Early Return to Play After Acromioclavicular Joint Stabilisation in Collision Athletes Using Twin Tailed Dog Bone Implants

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DISCLOSURES

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All other authors
Moatshe et al 2018 Arthroscopy

* Acromioclavicular and Coracoclavicular Ligament Reconstruction for acromioclavicular Joint Instability: A Systematic Review of Clinical and Radiographic Outcomes

* Measured ASES and Constant (not specific to AC joint)
* Complications up to 26%
* High Re-operation Rates

Porschke et al 2016 KSSTA

* Sports activity after anatomic acromioclavicular joint stabilisation with flip-button technique

* No Professional athletes
* Non AC-specific outcomes
* 18% Revision rates
* Overhead 26% lower level RTS.
AIMS & METHODS

AIMS

* The aim of the present study was to retrospectively review the results, return to sport and performance level after acromioclavicular joint stabilisation in a consecutive series of senior professional Australian Rules Football players competing in the Australian Football League (AFL).

METHODS

* Of 49 open ACJ stabilizations done over a 6 year period using a double fibretape and dog bone technique for ACJ stabilization after acute and subacute AC injuries (>/= Grade 3), 14 were performed in senior AFL players. After exclusions, a total of nine players could be included for analysis of post-operative success, return to high level collision sport, and performance scores in their first games after return to play. At a minimum follow-up of 12 months Nottingham Clavicle Score (NCS), Oxford Shoulder scoring System (OSS), Subjective Acromioclavicular Score (SACS) and Subjective Shoulder Value (SSV) were evaluated.
CLINICAL APPLICATION

DOUBLE DOG BONES + Internal Brace (as per Beitzel 2018)
DOUBLE DOG BONE EXPERIENCE

PERSONAL SERIES
* 49 cases from 09/13 (until 06/17).
* ALL >3 months
* 16 professional Footballers
  * 2 Rugby League
  * 14 Australian Rules (7 clubs)
* 14 Cycling / Pro Dirt Bikes

COMPLICATIONS
* 2 superficial wound problems (both spontaneously resolved)
* 1 stretched out enough to complain (anaesthetist!)
* 1 removal of lateral implant
* 1 removal of medial knot
14 Professional AFL Players

- 8 Different Professional Clubs
- Average Age 22

- All defined as Grade 3 + Medial instability or Grades 4-5
- Complication: One removal of suture knot at 12 months
Results

* At an average follow-up of 25.6 months (range 12 – 41) after surgery, mean NCS was 91.6 points (range 80 – 100), OSS was 47.3 points (range 42 – 48), SACS reached 99.9 points (range 99.8 – 100) and SSV was 94% (range 75 – 100), respectively.

* Average time of return to play was 60.6 days (8.7 weeks) for injuries that happened during the season. The game involvement (amount of kicks, marks, handballs and tackles) as well as player performance scores did not significantly change after surgery.

* However, the AFL Fantasy scores improved from 55.4 points before injury and surgery to 65.6 points after surgery (p = 0.08).
AFL FOOTBALL RETURN TO SPORT

9 IN-SEASON Injuries

* Defined as occurring with time available to return same season.

* **Average** Return to Competition play = 8 weeks

* (Range 6-11, Median 7 weeks)

High Collision Contact sport!
Table 2. Results of PROMs and Return to Play

Note. * Player 3 was injured at the end of the AFL season and so was not included in the within-season return to play analyses. SD = Standard Deviation. SACs = Specific Acromioclavicular Joint Score, NCS = Nottingham Clavicle Score, OSS = Oxford Shoulder Score, SSV = Subjective Shoulder Value, QOL = Quality of Life.

<table>
<thead>
<tr>
<th>Player</th>
<th>SACS pain</th>
<th>SACS function</th>
<th>QOL and Satisfaction</th>
<th>SACS final score</th>
<th>NCS final score</th>
<th>OSS final score</th>
<th>SSV (%)</th>
<th>Level at injury</th>
<th>Level after return to play</th>
<th>Month Injured</th>
<th>Time to Return to play</th>
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<td>9 weeks</td>
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<td>8 weeks</td>
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<td>Mean (SD)</td>
<td>2.6 (3.5)</td>
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<td>6.1 (3.1)</td>
<td>7.5 (4.8)</td>
<td>92.2 (6.5)</td>
<td>47.7 (1.0)</td>
<td>94 (4)</td>
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<td>Range</td>
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<td>45 to 48</td>
<td>90 to 100</td>
<td>6 to 13</td>
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SUMMARY

Good
* Very strong immediate fixation
* Early return to sport (8 weeks)
* Very safe and reliable so far

Bad
* Knot prominence?
* Muscle flap over knots
* Coracoid fracture?
* NOT IN THIS SERIES (only ones I’m aware of were with attempted arthroscopic use).

WORTH PURSUING !!!