A Single Solution for Lateral Clavicle Fractures and Acromioclavicular Joint Dislocations

3.5 mm Clavicle Hook Plates

Surgical Technique

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**MR Information**
The 3.5 mm Clavicle Hook Plates have not been evaluated for safety and compatibility in the MR environment. It has not been tested for heating, migration or image artifact in the MR environment. The safety of the 3.5 mm Clavicle Hook Plates in the MR environment is unknown. Scanning a patient who has this device may result in patient injury.

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**Image intensifier control**
The 3.5 mm Clavicle Hook Plate provides a single solution for fixation of both lateral clavicle fractures and acromioclavicular joint injuries. This plate and screw construct allows rotational mobility of the shoulder.

**Features**
- Dynamic compression screw holes accept 3.5 mm cortex and 4.0 mm cancellous bone screws
- Compatible with the 3.5 mm DCP Drill Guide (322.32) or the 3.5 mm Universal Drill Guide (323.36)
- Anterolateral screw hole provides additional options for screw fixation in the lateral clavicle
- Hook provides additional support to both lateral clavicle fractures and acromioclavicular joint dislocations
- Plates available with 6 or 8 holes
- 15 mm and 18 mm hook depths accommodate patient anatomy
- Precontoured in left and right plates
- Available in 316L stainless steel or commercially pure (CP) titanium
- Offset hook design to avoid insertion of hook into acromioclavicular ligament
AO Principles

In 1958, the AO formulated four basic principles, which have become the guidelines for internal fixation.¹,²

**Anatomic reduction**
Fracture reduction and fixation to restore anatomical relationships.

**Stable fixation**
Fracture fixation providing absolute or relative stability, as required by the patient, the injury, and the personality of the fracture.

**Early, active mobilization**
Early and safe mobilization and rehabilitation of the injured part and the patient as a whole.

**Preservation of blood supply**
Preservation of the blood supply to soft tissues and bone by gentle reduction techniques and careful handling.

The 3.5 mm Clavicle Hook Plate is indicated for:
– Lateral clavicle fractures
– Dislocations of the acromioclavicular joint
1
Incision

Through a standard surgical incision, taking care not to disrupt the surrounding soft tissues, expose the outermost part of the clavicle, the fracture site, and the acromioclavicular joint.

2
Insertion

Perform temporary fixation of the fracture using Kirschner wires or bone holding forceps. Dissect the soft tissue, posterior to the acromioclavicular joint, to prepare a path for the insertion of the hook. Using the plate with 15 mm hook depth, pass the hook under the acromion. Place the shaft of the plate onto the superior aspect of the clavicle. If there is difficulty lowering the plate shaft onto the clavicle, then the plate with 18 mm hook depth should be used. Once the plate shaft is placed on the clavicle, the end of the hook should be in contact with the underside of the acromion. Confirm that the correct anatomic alignment of the clavicle and acromion has been restored without impingement of the rotator cuff.

Also before fixation, use the C-arm to verify that full shoulder motion, particularly in abduction and external rotation, can be achieved without impingement of the humeral head on the hook.
Fixation

One or two screws (either 3.5 mm cortex or 4.0 mm cancellous bone screws) can be placed in the lateral plate holes. The position and angulation of the screws depends on the fracture configuration. The 3.5 mm cortex screws placed in the medial plate holes can be positioned eccentrically depending on the fracture configuration, to provide dynamic compression of the fracture fragments.
Dislocation of the Acromioclavicular Joint

1

Incision

Through a standard surgical incision, taking care not to disrupt the soft tissues, expose the acromioclavicular joint and the lateral shaft of the clavicle.

2

Insertion

Push down on the clavicle to reduce the dislocation of the acromioclavicular joint and provide temporary fixation using Kirschner wires. Dissect the soft tissue, posterior to the acromioclavicular joint, to prepare a path for the insertion of the hook. Perform any ligament or capsule repairs. Using the plate with 15 mm hook depth, pass the hook under the acromion.

Place the plate on the superior aspect of the clavicle and confirm that the correct anatomic alignment of the clavicle and acromion has been restored. If the realignment appears to be overcorrected, use the plate with 18 mm hook depth.

Before fixation, use the C-arm to verify that full shoulder motion, particularly in abduction and external rotation, can be achieved without impingement of the humeral head on the hook.
3 Fixation

If sutures are used to repair the ligaments, the sutures can be passed through the lateral hole(s) of the plate and tied under tension to provide additional stability to the acromioclavicular joint. Place 3.5 mm cortex or 4.0 mm cancellous bone screws in the medial plate holes. Tighten the screws, ensuring that the acromioclavicular joint is reduced and stable.
### 3.5 mm Clavicle Hook Plates

<table>
<thead>
<tr>
<th>Stainless Steel</th>
<th>Titanium</th>
<th>Holes</th>
<th>Length (mm)</th>
<th>Hook depth (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>241.062</td>
<td>441.062</td>
<td>6 holes, right</td>
<td>58</td>
<td>15</td>
</tr>
<tr>
<td>241.063</td>
<td>441.063</td>
<td>6 holes, left</td>
<td>58</td>
<td>15</td>
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<tr>
<td>241.064</td>
<td>441.064</td>
<td>6 holes, right</td>
<td>58</td>
<td>18</td>
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<tr>
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<td>6 holes, left</td>
<td>58</td>
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</tr>
<tr>
<td>241.066</td>
<td>441.066</td>
<td>8 holes, right</td>
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<tr>
<td>241.069</td>
<td>441.069</td>
<td>8 holes, left</td>
<td>77</td>
<td>18</td>
</tr>
</tbody>
</table>

Note: For additional information, precautions and warnings, please see the package insert.

For detailed cleaning and sterilization instructions, please refer to www.synthes.com/cleaning-sterilization or sterilization instructions, if provided.
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