



Achilles tendon Epidemic among Elite Ethiopian Athletes

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Abstract

The purpose of this study was to investigate the cause/s of Achilles tendon injury among elite Ethiopian middle and long distance athletes. The subjects of the study are 11{3 female and 8 male} athletes age $\bar{x}=24.63$, all reported to our center complaining Achilles tendon pain. Assessment card was used to carefully register the subjective and the objective findings. Different therapeutic procedures, such as massage{manual and machine}, paraffin wax, American plaster, etc was used. Most of them recovered from their pain and demonstrated full range of motion. The most probable cause is found to be training terrain and poor coaching. It can be concluded that coaches should give due attention while training on rough and tough trainees (hilly, ups and downs).

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Preface

This study was conducted to help track coaches in minimizing the risk of sport specific injuries-Achilles tendon injuries. It has good information's about the nature of the injury, the mechanism of injury, methods of training to help Achilles tendon injury minimize.

I believe that this research, which has its bases on rehabilitation of the needy, can contribute its part to create timely awareness for coaches and athletes in Ethiopia and elsewhere.

Training programs, methods, fields, terrains, etc, should consider the environment of the locality, its proper to think/read globally and to act locally. The finding of this research was presented to track coaches on a training program sponsored by Ethiopian National Olympic Committee on April 2006.

Introduction

During my stay in Ethiopian athletics federation (1997—2002) as a general secretary, I had a chance to know more about athletes and athletics induced injuries.

It was during this time athletes were reporting injuries, and hence lost a number of training

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sessions frequently. Among the many injuries reported it was Achilles tendon most frequently reported.

I had direct contact because of my profession-physiotherapy. I decided to carefully handle the

case to find out the cause/s, to help the prevention process if possible, if not to minimize the prevalence. Degree of pain was registered in a five scale, 0=no pain, 4= severe pain, and the range of motion was evaluated subjectively as full, partially limited. limited. Range of Motion.

Methods

The procedure started in carefully registering the, personal data, subjective reports of athletes, including the duration of injury, the possible noticed cause, previous injury, and medication taken

Objective findings are taken while the athlete tries to move the foot in weigh free position- sitting in leg cross position, the malleoli medialis and lateralis and its alignments observed. manual muscle testing results were registered (Yanda 1959).

The method used in collecting the required data is subjective in supporting this Langy (1990), Blake and Ferguson (1992), Baggett and Young(1993), stated the nature of measurement, “Even if we use high tech instruments measurement of the human body



segments is not without error” as coated in Beekman et al (1985).

Table 1- Demographic Distribution of the Subjects

Athlete	Age in yrs	Sex	Findings	Occurrence
A	22	male	Achilles Tendon pain	Re-occurred 3 times
B	32	male	Achilles Tendon pain	Re-occurred 2 times
C	32	male	Achilles tendon pain	For the first time
D	30	male	Achilles Tendon pain And calf	For the first time
E	26	male	muscle pain Achilles Tendon pain	Re-occurred many times
F	24	male	Achilles Tendon pain	For the first time
G	22	male	Achilles Tendon pain	For the first time
H	21	female	Achilles Tendon pain	Re-occurred 2 times
I	20	female	Achilles Tendon pain	For the first time
J	19	female	Achilles Tendon pain	For the first time
K	22	male	Achilles Tendon pain	for the first time

The degree of pain can be measured using different methods, to be stated are, the visual analogue scale (VAS) by Von Korff et al, (1993), the numerical pain scale (NPS),by

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Ddownie et al, Von Korff et al, (1992), pain questionnaire by Melzack (1997). Accordingly static and dynamic function are sufficient (in Lang et al 1997). Minkowsky and Minkowsky,(1996) stated that, if the history and presenting signs or complaints point to the ankle joint ,a brief clinical review of the patients active and passive movements, static and dynamic functions are sufficient to evaluate the case. Alaranta et, al. showed that low tech tests are reliable and valid. This study registered pain condition at the beginning of every rehabilitation session as sever, mild, or, no pain.

As it is stated in several sport medicine and related fields, injuries in the ankle joint can lead to poor mechanics of the foot and as the result to the total disturbance of the whole body mechanics.

The range of motion of the ankle joint is dominant in the sagittal plane. Its angle and direction varies with position of the body, figures from 13 degrees-to-over 30 degrees externally have been cited.

Testing position (adapted from Cole et, al.) Grades 5, 4, 3-sitting the knee flexed over the table or prone position with the knee flexed 90 degrees. Résistance, when possible, was applied to the medial surface and ball of the

foot in the direction of dorsiflexion and eversion.

Grades 2,1,0, are registered in supine or half lying, with the knee slightly flexed, while the ankle is in a plantar flexed, and the fore foot inverted.

Results

1. The ages of the subjects ranged from 19 – 32 ($x=24.63$ years)
- 2.50% of the subjects reported Achilles tendon injuries for more than one time.
3. The possible cause/s of the injury, as reported by the athletes and speculated by the observer, varies a lot. Some even cannot recall when, how, they got injured. However mountain, up and down hill running, seems the cause of the problem for 40%ofthe subjects.
4. The results from visual observation showed there is discoloration at the site of the injury in all cases.
5. Manual muscle testing revealed a deficient in muscle strength, which may be the effect of the pain not necessary from calf muscle weakness.
6. Reduced range of motion is also observed.



7. Subjective evaluation of pain is severe in most of the subjects.

Discussion

This study has no intention to demonstrate the efficacy of a treatment modality, because it seems impossible to control other intervention for rehabilitation for these top world class athletes. The study was designed to help/teach the subjects and their coaches about the possible cause/s of the injury and at

the mean time help them in the rehabilitation process.

The results from observation and question and answer show that all athletes are training in hilly terrain and use the ball of the foot for weight bearing. The timing of running on hilly area was found to be pre-season, which for many can be conditioning time and weight training (up-hill running is by default weight training) is not the proper training at the beginning of the season.

Reference:

- Appenzeller and Atkinson: (1984) sports med, training injuries. Baltimore.
Cerney J (1963) Athletic injuries. Thomas spring Field.
Cole et al (1988):Muscles in action.Longman group.UK.
IOC sports Medicine Manual (2000)
Langy, Volepe and Wessnick(1997) Static Biomechanical Evaluation of the foot and lower limbs. Vol 2 #2 may,pp 58.
Peterson and Lars (1983): Sports Injuries. Their prevention and Treatment.
Thompson and Floyd (1994) Manual and structural kinesiology.12th ed. Mosby
Roy S :(1983) Sports Medicine. Prevention, evaluation, Management and Rehabilitation, Prentice Hall.
Yanda V. (1959) Manuel Muscle Test (Bulgarian Ed).Sofia.

