Scapholunate Advanced Collapse and Scaphoid Nonunion Advanced Collapse

SLAC / SNAC : Radiological assessment

Kolo Frank
SLAC

- Most common cause of osteoarthritis involving the wrist
- Progressive form of wrist osteoarthritis
- Osteoarthropathy of the carpus secondary to altered stress around an unstable scaphoid

**CAUSES**

- Most often: traumatic injury of the scapholunate ligament
- Calcium pyrophosphate dehydrate crystal deposition disease (CPPD)
- Idiopathic avascular necrosis of the scaphoid (Preiser disease)
- Midcarpal instability
- Perilunate dislocation
SLAC

Dorsal component: true ligament / transversely oriented collagen fibers/
restraint to distraction, torsional and translational moments

Palmar component: thinner / important contribution to rotational stability

Proximal membranous portion: fibrocartilaginous structure
Scapholunate dissociation /dissociative carpal instability

Pathological change in position of the scaphoid results in incongruence

Excessive loading and contact at the dorsal and volar aspects of radioscaphoid joint due to elliptical configuration of the radioscaphoid joint

Radiolunate articulation is usually preserved due to spherical nature of the joint
SLAC I: Osteoarthritis changes: most radial aspect of radioscaphoid joint

SLAC II: Osteoarthritis changes: entire radioscaphoid joint

SLAC III: Osteoarthritis changes: entire radioscaphoid joint + capitolunate joint
Cartilage evaluation: which imaging?

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<th>MRI</th>
<th>MDCT arthrography</th>
<th>MR arthrography</th>
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<tr>
<td>Sensitivity</td>
<td>10-30 %</td>
<td>100 %</td>
<td>30-40 %</td>
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<tr>
<td>Specificity</td>
<td>100 %</td>
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MDCT arthrography is more accurate for cartilage evaluation
SNAC: is due to non united fracture of the scaphoid

Pattern of osteoarthritis changes and physiopathology very similar to SLAC wrist

SL ligament usually usually preserved

Osteoarthritic changes occur between the distal radius and the distal scaphoid fracture fragment progressing proximally but only up to the non union site