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Cadaveric scapholunate reconstruction using the ligament augmentation and reconstruction system.

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Abstract

Background Untreated scapholunate ligament disruption may lead to progressive wrist arthritis. Current techniques used to treat the disruption may not prevent arthritis because of attenuation of a reconstructive ligament substitute or failure to re-establish normal wrist kinematics. Questions/Purposes This study evaluates a combined synthetic-autologous technique for the treatment of scapholunate dissociation. Methods Scapholunate dissociation was created in six cadaveric wrists. The dorsal and volar components of the scapholunate ligament were reconstructed using the Ligament Augmentation & Reconstruction System (LARS; LARS, Arc-sur-Tille, France) and a modified Blatt capsulodesis performed. Reconstructed wrists were subjected to cyclic passive motion. Outcomes were measured radiologically and compared using Student's t-test. Results Carpal alignment was re-established following scapholunate ligament reconstruction. Carpal alignment was maintained after cyclic loading. Conclusions The technique described corrected the carpal malalignment associated with scapholunate dissociation. Corrected positions were maintained after one thousand cycles of flexion and extension without fraying or loosening of the LARS. Clinical Relevance Current popular techniques for scapholunate reconstruction do not address the important dorsal and palmar components of the ligament that control their intercarpal motion. Reconstruction of the dorsal and palmar components of the scapholunate ligament can be achieved through a dorsal approach to the wrist.

KEYWORDS: LARS; ligament; reconstruction; scapholunate

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