Chiropractic Management of Sports-Related Tendinopathy

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Tendinopathy is increasing in prevalence and accounts for a substantial percentage of sports injuries. Despite the magnitude of the disorder, research on chiropractic treatment is limited.

The following is a single case presentation of a 26-year-old female with reported knee pain following a box-jump session at a local gym. Prior to initiating treatment, I conducted a Medline search on "chiropractic," "jumper’s knee" and "tendinopathy."

Case Presentation

This particular case involved a former long-distance runner and recent local gym trainee who had undergone a left arthroscopic evaluation six years earlier due to a fall, with a negative outcome but persistent, intermittent knee symptoms ever since. Symptoms included a dull ache and subjective weakness in the affected extremity, particularly after performing the jumping exercise.

In the previous three weeks, she had been increasing her sport regimen extensively in a local gym under the guidance of a trainer, performing seated box jumps (36-54 inches); and subsequently experienced a return of anterior knee pain in the affected leg (VAS 6/10).

tendinopathy - Copyright à Stock Photo / Register Mark Active and passive range-of-motion tests elicited pain in the anterolateral left knee, particularly on weight-bearing, and aggravated by knee flexion. Radiological evaluation of the knee did not appear clinically indicated due to absent Ottawa knee signs and orthopedic evaluation clear of impingement, compression and instability findings. Furthermore, there was no crepitus or significant functional loss.

However, X-ray of the knee was obtained because of her previous arthroscopy and recent localized soft-tissue swelling, recorded as a normal limited series on a chiropractic radiologist over-read.

Findings of restrictive joint dysfunctions helped guide the choice of chiropractic treatment. Interventions consisted of high-velocity, low-amplitude manipulations targeted toward the left hip, left knee, and lumbar and sacroiliac joints; copious icing of the hypomobility pre- and post-manipulation; and soft-tissue work on the fasciae fibrosis between the knee joint complexes, which permitted the patient to fully flex her left knee
while bearing weight.

On the third visit, immediate following a training session for another sport, the patient perceived an "overworked" left extremity sensation; she was re-examined and a similar course of chiropractic treatment was employed.

Contact with her trainer commenced with a brief discussion of lower extremity flexibility and eccentric exercises, with a temporary three- to six-week complete avoidance of vertical box jumps. It was further recommended upon release to sport that the maximum box jump height be reduced to 20 inches, three sets of 10 reps, for no more than three weeks of consecutive training.

Upon completion of eight additional treatments over five weeks, the patient became completely symptom-free (VAS 0/10). Routine follow-up was completed at two months and verified that the patient remained asymptomatic.

**Discussion**

Tendinopathy is a clinical syndrome characterized by a combination of pain, diffuse or localized swelling and/or impaired performance. Repetitive exposure seems to be associated with increased risk of injury. The tendon insertion and bursa surrounding the tendon are common sites of classical inflammation as a response to repetitive stress, because of their greater density of blood vessels and nerves.

Because of our expertise, it would appear chiropractors are well-positioned to treat athletic tendinopathy injuries. Even so, little research has been conducted to examine the prevalence of chiropractic care in the treatment of sport-related injuries. That said, recent literature regarding the various mechanisms of spinal manipulative therapy, and how it indirectly affects athlete sport performance with respect to muscle strength, inhibition-activation, and motor training, offers some promising theories for the profession.2

An early study by Shambaugh examined the effects of chiropractic adjustment using toggle recoil on the muscles of the lower spine, recording significant electrical changes in these muscles following an adjustment.3 Another study at Palmer sought to examine the effect of spinal manipulation on electromyography activity in areas of localized tight muscles of the low back. Surface EMG activity was collected from 16 participants equally divided into two groups. Each received a different type of spinal manipulation (e.g., one group received a diversified protocol). The study demonstrated a reduction in resting EMG levels in at least some patients with low back pain and tight paraspinal muscles.4
Perhaps Miners and deGraauw summarized it best when they related the difficulty encountered within the chiropractic literature inherent to the investigation of what constitutes a "chiropractic treatment." They compiled baseline data in order to identify the difficulty and develop protocols regarding the treatment practices and therapeutic outcomes that fellows of the Royal College of Chiropractic Sports Sciences – Canada [RCCSS(C)] strive for when treating athletes.

Interestingly, their data revealed that among those surveyed, 81 percent felt chiropractic care was important for all athletes. Moreover, 100 percent opined that chiropractic treatment for athletes included spinal and extremity joint manipulation / mobilization, soft-tissue therapy and professional referrals. Further, 97 percent included exercise and rehab prescription, and lifestyle counseling.  

The lower extremity complex includes many joints, of which spinal assessment becomes imperative, and all of which can become hypomobile independently or as a group. Muscle inhibition, i.e., the inability to fully activate a muscle, has been observed following joint pathologies and in low back pain conditions. This case of knee tendinopathy corrected with chiropractic manipulation (extremity and spinal) coupled with soft-tissue therapy is presented to provoke the consideration of dysfunctional lower extremity joint hypomobility coupled with a spinal kinetic dysfunction.

Before assuming the presence of degenerative / chronic sport disorders requiring surgical consult, chiropractors are suggested to assess the specific joint mobility of spinal and lower extremity joints, and provide effective chiropractic treatment if hypomobility and kinematic dysfunction are present. Finally, it is suggested that the "chiropractic treatment" intervention and outcome be more fully defined within the scientific literature.

**Key Considerations**

The recommended chiropractic treatment strategies for tendinopathy vary. Chiropractic treatment aimed at specific correction of the spinal and lower extremity kinematic chain is important in helping return an athlete to their sport, as well as in defining our research approach.

Exercise and soft-tissue treatment should also be the basis of tendinopathy treatment. To date, slow strength training, specifically eccentric, is effective for knee tendinopathy. Removal of the athlete from certain sport activities that exacerbate any existing condition should be standard and include investigation into the source of pain.
Exercise management based upon enhancing tendon repair and eccentric loading may result in the tendon’s resistance to injury. Soft-tissue management also may result in faster recovery and aid in reducing the adhesive effects that often accompany soft-tissue injury.

References


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