

Anatomic Medial Ulnar Collateral Ligament Reconstruction With Internal Brace Augmentation in Throwing Athletes

Christopher L Camp¹, Kevin Jurgensmeier¹, Alexander M Boos, Joshua S Dines²

¹Mayo Clinic, ²Hospital For Special Surgery

Background

Injury to the medial ulnar collateral ligament (MUCL) is a common setback experienced by many throwing athletes, often necessitating 12 to 18 months of rehabilitation. Current reconstruction techniques fail to anatomically restore the MUCL. This video demonstrates a novel anatomic technique for reconstruction of the MUCL supplemented by internal bracing.

Indications

Initial injuries of the MUCL can be managed nonsurgically; however, in high-level throwing athletes, partial and complete tears frequently are managed via MUCL reconstruction, resulting in increased reliability and recovery.

Technique Description

A small incision is created over the proximal wrist crease to harvest an ipsilateral palmaris longus autograft. A second 6-cm incision is created over the medial epicondyle to expose the sublime tubercle and ridge. Sutures are placed through the torn ligament and are used later for native ligament repair. A 4-mm hole is drilled in the MUCL origin of the medial epicondyle, and two 2-mm sockets are drilled proximal but connecting to the 4-mm hole. The sutures in the native ligament are passed through the sockets and later tied over the bone bridge for repair. A bone-tendon-bone tightrope is shuttled through the medial epicondyle drill holes, and the autograft and suture tape are loaded and reduced into the humeral socket. On the ulna, suture anchors are placed on both sides of the sublime tubercle. The distal end of the graft is then sutured with the use of FiberWire (Arthrex). The graft is then secured to the sublime tubercle with the use of previously placed suture anchors. The suture tapes and the internal brace are loaded into a SwiveLock suture anchor (Arthrex) and placed distally into the sublime tubercle ridge, creating an anatomic reconstruction construct. Then, the native ligament sutures and tightrope are re-tensioned across the humeral bone bridge for final fixation.

Results

In a cohort of 26 professional and amateur throwers, more than 90% returned to play at the same level at a mean follow-up of 9.9 months postoperatively.

Discussion/Conclusion

Anatomic reconstruction of the MUCL via internal bracing is a viable treatment option for MUCL injuries and may allow for expedited return to sports activity for some athletes.