Acromio-Clavicular Joint Stabilization with Dynamic System: Literature Review and Outcomes

E-poster

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## Financial Disclosure

<table>
<thead>
<tr>
<th>Name</th>
<th>Relationship to Arthrex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Mikhail RYAZANTSEV MD, PhD</td>
<td>I have no financial conflicts to disclose.</td>
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</tbody>
</table>
## DogBone (Arthrex) in literature

<table>
<thead>
<tr>
<th>Autor\Index</th>
<th>M. Faggiani [*]</th>
<th>P. Lee. [**]</th>
<th>P. Vulliet [***]</th>
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</thead>
<tbody>
<tr>
<td>Year</td>
<td>2016</td>
<td>2016</td>
<td>2017</td>
</tr>
<tr>
<td>System for fixation (number of patients)</td>
<td>MINAR (n=8)</td>
<td>DogBone (n=8)</td>
<td>DogBone (n=33)</td>
</tr>
<tr>
<td>Type of injury according Rookwood classification (number of patients)</td>
<td>type III (n=4) тип IV(n=4)</td>
<td>type III (n=4) type IV(n=4)</td>
<td>type III (n=8) type IV(n=8) type V(n=6) Distal clavicular fracture (n=6)</td>
</tr>
<tr>
<td>Follow up period</td>
<td>13 month (from 6 to 27)</td>
<td>14 month (from 2 to 26)</td>
<td>24.1 ± 5 month</td>
</tr>
<tr>
<td>CSS</td>
<td>91.10 (from 82.76 to 96.66)</td>
<td>-</td>
<td>94.3 ± 4.4</td>
</tr>
<tr>
<td>OSS</td>
<td>46.19 (from 42.00 to 48.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SPORTS</td>
<td>7.88 (from 3 to 10)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quick-DASH</td>
<td>-</td>
<td>-</td>
<td>2.0 ± 2.6</td>
</tr>
<tr>
<td>ASES</td>
<td>-</td>
<td>89.4 (from 56.7 to 100)</td>
<td>-</td>
</tr>
<tr>
<td>DASH</td>
<td>-</td>
<td>12.5 (from 0 to 55.8)</td>
<td>-</td>
</tr>
<tr>
<td>VAS</td>
<td>-</td>
<td>-</td>
<td>0.5 ± 1.1</td>
</tr>
<tr>
<td>Complication</td>
<td>-</td>
<td>-</td>
<td>Infection 3% (1/33)</td>
</tr>
</tbody>
</table>


Material and methods

Retrospective analysis
40 patients (39 male, 1 female)
Clavicle stabilization with DogBone (Arthrex)
**Period:** from 2014 to 2017 in our clinic.

40 stabilization

- 12 mini-open
- 28 arthroscopic
Material and methods

Measuring of CCD and CTD

CCD – Coraco - Clavicular distance
CTD – Clavicular Tunnel Distance
CCT – Coraco - Clavicular Tunnel
CA – Clavicula Acromiale end
Material and methods

The average age: 32±1.49 years (range 15 - 59 years).

Postoperative evaluation:
  ✓ UCLA
  ✓ ASES
  ✓ CSS

Median CCD calculated
  23 patients before surgery
  35 patients after surgery

Median CDD in preoperative and postoperative x-ray - 15 patients
Median CTD on postoperative x-ray - 35 patients.
Orthopedics scales DATA

UCLA

ASES

CSS
Results

26 patients follow up
18 in arthroscopy group
8 in mini-open group

<table>
<thead>
<tr>
<th>Scale/Groups</th>
<th>Arthroscopy</th>
<th>Mini-open</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UCLA</strong></td>
<td>Good: 100% (26/26)</td>
<td>Good: (8/8)</td>
</tr>
<tr>
<td><strong>ASES</strong></td>
<td>Excellent: 100% (26/26)</td>
<td>Excellent: 75% (6/8) Good: 25% (2/8)</td>
</tr>
<tr>
<td><strong>CSS</strong></td>
<td>Excellent: 67% (12/18) Good: 33% (6/18)</td>
<td>Excellent: 62% (5/8) Good: 38% (3/8)</td>
</tr>
</tbody>
</table>

All the obtained results were good and excellent according to UCLA, ASES and CSS orthopedic scales.
Results

<table>
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<tr>
<th>Median CTD</th>
<th>28.9 mm (IQR 27 – 32.9).</th>
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<tr>
<td>We received statistically significant difference ((p=0.0009)) between CDD with and without axial load on x-rays.</td>
<td></td>
</tr>
<tr>
<td>No statistically significant difference between two groups (arthroscopy and mini-open).</td>
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Conclusion

Acromio-clavicular joint stabilization using dynamic systems is a method of choice in case of distal clavicle dislocation.

Dynamic system shows good and excellent long-term results after the operation according to the orthopedic scales data.
Conclusion

Advantage of dynamic systems is absence of need for metal fixator’s removal. Standard x-rays with and without axial loads in comparison with the contralateral side indicates acromio-clavicular joint injury. It is necessary to continue evaluation of the acromio-clavicular joint stabilization results at longer term.
References: