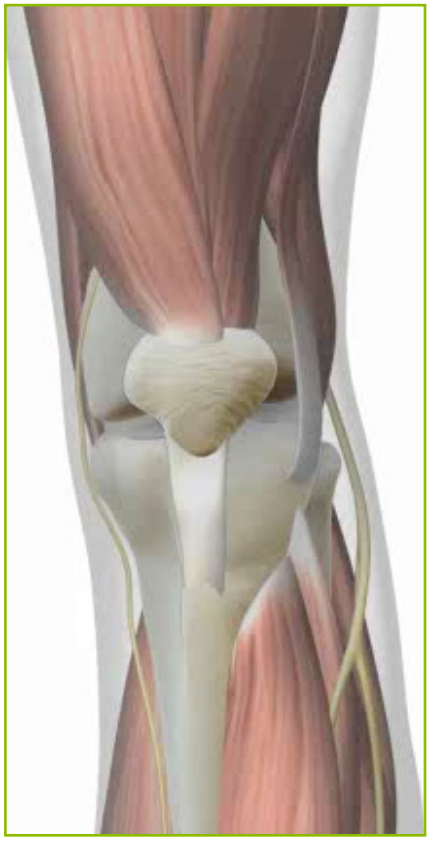
CASE SUMMARY

Kees Chiropractic in Franklin, TN
Ross Kees, DC

Patient Symptoms: 18 year-old male with right knee pain in the musculo-tendinous junction and tendinous insertion of rectus femoris. Symptoms began during a baseball game on 2/19/2018 (patient is the catcher on his high school team). Pain was the worst when he would try standing up from his squatting position. As the week progressed, the pain intensity decreased from 6-7/10 (VAS) to 4-5/10, mainly with squatting/lunging movements.



Medical History: Past/current medical history is quite unremarkable; mainly dealing with minor musculoskeletal injuries as a result of high level athletics and overuse.

Initial Assessment:

AROM: Right knee flexion -10 degrees from normal, all others WNL and symmetrical

PROM: Right knee flexion -5 degrees from normal, all others WNL and symmetrical.

MSR: WNL and symmetrical.

Deep Squat: Visual discomfort in the eccentric phase with pain during initial concentric phase. The patient was unable to go below 90 degrees of knee flexion due to pain.

Palpation: Point tenderness noted at musculotendinous junction and tendinous insertion of rectus femoris. Hypertension (+1/4) of rectus femoris muscle body.

No evidence of ecchymosis or swelling.

Initial Diagnosis: Strain of distal tendon of rectus femoris as a direct result of an acute increase in intensity, frequency, and volume of lower body resistance training, which began 2 weeks prior.

Laser Treatment:

- **Treatment Region:** Distal musculotendinous junction and insertion of rectus femoris
- **Treatment Frequency:** 2 treatments per week for 1 week, then 1 treatment per week for 4 weeks
- **Treatment Attachment:** Large massage ball
- **Power Setting:** 15 W
- **Dosage:** 5,200 J/cm^2
- **Treatment Area Size:** 400 cm^2 (200 cm^2 x 2)
- **Treatment Time:** 2 min 53 sec x 2

Other Treatment: After laser therapy, instrument assisted soft tissue mobilization was performed on distal musculotendinous junction and insertion of rectus femoris, with active knee flexion/extension. Isometric contraction of quadriceps muscles: 5 x 5 seconds.

Comments: Following treatment, the patient noted immediate relief of symptoms (1/10 VAS). Reassessment of deep squat revealed the patient was able to achieve a "below parallel" squat position and rise out of it with no pain.

As it would appear during clinical evaluation following laser therapy, the patient expressed an improvement in perceived functionality and a decrease in perceived pain with movement. Having a tool that allows us to provide the patient with a "less threatening" environment (one in which they experience less pain) allows us to place the affected tissues/joints into normal physiological positions which were restricted in their prior state. When the patient's perception of pain is decreased we are able to drive adaptation processes quicker due to an earlier prescription of resistance-based rehabilitation exercises [1,2], when compared to those with a similar diagnosis who did not receive laser therapy.

In the case of this patient, he is an elite high school baseball player with a full-ride scholarship to play collegiate division 1 baseball, having the ability to heal (within safe parameters) quicker is crucial for his ability to properly perform at his position.

PATIENT RESPONSE

"I was excited starting my baseball season this year, but worked out in the weight room and practiced way too much on my knee the first week, causing severe pain from over-usage. I called Dr. Kees and he got me right in and laser treated me as well and scraped and taped me. I went from not being able to squat without pain to catching in a scrimmage in less than a week, pain-free."

References:

1. Kongsgaard, M., Kovanen, V., & Aagaard, P. (2009). Corticosteroid Injections, Eccentric Decline Squat Training and Heavy Slow Resistance Training in Patellar Tendinopathy. Scand J Med Sci Sports, 19, 790-802. doi:10.1111/j.1600-0838.2009.00949.x

2. Fibril Morphology and Tendon Mechanical Properties in Patellar Tendinopathy: Effects of Heavy Slow Resistance Training. Mads Kongsgaard, PhD, , Klaus Qvortrup, MD, PhD, Jytte Larsen, PhD, Per Aagaard, PhD, Simon Doessing, MD, PhD, Philip Hansen, MD, Michael Kjaer, MD, DSc, S. Peter Magnusson, DSc. The American Journal of Sports Medicine Vol 38, Issue 4, pp. 749 - 756. First Published August 30, 2017. https://doi.org/10.1177/0363546509350915