The Natural Course Of Arthroscopically Diagnosed SL Ligament Injuries In Distal Radial Fractures. A 13 To 15-year Clinical And Radiographical Follow-up.

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Introduction: Intercarpal ligament injuries are common in distal radius fractures (DRF) in younger, non-osteoporotic patients. Second to TFCC, scapholunate (SL) ligament injuries are the most common injuries and occur in up to 50% of DRFs. The SL-ligament plays an important role in wrist stability and is one of the essential structures of the intercalated wrist segments. With a primary focus on the fracture management, a traumatic tear of the SL-ligament may be overlooked by the treating physician and remain clinically unnoticed. The natural course of untreated SL-ligament injuries in DRFs is unknown. The aim of this prospective study was to evaluate the long-term results and natural course of untreated scapho-lunate ligament tear, associated with distal radius fracture.

Methods: Between 1995 and 1997, 51 consecutive younger (<60 years) individuals with a displaced distal radius fracture (24 men and 27 women, median age 41 years (range 20-57)) were treated according to the standard fracture protocol at that time. Within the first two weeks the patients had an operative procedure due to the displaced fracture and in addition, at the same time, a diagnostic wrist arthroscopy to map concomitant soft tissue injuries. The fractures were treated but the ligament injuries were left without treatment. In total 32 of 51 patients had a SL ligament tear. Ten patients had a total SL tear (10 Grade 3 and 0 Grade 4), 22 a partial tear (Grade 1-2) and 19 patients no SL tear. In 2010, 13-15 years after the fracture, all 51 patients were traced and 47 patients still alive were invited for interview, clinical examination and radiographs.

Results: 38 of the 51 original patients (75%) participated in this long term outcome study. Nine patients remained of the originally 10 patients (one deceased) with a total (grade 3) SL tear and these had a grip strength of 83% of the contralateral, compared to 92% in the 29 patients with partial or no tears. The median DASH score was 2 (range 0-55) for the total SL tears (Grade 3) compared to 9 (range 0-70) for the patients with partial tear or intact SL ligament. There were no differences between the groups regarding pain, neither at rest or under load, nor range of motion. One patient had advanced arthritic changes but had identical radiographic appearance in the unfractured contralateral wrist. None of the other 37 patients developed static SL dissociation or scapho-lunate advanced collapse (SLAC) wrist.

Discussion: In this long-term outcome study of the natural course of untreated SL ligament injuries, associated with displaced distal radius fractures, there was no major difference between the outcome of a partial (Gr 1-2) compared to a total (Gr 3) SL tear. In neither the partial nor total SL tear group, static SL dissociation or progress to SLAC-wrist was found after 13-15 years. In conclusion, we found no evidence for an early surgical repair of the SL ligament but speculate that the absence of patients with a grade 4 complete tear, representing a total ligamentous disruption, compromises the conclusion.

Significance: We show that in the long term (13-15 years) scapho-lunate ligament injuries, up to grade 3 (Geissler), as a part of a distal radius fracture- do not seem to lead to static SL dissiation or scapholunate advance collapse (SLAC).

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