Baseball Research

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New Technique for Tommy John Surgery Demonstrates Excellent Strength

Tommy John Surgery has proven great success but is an extremely technically demanding surgery to perform. The surgery is therefore performed by select specialists with great experience in taking care of throwing athletes and with proper surgical training. The surgery also requires an extensive postoperative rehabilitation period. In an effort to simplify the complexity of the surgery and also to enhance the strength of the reconstruction to facilitate more aggressive rehabilitation, a new technique has been developed that creates fixation of the surgical graft with screws similar to ACL reconstruction surgery Research performed by Dr. Christopher Ahmad, evaluated the strength and ability of the new Tommy John Surgery.

The results demonstrated excellent strength and normal function when compared to the normal native elbow medial collateral ligament.

The methods included 10 matched pairs of cadaveric elbows with one from each pair undergoing testing with the new reconstruction. The opposite elbow underwent

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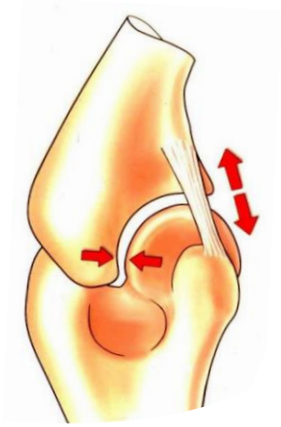
Dr. Christopher Ahmad studied mechanical engineering at Columbia University setting a foundation to become a national expert in ligament injuries. He trained with Dr. Frank W. Jobe, the inventor of Tommy John Surgery, and now practices sports medicine at Columbia University. He is the Chief of the Sports Medicine Service and the Head Team Physician for the New York Yankees. He has been researching and performing elbow surgery in baseball players for over twenty years.



Applying Research to Improve Patient Outcomes

testing of the normal ligament. The testing demonstrated excellent strength and normal function of the reconstruction at every elbow position tested.

This research was performed prior to using the surgical technique in actual patients. It was important to make sure the advantages were verified. Following this research study, the technique has now been used in actual patients and most often it is used in combination to enhance existing techniques. It has proven extremely useful in revision situations where a prior Tommy John Surgery has been reinjured.

Ahmad CS, Lee TQ, ElAttrache NS: Biomechanical Evaluation of a New Elbow Ulnar Collateral Ligament Reconstruction Using Interference Screw Fixation. *American Journal of Sports Medicine,* 31:332-337, 2003

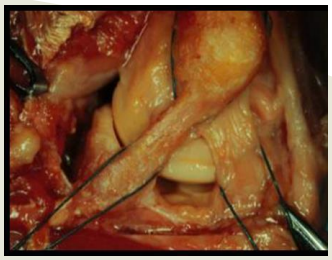


Figure 1: Normal elbow MCL.

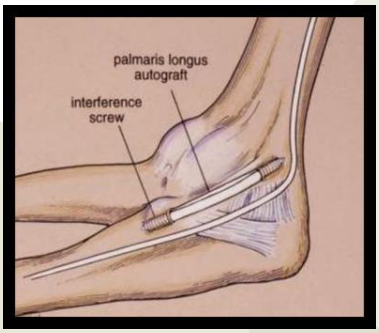


Figure 2: New MCL reconstruction.

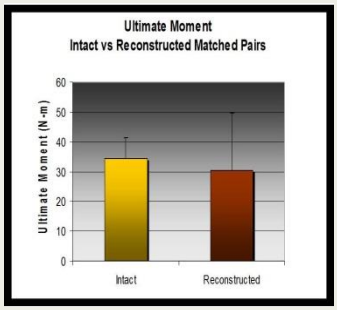


Figure 3: Strength of new MCL reconstruction.

BIO-MECHANICAL TESTING

Biomechanical testing used in this research was performed with a materials testing machine. A custom device allowed the machine to push on the elbow with force in the same direction experienced during pitching. The force was applied until the ligament ruptured. The machine measured the force at failure and comparisons of the normal ligament to the new ligament reconstruction were made.

To see more research or watch a video ofTommy John Surgery being performed by Dr. Christopher Ahmad, please go to www.ChrisAhmadMD.com

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