



INTER CARPAL ARTHRITIS

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Abstract

Limited Intercarpal fusion is a well recognised treatment option and a time-tested procedure. Although these procedures usually yield good and predictable outcomes, many complications have been reported in the medical literature.

Keywords: Intercarpal; Arthritis; Fusion

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Degenerative wrist arthritis may result from untreated cases of idiopathic carpal avascular necrosis, as in Kienböck's or Preiser's disease, as Scapho-Lunate-Advance-Collapse (SLAC-wrist). Subsequently, similar progressive degeneration has been designated for Scaphoid-Nonunion- Advance-Collapse(SNAC-wrist), for Scaphoid Chondrocalcinosis- Advance-Collapse(SCAC-wrist) , In this study, types 1 to 3 of these diseases will be emphasized on provided that radiolunate articulation is good, so the planned fusion aims at good radiolunate motion . (**Watson HK, et al, 1999**).

Traumatic causes of wrist arthritis include injuries to ligament and bone. Although injury to many of the other wrist ligaments can lead to progressive wrist arthrosis, chronic scapholunate ligaments tears in particular are known to produce intercarpal instability, altered wrist kinematics and joint loading, and degeneration of the radiocarpal joint.(**. Pisano SM, et al, 1991–M atheson LN, et al, 2006-Zubairy AI, et al, 2003**).

Fracture and subsequent nonunion of the scaphoid also leads to a series of predictable degenerative changes, first involving the radial styloid tip and then progressing to the more proximal radioscapoid joint and eventually leading to pancarpal arthritis . This sequence of events is analogous to SLAC wrist and has been termed scaphoid nonunion advanced collapse (SNAC). (**Kirschenbaum D, et al, 1993 - S ennwald GR, et al, 1995**).

Wrist osteoarthritis can also occur secondary to an intra-articular fracture of the distal radius or ulna or from an extra-articular fracture resulting in malunion and abnormal joint loading. The surgical treatment of the osteoarthritic wrist rests on basic principles that take into account the location of the arthritis and the most reliable procedure that might eliminate the patient's pain, improve his/her function, and prevent further progression of the pain-generating degenerative process.(**Vandesande W, et al, 2001**).

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1. Introduction

Watson and Ballet have described the predictable pattern of degenerative changes that occur when the scapholunate ligament becomes compromised. They referred to this progressive joint destruction as Scapho-Lunate-Advance-Collapse (SLAC-wrist). Subsequently, similar progressive degeneration has been designated for Scaphoid-Nonunion- Advance-Collapse(SNAC-wrist), for Scaphoid Chondrocalcinosis- Advance-Collapse(SCAC-wrist) .(**Watson HK, et al, 1984-Krakauer JD , et al , 1994 - S affar P, et al ,2004**).

The first limited wrist fusion case was reported less than a century ago, and until the 1980s only a few case reports had been published). (**D e Carli P, et al, 2007**).

Commonly used midcarpal fusion procedures include scaphotrapezotrapezoid (STT), scaphocapitate (SC), capitate-hamate-lunate-triquetrum or four-corner fusion (4-CF), and capitulate (CL) fusion. With regard to the proximal row, lunotriquetrum (LT) and scapholunate (SL) arthrodesis concern specific lesions. (**Clayton ML, et al, 2007**).

These partial fusions are essentially salvage procedures that are mainly devised for restoring a reasonable degree of function to the wrist, while minimizing pain and maximizing motion (**G ellmann H, et al, 1988**).

The biomechanics of the wrist are substantially altered by all intercarpal fusion procedures. In the unaltered wrist, 20% of axial force is transmitted across the ulnocarpal articulation and 80% across the radiocarpal articulation. Sixty per cent of this occurs at the radioscapoid articulation, and 40% through the radiolunate articulation. Modification of the carpal bone position and motion involves a load transfer that is usually beneficial for the joint (**S kie M, et al, 2007**).

Predicted loss of motion with all combinations of limited wrist fusions has been studied biomechanically, and typically occurs with each specific fusion.(**Clendenin MB, et al, 1981–Berger RA, et al, 1995**).

2. References

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