Midshaft clavicle fractures

Charlotte Lewis
Queen Alexandra Hospital
Portsmouth
When not to fix

Medically unfit

Children

Undisplaced
Always fix

Open #

Vascular injury

Floating shoulder?
Historical evidence

1960s Neer and Rowe

Vast majority unite with a sling
No functional impairment

???
Hill (JBJS Br 1997)

52 fractures
displaced
non operative

unsatisfactory outcome 31%
initial >2cm ↑ NU risk 15%
final >2cm unsatisfactory
Robinson (JBJS Am 2004)

581 midshaft fractures
non union rates 4.5%

↑ displaced
↑ comminuted fractures
↑ female
↑ age
Zlowodzki (J Orthop Trauma 2005)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Non-union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-operative</td>
<td>15.1%</td>
</tr>
<tr>
<td>ORIF</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

2144 clavicle fractures
Displaced fractures
McKee (JBJS Am 2006)

Non-operative displaced fractures

↑ strength (~80% of other arm)
↑ DASH (24.6)

50% satisfied
(weakness, pain, displacement, bump)

Worse with ↑ shortening
Canadian Orthopaedic Trauma Society (JBJS Am 2007)

132 fractures
displaced mid-shaft

<table>
<thead>
<tr>
<th></th>
<th>Non operative</th>
<th>ORIF</th>
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<tbody>
<tr>
<td>Union</td>
<td>28.4 wks</td>
<td>16.4 wks</td>
</tr>
<tr>
<td>Non-union</td>
<td>14%</td>
<td>1.6% (3%)</td>
</tr>
<tr>
<td>Symptomatic MU</td>
<td>18%</td>
<td>0%</td>
</tr>
<tr>
<td>DASH @1yr</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Wound Infection</td>
<td>0%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>
So which ones should we fix?
Summary

Shortened

Comminuted

Vertical Displacement