

*The above three points, will be discussed and applied in the rehabilitation of the joint.*

### **7. REHABILITATION IN SPORTS TRAUMATISMS**

**Author: Prof. Dr. N. Teleki**

*The successfully injured athletes playing a variety of sports at varying levels of competition is possible now to see very frequent. In many cases of traumatic problems in sports medicine the results are more better than in habitually traumatology and the time necessary for the return to competition is surprisingly short. The explanations consist not in the fact that the young athletes have a very good compliance with the rehabilitation process and a very high capacity of recovery from the loss of functions after trauma, but also we must add the very important progress done in sports medicine in general and in particular in the rehabilitation of sports traumatisms.*

*The process of rehabilitation is sometime complex and the cooperation between a specialist in sports medicine, orthopedic surgeons and physiatrists can be essential. The concept of the multidisciplinary team in the rehabilitation process, and the role of the physiatrist is presented with some details about his opportunity for the diagnosis and treatment of sports - related injuries.*

*A second part presents the rehabilitation goals, the main pathophysiological processes of injury and healing, the potential sites of injury in specific structures (ligaments, tendons, bursae, muscles and fascia, cartilage, bone and nervous tissue).*

*The last part is destined to management and rehabilitation of sports - related injuries including the timing, the goals in every step of the program and the methodology of physical rehabilitation and finally - the return to play criteria.*

### **8. ULTRASONOGRAPHIC DIAGNOSES OF ACHILL TENDON LESIONS DURING RECREATION**

**Authors: Petar Smiljanic, Branislav Goldner, Zoran Mijovic**

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**Introduction:** ATL - are well known at professional sportsmen and in work related population which deal in sport.

The aim of the work: is to emphasize the importance of US - diagnoses as non invasion method in early discovering the injuries (partial, total, rupture, hematoma or soft issue swelling of AT, just like later manifestations calcificate tendon lesions in recreations).

**Material and methods:** 40 workers "recreations" from different professions (motor-hatches, miners, metallic workers etc.) aged: 20-50 years, ERC; 10-15 years have been examined.

Examined group engage in: running, volley-ball, hand-ball, basket-ball, after their working time.

**Results:** The most frequent changes in the AT are partial and total rupture: 80 %; hematoma with soft issue swelling 60 %; calcificats inside the tendon 10 %.

**Conclusion:** The ATL in recreatives had been discovered provided at 80 %, hematoma with the soft issue swelling 60 %.

US is more sensible than rendgenography (tenography) in early discovering of all ATL.

## **9. ULTRASONOGRAPHY OF MOST COMMON SPORTS INJURIES OF TENDONS**

**Authors:** R.Stevic, M.Dodic, B.Goldner, I.Lukac, V.Gotovac

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The purpose of this study is to evaluate the clinical usefulness of US in detection of tendon injuries in sport.

**Material and Method:** *Twenty-seven sportsmen with a history of tendon trauma during sports events were examined by ultrasound.*

*All examinations were performed by 7,5 MHz linear probe with a combination of a longitudinal and transversal scan.*

**Results:** *We found different lesions of tendons in 26 cases. Most common posttraumatic lesion detected by US was tendinitis (14 cases). Three types of tendinitis were found: two acute (patellar tendon), six nodular and six tendinitis calcarea. In two cases, tenosynovitis of Achilles tendon was detected. Other ten lesions corresponded to partial ruptures (four of Achilles tendon, three of patellar, two of quadriceps femurs tendon and one of rotator cuff). One fieldball player with a shoulder pain had normal appearing sonograms of both rotator cuffs.*

*US depiction of inner structure of tendons resulted in the diagnosis of focal abnormalities including partial ruptures, nodules and calcifications. Tenosynovitis was characterized by decreased echogenicity of the tendon and by anechoic peritenon fluid.*

**Conclusion:** *The prelevant pathologic finding of posttraumatic tendons lesions was tendinitis and partial rupture. US enables exact differentiation of these conditions and contribute to the diagnosis of broad range of tendons disorders.*

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## **10. ULTRASONOGRAPHY OF MUSCLE SPORTS INJURIES**

**Authors:** *R.Stevic, M.Dodic, J.Petrovic-Rajkovic, G.Rodic*

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*This paper presents the analysis of US characteristics of post-traumatic muscle lesions detected by sport injuries.*

**Material and Method:** US was performed in 51 sportsmen with both history and clinical evidence on muscles trauma. All examinations were performed by 7,5 MHz probe with a combination of longitudinal and transverse sonogram.

**Results:** Lower extremity muscle injuries were statistically significantly more frequent ( $p=0,001$ ), predominantly affecting the upper leg (73 %). Muscle injuries were most common manifested as a partial ruptures (78 %), to be followed by hematomas (13,7%) , edema (5,9 %) and ossifying myositis (2 %). The lesions were aver-agely sized: rupture 19,8 mm, hematoma 27 x 12 mm, edema 11 x 7 mm. As for echo structure, hypoechoic lesions were predominant ( $n=38$ ), among which recent muscle ruptures were the most frequent. Hyperechoic structure was detected in four managed muscle ruptures and ossifying myositis. Heteroechoic structure has two chronic relapsing ruptures and two cases of organized hematomas, while four recent hematomas had anechoic structure.

**Conclusion:** Due to its non-invasiveness simple and fast application, US is most common the only method used in diagnosis of traumatic lesions in sport.

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## **11.LATERAL EPICONDYLITIS OF THE ELBOW: THREE TREATMENTS PROTOCOLS, WHAT KIND OF THERAPY CAN WE TO CHOOSE ?**

**Authors:** Stergioulas,A., Dabos,J., Tripolitsioti, A., Soulas,D. and Gogos, G.

**Thessalia University, Department of Sports Sciences, Laboratory of Sports Physical Therapy**

### **Abstract**

Tennis elbow, lateral epicondylagia or lateral epicondilitis is one of the commonest lesions of the arm. An incidence of 1-3 % has been reported. Over 40 treatment regiments have been described for lateral epicondilitis.

*Aim of the study: to compare the effectiveness of three treatment protocols in lateral epicondylitis of the elbow.*

*Methods: 30 subjects suffering from tennis elbow participated in the study randomly divided in three equal groups. Group 1 was treated with GaAlAs laser ( $\lambda=820$  Nm). The probe was in close contact with each one of 6 application points for 30 sec/point. Group 2 treated with pulsed ultrasound at 1 MHz, and intensity  $1.5$  W/cm<sup>2</sup> for 5 minutes. After ultrasound, ice was put for five minutes. Group 3 treated with Iontophoresis by phoresor II.4 mg dexamethasone sodium phosphate (2ml) and 4 % lidocaine hydrochloride (2 ml) was administered via porous electrode. Pain by Visual analog scale (VAS) and grip strength were assessed prior to the treatment and at the end of ten treatment sessions.*

*Results: Both groups showed a decrease in pain intensity and an increase in grip strength after 10 treatments. A comparison between groups revealed that only in patients that has been treated with LLLT were statistically significant differences.*

*Conclusion: It is concluded that from three protocols, LLLT is the most effective treatment of tennis elbow.*

## **12. ARTHROSCOPIC TREATMENT OF MENISCAL LESIONS**

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**Athens Greece**

**Director Dr.D.Polyzois**

*The purpose of this paper is to study the final result, concerning the existing range of motion, muscle strength, the time of full recovery in patients with previous athletic activities and the incidence of arthritic changes in patients who underwent arthroscopy because of a meniscus lesion. We also evaluate the type of the existing meniscus lesion in the medial and lateral meniscus and the appropriate treatment for each lesion.*

*The clinical tests and their diagnostic accuracy for each type of meniscus lesion were also evaluated. The material was 80 knees with meniscus lesion which were diagnosed and treated arthroscopically. In 76 of them a type of partial meniscectomy was performed and in 4 the rupture of the meniscus was sutured. The Follow up was from 6 months up to 10 years.*

*The complications, as well the technical difficulties during arthroscopy were also studied and discussed and a specific reference is made in meniscus suturing concerning the indications and final results.*

### **13. THE USE OF SOFT LASERS IN TRAUMATIC INJURIES OF THE MUSCULOSKELETAL SYSTEM**

***Authors: Psillaki D., Theodosiu A., Bader A., Maragoudaki E., Ntabos I., Kontulakos P.***

***Thriassion Hospital Athens Greece, Department of Physical Medicine and Rehabilitation***

*In the last years the use of Soft Laser in Sports Medicine and Rehabilitation of athletic injuries that involve the musculoskeletal system, become more frequent.*

*In this study we try to describe our experience for the last two years, about the use of Soft Laser in traumatic injuries.*

*We analyze which is the source of Soft Laser how they act on the human body and which biologic reactions they cause in order to reduce the pain and assist the healing of the injured tissue.*

*We also cite the results we had in certain cases that were more than satisfactory.*

### **14. SPRAINS: THE MOST COMMON INJURIES IN GREEK RECREATIONAL ALPINE SKIERS**

***Authors: Gogos G., Stergioulas A., Tripolitsioti A., Dabos G. and Soulas D.***

***Thessalia University, Department of Sports Sciences***

### **Abstract**

#### **Introduction**

*In skiing the high velocities to which the unprotected human body is exposed and the unnatural lengthening of the foot by the ski-binding boot system generate large number of injuries. 30% of all skiing injuries is a result of the ski bindings that do not function properly.*

#### **Aim of the study**

*To record the skiing injuries in Greek recreational skiers in a controlled prospective trial.*

#### **Subjects-Methods**

*98 recreational Greek Alpine skiers were under close supervision during the period 1996-1997 in Vasilitsa, a popular ski resort, by the authors.*

#### **Results**

*A total of 24 injuries was recorded. 10 injuries were sprains (41.67%). The knee was the anatomical site that most sprains occurred. The injury rate was high: 23 per 1000 ski day.*

#### **Discussion**

*Anterior and posterior cruciate and the lateral ligaments are the tissue that stabilize the knee in different athletic abilities. Strength and endurance of thigh muscles play an important role to this function. These muscles can absorb kinetic energy during a variety of dynamic athletic activities, such as alpine skiing. Since skiing is a sport that is performed with a unique way, the knee joint sometimes can't resist compressive, torsional and compound forces, that lead to an injury. The results of our study demonstrated that the knee is the site where most sprains can occur in Greek recreational alpine skiers and are in accordance with other studies. The 24/1000 days rate is high because of documentation of less severe injuries that usually would go unreported in most surveys.*

#### **Conclusion**

*Sprains are the most common injuries in Greek recreational alpine skiers and the joint that is more vulnerable is the knee.*

## **15. CONSERVATIVE TREATMENT IN ATHLETES WITH ANTERIOR CRUCIATE LIGAMENT TEARS**

*Authors: Psillaki D., Ntabos J., Banter A., Kontulakos P.*

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*We examined 35 cases of athletes with knee injuries and participation of anterior cruciate ligaments partial tears.*

*Of the 35 athletes 29 were men and 6 were women, aged between 14 to 37 years, mainly football and basketball players.*

*As our cases were first and second degree's injuries, we treated them conservatively.*

*The evaluation procedure was consisted of:*

*a. Lachman test*

*b. Anterior drawers test*

*c. Pivot shift test*

*Our rehabilitation program lasted 12 weeks and was consisted of splinting, physical modalities, pharmaceutical agents, C.P.M., passive and active exercises.*

*At the end of rehabilitation program, our athletes returned to their athletic activities.*

*We reestimated them with the same functional special tests.*

*The analysis of the results showed that our conservative rehabilitation treatment was satisfactory enough and the majority of our athletes returned to their activities without facing any serious problem.*

## **16. REHABILITATION PROGRAM FOR ROTATOR CUFF INJURIES IN HAND-BALL ATHLETES**

*Authors: Ntabos J., Psillaki D., Kontulakos P.*

*Thriassion Hospital Athens Greece, Department of Physical Medicine and Rehabilitation*

*Purpose of this study was to evaluate the possibilities of rehabilitation of rotator injuries in hand-ball athletes.*

*We examined 17 hand-ball athletes aged between 17 and 29 years, with par rotator cuff tears. 12 of them were males and 5 females.*

*The diagnostic procedure was consisted of:*

- 1. Positive clinic signs and symptoms*
- 2. Positive diagnostic special tests*
- 3. Arthrography*
- 4. M.R.I. (when needed)*

*We followed a rehabilitation program in three phases:*

- 1. Acute phase*
- 2. Recovery phase*
- 3. Maintenance phase*

*We applied: Rest, N.SAIDs modalities C.P.M., passive and active exercises, P.N plyometrics and some special exercises.*

*Three months after the end of the program, our follow-up examination showed that of our athletes had no problem at all, 3 continued to have subjective disturbances have a new more serious injury, and 2 of them didn't appear to be examined.*

## **17. AVULSION OF THE TIBIAL TUBEROSITY IN THE ADOLESCENTS A REPORT OF TWO CASES**

**Authors: Ozenci AM M.D., Akyildiz FF, M.D., Aydin AT M.D.**

*Tibial tubercle avulsion fracture is considered as a relatively uncommon adolescent injury. This type of injuries occur mainly during sport activities and usually caused by sudden violent contraction of the quadriceps muscles, especially when an athlete jumps up as seen in basket-ball. We report two such cases, the first case was a 13 year old boy with a Ogden type III fracture and the second case was a 16 years old boy with a Ogden type III - B fracture of the tibial tuberosity. The second patient had also*