Spor Hekimliği Dergisi
Cilt: 42, S. 1-7, 2007

DEEP VEIN THROMBOSIS AND THE ATHLETE: A CASE STUDY‡

Y. KAPLAN*

SUMMARY

Deep vein thrombosis (DVT) may occur in athletes due to trauma or other non-related causes. Correct diagnosis is important, as DVT in athletes may have fatal consequences. It places the athlete at risk for pulmonary embolism (PE), especially in cases involving the proximal deep veins of the lower extremity, recurrent thrombosis and post-phlebitic syndrome. A case involving a football player 45 years of age, suspected of a hamstring tear, is presented. Symptomatic treatment aggravated the condition, and pain was persistent upon plantar flexion. DVT was diagnosed using ultrasonography. He had to interrupt athletic activity and received anti-coagulant therapy for four months, for full recovery.

Key words: Deep vein thrombosis, football, exercise

ÖZET

SPORCUDA DERİN VE TROMBOZU: OLGU SUNUMU

Sporcularda travma veya başka nedenler sonucu derin ven trombozu oluşabilir. Yaşamı tehdit edebileceği için doğru tanı önem taşır. Özellikle alt ekstremitenin proksimal derin venleriyle ilişkili olgularda, tekrarlayan trombozda ve post-flebitik sendromda pulmoner emboli riski yükektir. Kas yaralanması şüphesi bulunan 45 yaşındaki bir futbolcu olgusu ele alınmaktadır. Sistematik sağaltım durumu kötüleştirmiş, plantar fleksiyonda ağrı devam etmiştir. Ultrasonografik olarak derin ven trombozu tanısı konan olgu, sportif aktivitesine ara verdirilip dört ay süreyle antikoagülan sağaltımı uygulanarak sağlığına kavuşturuldu.

Anahtar sözcükler: *Derin ven trombozu, futbol, egzersiz*

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‡ Presented at the VIth World Congress on Science and Football, January 16-20, 2007, Antalya, Türkiye

* Jerusalem Sports Medicine Institute, Lerner Sports Center, Hebrew University of Jerusalem, Mount Scopus, Jerusalem, Israel

INTRODUCTION

There is lack of scientific literature concerning the return to sport protocol following deep vein thrombosis (DVT). Even though trauma is one of the most common causes of lower extremity DVT, athletes may present with DVT due to non-related causes. Incorrectly diagnosed DVT in athletes may have fatal consequences. A DVT places the sportsperson at risk for pulmonary embolism (PE), recurrent thrombosis and post-phlebitic syndrome. Up to 50% of patients with DVT involving the proximal deep veins of the lower extremity develop PE. Because the mortality rate for this condition is as high as 8% even with intervention, PE poses the greatest concern to the physical therapist and sports physician during the initial management of DVT (5,33).

CASE PRESENTATION

A 45 year old male football player presented to the clinic requesting treatment of "hamstring tear in his right leg". He had suffered numerous lower limb muscle injuries over the years. He mentioned that he had called a friend, a physical therapist who advised him to follow a daily program consisting of local heat on the painful area, and a stretching regime. His condition did not improve, and he decided to get a second opinion. Following anamnesis, it became evident that he had felt a sharp, local pain in his upper-middle calf muscle region while standing on his toes reaching for his bags after prolonged sitting on a nine-hour international air flight, the week before. Subjective aggravating factors included walking, especially on his toes. He was constantly reminded of the discomfort while sitting with his knee in flexion.

On examination it was observed that his lumbar spine and hips were symptom-free on all quick and special tests, walking on toes or resisted plantar flexion immediately exacerbated his symptoms, while walking on heels and plantar dorsiflexion of the ankle were pain free. No edema or erythema were present around the painful area. There was exquisite pin-point tenderness locally between the proximal heads of the gastrocnemius muscle.

Even though the athlete insisted that he was suffering from a muscular injury, the author realized the presence of four separate

examination findings that were not consistent with a classical muscle tear: the "injury" occurred on standing up after sitting for many hours, passive dorsiflexion of the ankle was pain-free, there was constant discomfort whilst sitting, the symptoms were not improving, and the exact anatomical location of the pain was not exactly on either of the heads of the gastrocnemius muscle, but rather in the anatomical junction that lies between them.

In light of the above, the author decided to refer the patient back to his personal physician, with a recommendation to perform a Doppler ultrasonography of the painful leg. The physician directed him to a local clinic, where a deep vein thrombosis was diagnosed by means of duplex ultrasonography. The patient was immediately hospitalized and oral anti-coagulants were applied. He was discharged symptom-free two days later, with a recommendation to continue anti-coagulant therapy for four months. He was instructed by his physician not to return to sport while on anti-coagulant therapy or until the clot was no longer visible on ultrasonic evaluation. Three weeks later, following weekly ultrasound evaluations which confirmed that the clot was still evident, the player decided to return to full sporting activity. He further decided to interrupt his anti-coagulant medication three days prior to each game. Despite the advice of his physician and physical therapist, who explained that this was not the accepted medical protocol, the athlete insisted on continuing his contact-sport activity.

DISCUSSION

Literature about when an athlete may return to sporting activity following a DVT remains inconclusive at present. Most of the literature describes the incidence (5,11-13,15,17,21,24,31,35), pathology (3,7,9, 14,23,30,32,36) and medical treatment (6,10,12,16,18-20,22,25,27,28, 33,34).

The author found a reported case (1,29), where a 25 year-old triathlete returned to sport over a five week period, and started running in the sixth week. Another case study involving a traumatic DVT in a soccer player was described, with the player returning to contact sport a year later (8). Some evidence suggests that the incidence of a new PE does not increase in patients with uncomplicated DVT who are early mobilized (1).

The study reported by Aschwanden et al (4) suggests that there may be an increased risk of acute PE among patients with DVT and known PE when ambulation begins early. These patients require careful consideration before resuming ambulation. Data reported by Partsch and Blattler (26) suggest that early ambulation leads to more rapid resolution of pain and swelling associated with DVT. Therefore, it seems that in patients with DVT, who have not been diagnosed with PE, who are receiving appropriate anticoagulant therapy, and who do not have cardiopulmonary impairment, early ambulation may be considered.

CONCLUSION

Until more scientific evidence becomes available, physical therapists and sports physicians can only advise athletes who desire to return to sport following a DVT, about their treatment and risk of re-occurrence, for appropriate decisions to be made. From the present case study, there are numerous lessons to be learned that may aid the consulting physician or physical therapist when confronted in the clinical setting with a suspected DVT. Extreme caution must be taken giving medical advice by phone. DVT is a potentially life-threatening condition, and incorrect advice may lead to very unfortunate circumstances. A thorough anamnesis and physical examination should be conducted in all presenting cases, with a maximal effort to reach a clear, concise and accurate diagnosis. Findings that do not typically appear as soft tissue injuries should alert the examiner, especially when the history does not match the symptoms. There is inadequate evidence to advice patients regarding the initiation of vigorous or aggressive exercise. Until conclusive evidence becomes available, the appropriate time to resume ambulation should be left to the clinical judgment of the treating physician and physical therapist. The use of compression garments is reasonable, given that they were used in the successful trials (1,2,29). The subject warrants further study in large cohort studies.

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e-mail for correspondence: sportmed@zahav.net.il