Triscaphoid arthrodesis for advanced Kienböck disease, with 7 year follow up

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Objective:
Kienböck disease grade IIIA is a therapeutical challenge. Triscaphoid arthrodesis can postpone more extensive surgery

Material and method:
Kienböck disease grade IIIA without radioscaphoid osteoarthritis.
15 (11 male) patients, median age 33 (19-44) at time of surgery
9 had surgery in the non-dominant hand (9 left)
> 3 years follow up
Triscaphoid arthrodesis (K-wires, bone graft, cast 8 weeks)

Results:
For all 15 patients:
• No per- or post-operative complications
• All fusions healed
• 2 patients lost during follow up (1 emigrated, 1 not interested)
• 3 patients received a wrist arthroplasty

Long term follow up median 7 (3-13) years (N=10):

<table>
<thead>
<tr>
<th>N=10</th>
<th>Q-DASH</th>
<th>PRWHE</th>
<th>VAS rest</th>
<th>VAS activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>10(0-52)</td>
<td>14(2-68)</td>
<td>0 (0-6)</td>
<td>1 (0-6)</td>
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• AROM 50 % of contralateral healthy wrist
• Grip strength 80% of healthy wrist
• Key pinch strength comparable to healthy wrist
• Progression of arthritis:
  Plain x-ray: Intercarpal degenerative changes in 4/10 patients
  CT-scan: Degenerative changes (intercarpal and radioscaphoid) in 8/10 patients
• The patients were satisfied and reported improved hand function and reduced pain level compared to preoperative status

Conclusion:
Advanced Kienböck disease can be successfully treated with a triscaphoid arthrodesis.

In most patients it can postpone more extensive wrist fusion or wrist arthroplasty at the expense of wrist motion and strength.

Surgery does not stop further progression of wrist osteoarthritis. CT scans revealed more degenerative changes than plain radiographs and should be included in the follow up.