

Jim Kelly Needs Friction Massage

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This article is being written on Sunday, December 16, 1990. Yesterday, I watched the Giants-Bills football game and saw Jim Kelly, the Bills' quarterback, thrown to the ground. He was clutching the medial portion of his left knee. He was able to walk off the field with help and stood at the sidelines watching the game. In the excitement of the game, he jumped and probably twisted the knee slightly and his pain greatly increased. He was immediately driven to the trainer's room. He was diagnosed as having a medial collateral ligamentous sprain.

Today he is to have an MRI to determine the extent of the tearing. They hope to have him back in action within 3 to 4 weeks. The fact that he was able to watch the game, standing, immediately after the trauma, was an indication that the anterior cruciate ligament was probably okay, or if it was a meniscus lesion, it was not severe.

The main function of the medial collateral ligament (MCL) is to act as the chief restraint against valgus stress. It also prevents external rotation of the tibia on the femur and helps as a secondary restraint to anterior tibial translation if the anterior cruciate ligament is absent. The MCL consists of a deep and superficial portion. The superficial portion is called the tibial collateral ligament and originates from the medial epicondyle of the femur, just below the adductor tubercle, and inserts on the medial tibia, three to four inches below the joint line, deep to the pes anserinus. The deep portion of the MCL, also known as the middle one-third medial capsule,¹ is a thickening of the joint capsule and blends with the medial meniscus. It originates on the medial epicondyle and inserts on the tibia near the joint line².

In acute trauma of the knee the first test to perform should be the Lachman test to rule out anterior cruciate ligament (ACL) sprain. Clancy³ states that the next tests in increasing order of painful ligamentous stress should be the anterior/posterior drawer, the varus-valgus at 0 and 30 degrees, the pivot-shift, and finally the reverse pivot-shift. In an acute situation, often the patient will only allow one test due to hamstring spasm; due to the frequency of damage to the ACL and its importance in the knee, the Lachman test should be done first.

In Jim Kelly's case, the first significant positive test would probably have been the valgus stress test at 30 degrees. It is important when stressing the MCL into valgus that the examiner holds the foot and tibia in a neutral position and not in lateral rotation as has been taught. Testing valgus with the leg and foot in neutral position is specific for the MCL. Externally rotating the leg or foot during the test would also stress the posterior oblique ligament, posteromedial capsule, fibular collateral ligament, popliteus, and posterolateral capsule.^{4,2} During the valgus test, feel for the end-point.

It is important to realize when testing the collateral knee ligaments that the joint has primary and secondary joint stabilizers. The superficial tibial collateral ligament is the primary stabilizer for valgus of the knee; the deep capsular collateral ligament, posterior oblique ligament, and anterior and

posterior cruciate ligaments are the secondary restraints.²

Testing valgus should initially be done using low force which may show mild laxity. If the secondary stabilizers are normal, then the examiner might not realize that the primary stabilizer is severely injured. Of course, if low force shows greater laxity, then it is possible that the secondary stabilizers are also involved. At 30 degrees flexion, most of the stress is received by the MCL since the cruciates and posterior capsular ligaments are more relaxed. Testing valgus with the knee at full extension would not show laxity but may be painful if the superficial ligament is sprained. Grade-I and grade-II sprains will present with a distinguishable end-point. Grade-I shows no laxity, while grade-II shows slight to moderate laxity. The main distinguishing factor of any grade-III is the soft, mushy lack of an end-point. It must be realized that even the presence of a grade-I sprain does not completely rule out injuries to other structures.

While listening to the interview with Kelly's orthopedic surgeon, I was wondering whether anyone applied friction massage. Cyriax and others recommend immediate friction to the involved ligament. A prime purpose of friction in the acute stage is to aid in early ligamentous healing. Friction aids in the healing by providing the mechanical stimuli necessary to stress the random cell deposition in the early remodeling phase of the inflammatory response. Most authorities today stress the importance of early motion in order to prevent scar tissue and adhesions. The MCL can only move if the tibia and femur moves under it; and the patient, in the early stages, is unable to fully flex or extend his knee. Frictioning the MCL of the knee while it is in its most flexed and extended position (immediately after it is injured, and daily for the first week) moves the ligament on the bone since the bone cannot move beneath the ligament. Of course ice, compression, exercises, and a knee immobilizer and rehabilitation are absolutely necessary. The use of friction massage may be the reason why a patient gets back to his activity sooner and does not suffer with future exacerbations due to adhesions. Know any DCs treating the Buffalo Bills?

References

1. Zarins, B.; Boyle, J. Knee Ligament Injuries. In: Nicholas, J.A.; Hershman, E.B.: The Lower Extremity and Spine in Sports Medicine. St. Louis, MO. Mosby 1986; 1:929-982.
2. Hammer, W.I. Functional Soft Tissue Examination and Treatment by Manual Methods: The Extremities. Gaithersburg, Maryland, Aspen 1991.
3. Clancy, W.G. Jr. Evaluation of Acute Knee Injuries. In: Finerman G. ed. Symposium on Sports Medicine: The Knee. St. Louis, Mo. Mosby 1986.
4. Noyes, F.R.; Grood, E.S. Diagnosis of Knee Ligament Injuries: Clinical Concepts. In: Reagin, J. ed. The Crucial Ligaments. New York. Churchill Livingstone 1987.

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Editor's Note:

Dr. Hammer will conduct his next soft tissue seminar on March 23-24, in Boston, Massachusetts. You may call 1-800-327-2289 to register.

Dr. Hammer's new book, *Functional Soft Tissue Examination and Treatment by Manual Methods: The Extremities*, is available. Please see the Preferred Reading and Viewing list on page xx to order your copy.

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