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Erin Pavick

Youngstown State University, erin.pavick95@gmail.com

Ethan Solger

Youngstown State University

John Stefancin

University Orthopedics

Morgan C. Bagley

Youngstown State University

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Achilles Tendon Rupture in NCAA Division I Football Athlete

Erin Pavick, MAT*; Ethan Solger, MEd, AT, ATC*; John Stefancin, MD‡; Morgan C. Bagley, PhD, AT, ATC*

*Youngstown State University Kinesiology and Sport Science; ‡University Orthopedics

BACKGROUND

A 22yr black male collegiate football player presented to the athletic training room unable to bear weight on his left leg. He was doing resistance band running on the field and felt a “pop” in the posterior aspect of the ankle. During initial evaluation all distal pulses and sensations were present. There was tenderness to palpation at the myotendinous junction on the distal gastrocnemius and Achilles tendon. When compared bilaterally, the Achilles tendon felt soft and “mushy”. The Thompson test was positive with minimal movement noted in addition to pain during active plantar and dorsiflexion. Significant pain with passive terminal dorsiflexion was noted. An MRI was ordered which confirmed a grade III Achilles tendon tear of the left leg. Surgery was recommended to repair the tendon. Ecchymosis was present on the medial and lateral aspect of the ankle before surgery.

DIFFERENTIAL DIAGNOSIS

Achilles tendon strain, Achilles tendon rupture. **Treatment** Post-surgery the splint was removed and the area was casted with no signs of infection. The cast was removed and the patient was fitted for a walking boot with four heel wedges. A heel wedge was removed every two weeks. Patient reported Achilles tendon tightness. Rehabilitation started three days after surgery with toe flexion/extension exercises, long arc quad (LAQ), SL hamstring curls, 4-way hip, and clamshells with body weight. Blood flow restriction therapy was done 3-4 times per week with traditional exercises done on opposing days. The workload was increased as the patient progressed. After 13 days the initial exercises

were done with blood flow restriction (BFR). The patient started walking in a tennis shoe at home and in the athletic training room but was instructed to wear the boot around campus after 11 weeks post-operation. The patient complained of a small scab on the proximal aspect of his incision with no drainage or redness which was believed to be a suture backing itself out. The patient began walking on the Alter-G treadmill. Success was monitored by range of motion, strength, and girth measurements. At four months post-operation the right calf girth measured 16.75 inches and the injured left calf measured 16 inches. The left calf girth was measured again and recorded at 16.25 inches. That is an increase of 0.25 inches in two weeks. When compared bilaterally there is still a difference of 0.5 inches. Without girth measurements prior to injury it is hard to know if the two calves are symmetrical. It is still not able to be said whether or not BFR training has increased the rehabilitation of this Achilles tendon rupture.

UNIQUENESS

The mechanism of injury of pushing off a weight bearing foot is fairly typical for an Achilles tendon rupture. However, rehabilitation with BFR has not been studied in depth.

CONCLUSION

The football player suffered a grade III Achilles tendon rupture during football season. After ten months he made a complete return to play with his rehabilitation being strongly based on BFR.

KEY WORDS: *Achilles Tendon Rupture, Blood Flow Restriction Therapy*