, minimum 2-year follow-up
(01/2015 - 08/2021)
(n=144)
Acute injuries (< 3 weeks)
(n=103)
Chronic injuries (≥ 3 weeks)
(n=41)
Exclusion
Rotator cuff repair (n=6)
LHBT tenodesis (n=8)
Labral repair (n=2)
Foreign country/language barrier (n=5)
A priori refusal to data collection (n=17)
Exclusion
ORIF clavicle fracture (n=1)
Rotator cuff repair (n=1)
LHBT tenodesis (n=3)
Foreign country/language barrier (n=2)
A priori refusal to data collection (n=1)
Inclusion
(n=65)
Inclusion
(n=33)
Lost to follow-up
No response (n=11)
Lost to follow-up
No response (n=5)
Completed follow-up
(n=54)
Follow-up rate: 83.1%
Completed follow-up
(n=28)
Follow-up rate: 84.8%

Results

1 Patient Demographics

	Acute ACJ injury	Chronic ACJ injury	p-value
Age at surgery (years)	38.4 ± 12.2	43.7 ± 13.2	0.086
Follow-up time (years)	5.5 ± 1.8	5.5 ± 2.5	0.828
Time injury to surgery (days)	9.7 ± 5.2	365.4 ± 507.1	< 0.001
Surgical time (minutes)	89.7 ± 18.0	111.2 ± 20.6	< 0.001
Sex			
Male (%)	87	85.7	0.868
Female (%)	13	14.3	

Results

2 Functional Outcomes

Outcome Measure	Acute	Chronic	p-value
ASES	94.3 ± 10.1	93.5 ± 14.4	0.692
Constant-Murley	85.3 ± 13.3	85.5 ± 12.0	0.981
Nottingham Clavicle	85.6 ± 14.2	86.8 ± 14.0	0.679
VAS Pain	1.9 ± 1.1	2.0 ± 1.6	0.465

- ✓ **No significant difference** in functional outcomes at mid-term FU
- ✓ **PASS** for ASES: **90.9% in acute** and **83.3% in chronic** group (P = 0.439)
- ✓ Age at surgery and follow-up time not sig. correlated with outcome scores
- ✓ **Similar rates of revision surgery**: Acute 9.3% vs. Chronic 7.1% (P = 0.75)

Results

3 Postoperative Cosmesis of ACJ

Subjective Satisfaction (%)	Acute	Chronic	p-value
Totally satisfied	26.2	33.3	0.753
Very satisfied	26.2	28.6	
Moderately satisfied	33.3	33.3	
Slightly satisfied	7.1	0.0	
Not at all satisfied	7.1	4.8	

No sig. difference in postoperative subjective satisfaction with the **cosmetic appearance** of ACJ between acute and chronic ACJ injuries!

Limitations & Conclusion

Limitations:

- Associated biases of a **retrospective design**
- **Monocentric** study design may limit external validity
- No postoperative **radiographic evaluation**

Conclusion:

ACJ stabilization using CC suspensory fixation with an additional AC cerclage for isolated type V ACJ injuries in the **acute setting achieves similar results compared to delayed surgery**:

- Mid-term **functional outcomes**
- Satisfaction with the **cosmetic appearance** of the ACJ
- **Failure rates**

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Thank you for your attention !

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