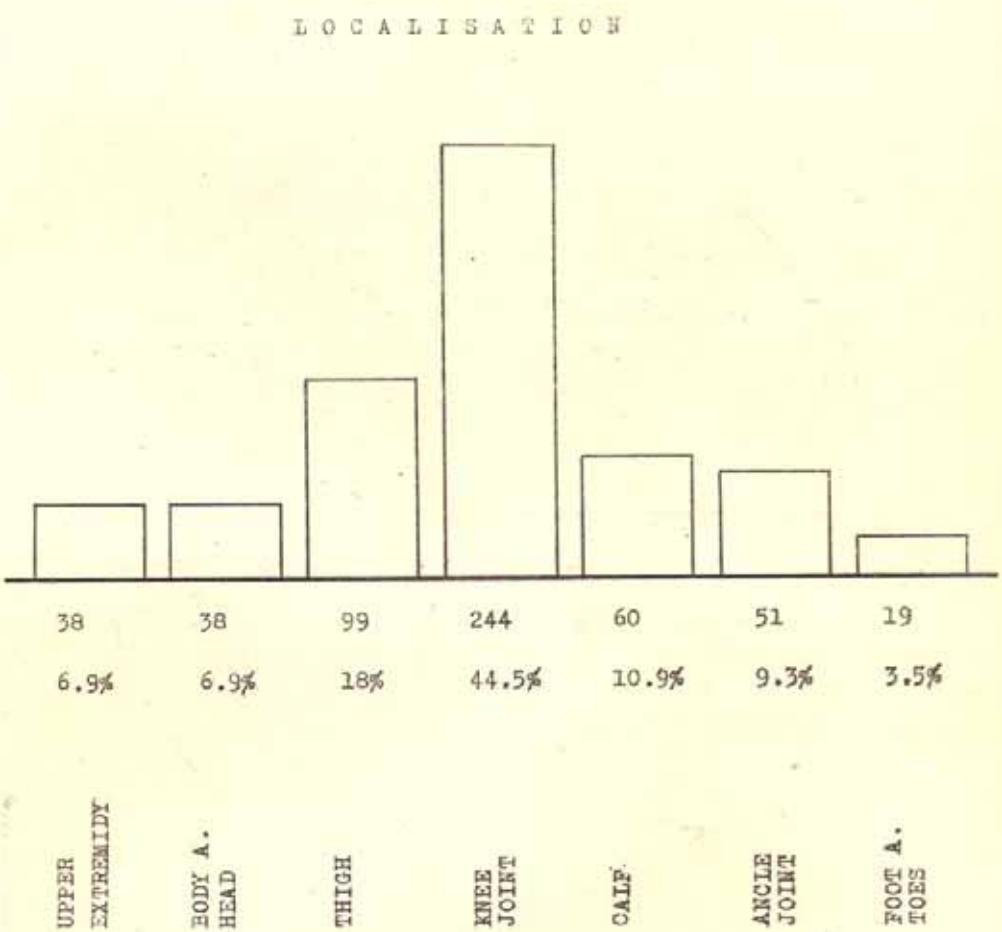
LOCALISATION
38
38
99
244
60
51
19
6.9%
6.9%
18%
44.5%
10.9%
9.3%
3.5%
UPPER EXTREMITY
BODY A. HEAD
THIGH
KNEE JOINT
CALF
ANCLE JOINT
FOOT A. TOES

Fig. 3.

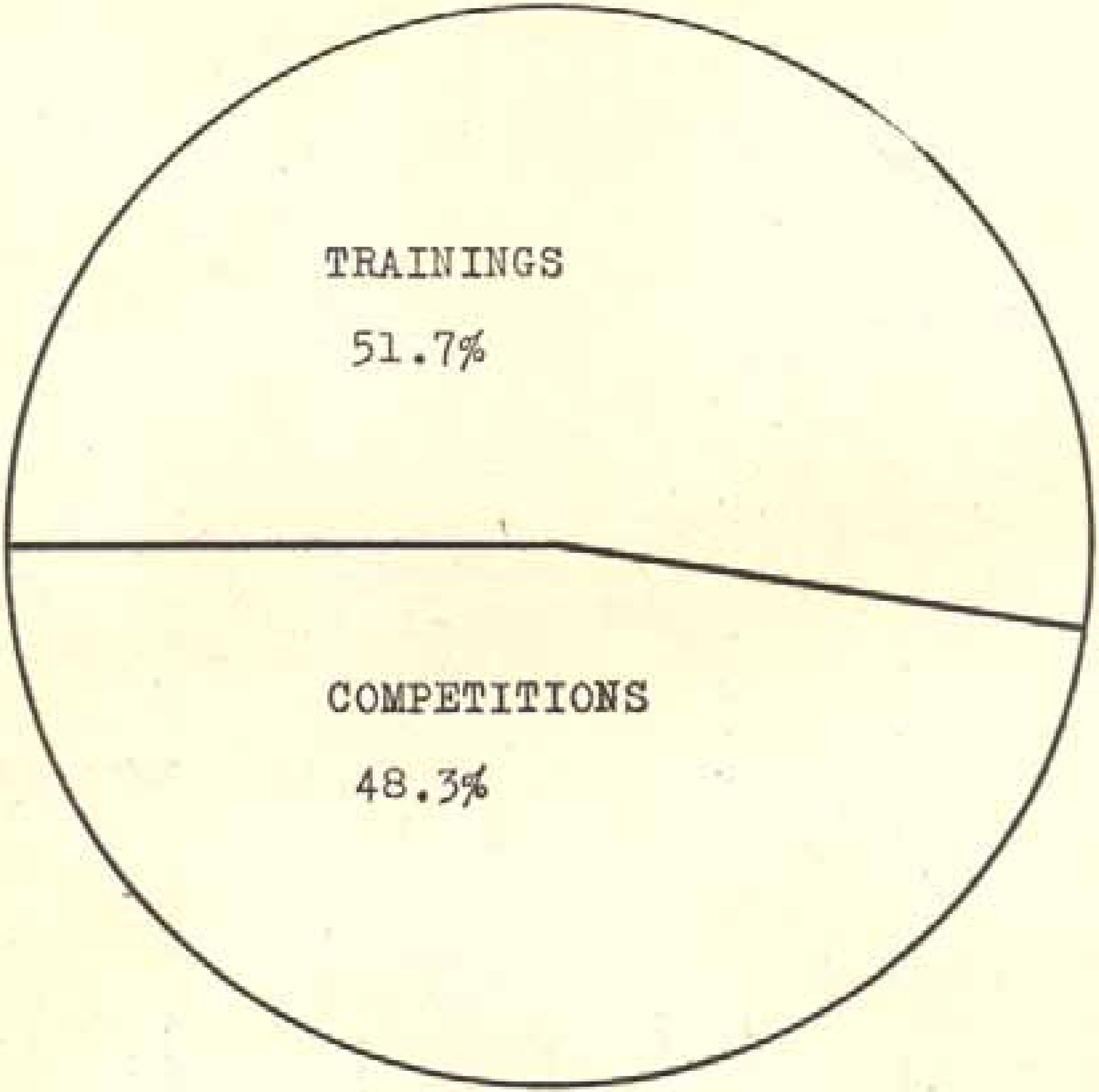

Fig. 4.

FAULTY EQUIPMENT
2%
FAULTY ORGANISATION
1.3%
INCORRECT MEDICAL CONTROL
2.2%
FAULTY TRAINING METHODS
51.7%
INFRINGEMENT THE GAME RULES
42.8%

Fig. 5.

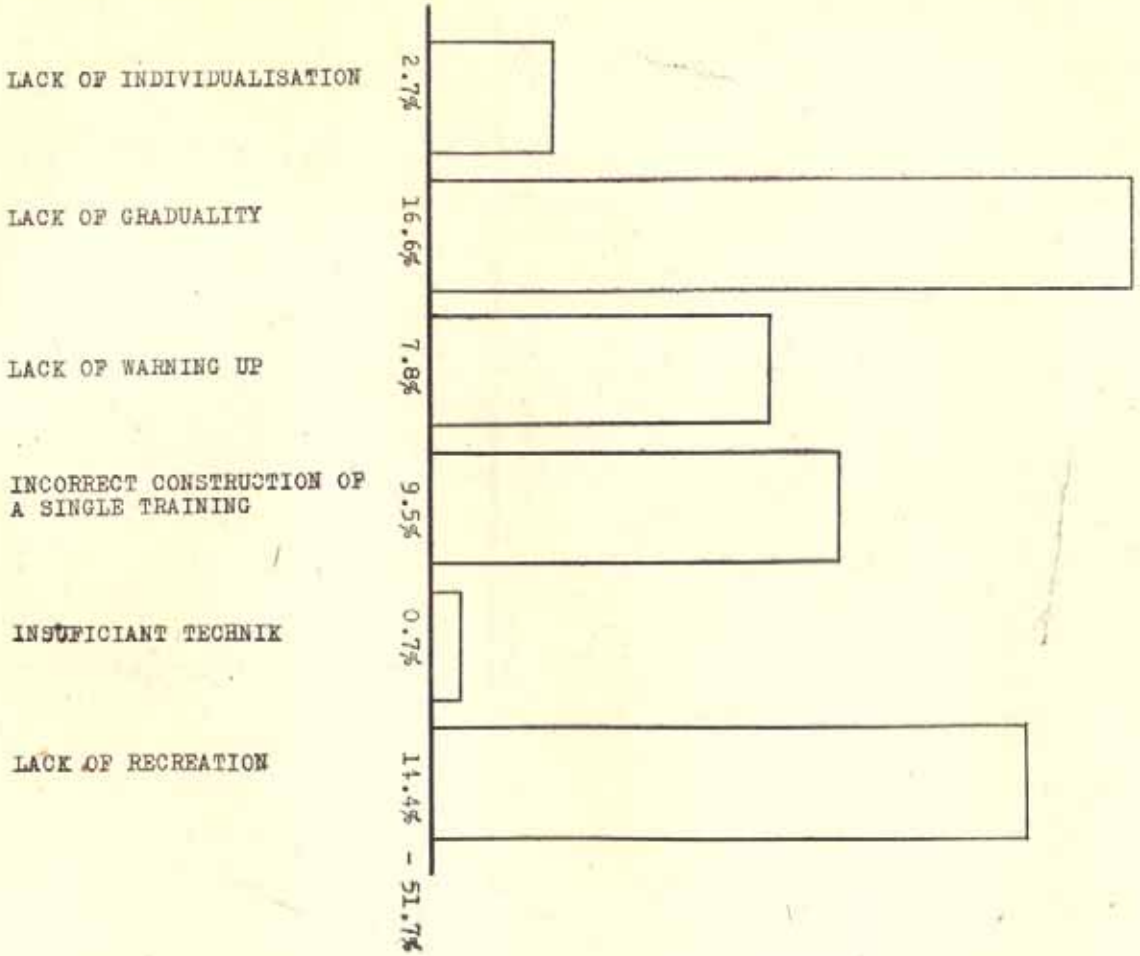
LACK OF INDIVIDUALISATION
2.7%
LACK OF GRADUALITY
16.6%
LACK OF WARMING UP
7.8%
INCORRECT CONSTRUCTION OF A SINGLE TRAINING
9.5%
INSUFICIANT TECHNIK
0.7%
LACK OF RECREATION
11.4%
51.7%

Fig. 6.

The Contribution Of The Knee Arthroscopy In The Study Of The Articular Cartilage Lesions In The Athletes

N. Antoniou* and N. Kounelis*

SUMMARY

In this paper we analyze cases in which arthroscopy of the knee joint was performed in athletes during the last two years.

All the arthroscopies were done with a Storz arthroscope (diameter 3.8 mm. and optical angle 30°). No complications were observed.

In certain injuries or diseases of the knee joint (chondral fractures, chondromalacia of the patella e.t.c.) which often clinically behave like lesions of the menisci and generally speaking in the study of the articular surfaces of the joint, we believe that the arthroscopy is the most important diagnostic procedure.

Nowadays arthroscopy, appears to be the most reliable way of getting through the diagnostic and therapeutic difficulties of the knee joint. With our increased knowledge regarding the findings during an arthroscopy inspection, we can now realize the value of this examination for the athletes.

Detailed clinical examination, radiological investigation and arthrography are not sufficient elements for the study and evaluation of the knee articular surfaces, so that arthroscopy becomes entirely necessary to get informations on the state of the cartilage. With the arthroscope we can see the joint directly and we believe that this is the best way to to microscopically have access to the pathology of the cartilage (Johnson, Leslie and Betley, Antoniou).

The purchase of the proper arthroscope was problematic for us. Manufac-

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tures of endoscopes all over the world have recently made several innovations in their instruments, innovations resul ting from the introduction of new optical systems (O'Connor, Eikelaar).

For two years now we have been using the Storz arthroscope, with Hopkins lens system, outside diameter 3.8 mm, and angle of vision 30°. The good technique and proper maneuvers during the examination greatly influence the final diagonstic result. We examine the knee in a methodical manner and we always follow the same steps.

At the beginning, we examine the knee joint and write the findings deriving thereform in a specialy sheet. We prefer general anaesthesia and sometimes local. .

We usally examine under general anaesthesia for two reasons: first because complete muscle relaxation is obtained permitting a good investigation of the joint and second any risk of patient movement while the instrument is in the back of the knee is eliminated. In the first arthoscopies we used a tourniquet, now we don't ordinarily use pneumatic tourniquet. The approach we are using routinely for the insertion of the arthroscope is the lateral infrapatellar (fig. 1). During arthroscopy we have a wide field of illumination in the joint from a cold light source and continous irrigation. The irrigation solution of saline maintains a current of irrigating fluid sufficient to wash away any blood or debris.

We always examine the whole knee joint in the following way : first the suprapatellar pouch and the posterior surface of the patella, then the medial compartment, the intercondylar notch and finally the lateral compartment (fig. 2, 3, 4 and 5).

If operation is not done, a bandage is applied and the patient may walk and be discharged one day after the examination.

All kness can undergo endoscopy. In case of hemarthrosis, we are faced with certain difficulties but with continuous irrigation the joint is sufficiently washed to allow good visualization.

Arthoscopy is a surgical intervention and, as such, it requires a clear indication. No other type of examination provides as much and as reliable information on the intraarticular structures of the knee joint (Polinz, O'Connor).

The main indications for the arthroscopy of the knee joint in athletes are:

a. Cartilage lesions. With suspected cartilaginous lesions this examination is certainly superior to all other diagnostic procedures. There are acute injuries (chondral fractures) and other diseases (chondromalacia of the patella etc.).

b. Meniscal tears With this technique we have answers to many questions concerning meniscal lesions.

c. Injuries to the ligaments - Generally an acute ligamentous lesion should be diagnosed by clinical examination. If the findings are uncertain, arthroscopy may help to find accompanying meniscal or cartilaginous injuries. The anterior cruciate ligament can be seen in almost every knee. For partial ruptures, which usually can not be recognised clinically, the arthroscopy is superior to all other investigations.

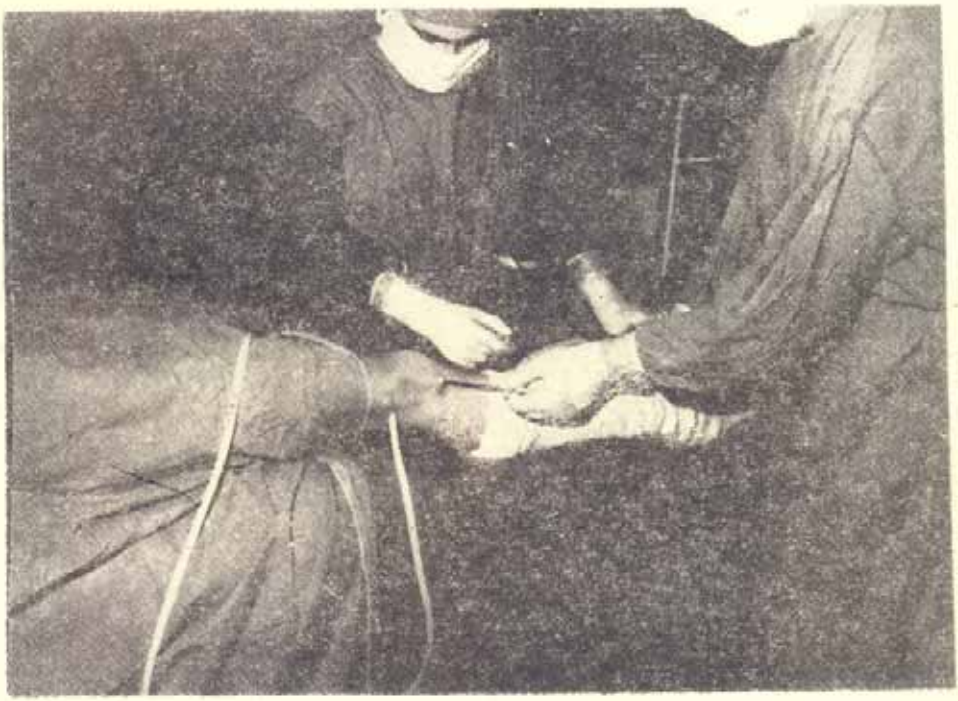


Fig. 1. : The approach we are using routinely for insertion of the arthroscope is the lateral infrapatellar.

d. Osteochondral fractures.

e. Arthoscopy is indicated when there is a knee pain of an uncertain origin after trauma, the «problem knee» (Glinz, Jackson and Dandy, Watanabe et al).

In this work, we will be dealing with the chronic cartilage diseases that is chondromalacia patellae, as well as with the acute injuries, such as chondral fractures. The differential diagnosis is very important since we all know that very often these injuries mimic meniscal lesions (Smillie, Haves and Nageswar, Eikelaar).

We start with **chondromalacia of the patella.** This is a common arthroscopic finding mostly seen in young individuals, athletes or not. However, very often, we do not pay due attention to its significance, especially of a patient with a history of a twisting injury to the knee and an effusion.

What chondromalacia is? A degenerative process of the articular cartilage of the patella, characterised by fibrillatinon, fissuring and eventually erosion (Smillie)

In our cases, the pathological changes were contrally located with larger extension to the medial facet.

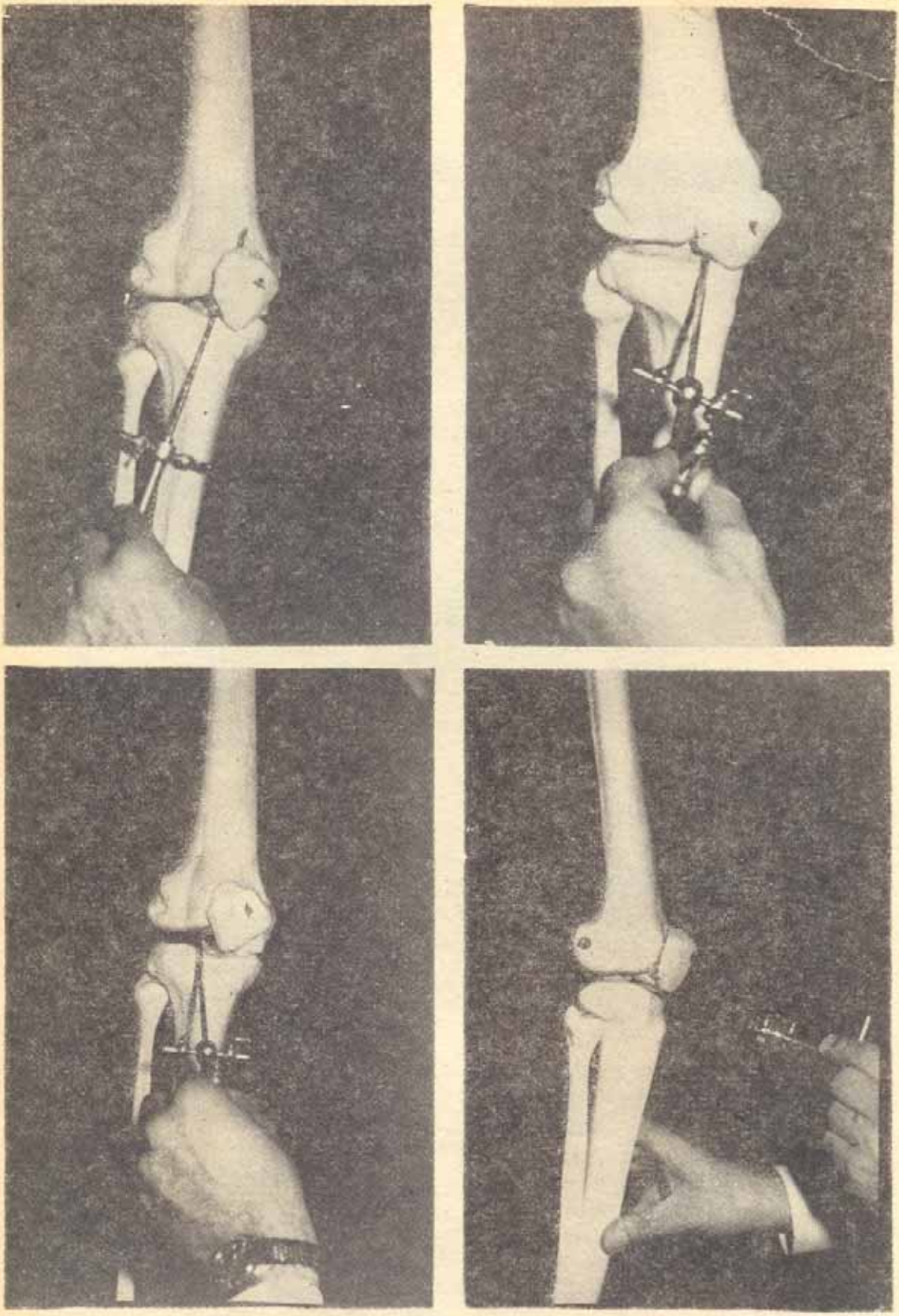


Fig. 2, 3, 4, 5. : Always we examine the whole knee joint: Suprapatellar pouch and the posterior surface of the patella, medial knee compartament, in Tercondylar notch and lateral knee compartment.

We observe that the symptoms of the disease, which are listed below, have an obvious similarity to those of meniscal tears:

— retropatellar pain, tenderness.
— joint swelling.
— giving way or instability.
— patelar crepitus.
— quadriceps wasting.
— (momentary) locking.

Pain and tenderness are the main symptoms. They are frequently found in the medial aspect of the joint and thus chondromalica can be easily confused with the lesions of the menisci.

The arthroscopic examination, especially for young athletes, is of great importance for two reasons: first, we pro tect our patients from unnecessary operations, i.e. removal of the meniscus and second, after the discovery of chondromalica the appropriata therapy is followed.

We must say that chondromalacia patellae possibly coexists with tear of the medial meniscus, as it happened in three of our cases. In such cases, we must explain to the patient that some postoperative complaints may occur despite the meniscectomy.

With arthroscopic examination we discover the position, the extension and the exact degree of the severity of the articular damage and thus We are able to decide about the proper way of treatment. We are also helped with this by classifying the cartilage degeneration in 4 degrees, as follows (Bots and Slooff):

ARTHROSCOPIC GRADING SYSTEM IN CHONSROMALACIA PATELLAE.

GRADE 0 : normal cartilage.

GRADE 1 : soft, swollen cartilage; fibrillation (localized in an area $\leq$ 1.5 cm).

GRADE 2 : extensive fibrillation, fissuring or fragmentation (localized $\leq$ 1.5 cm), or very limited initial erosion.

GRADE 3 : extensive fissuring or fragmentation, erosion to subchondral bone.

When the cartilage damage ranges from first to second degree, the treatment must always be conservative, including :

— exercise therapy,
— salicylate, analgestic and antiflammatory drugs etc.
— alteration of weight - bearing mechanics in patellofemoral joint (inside wedge on the sole of the shoe, valgus insole etc.).
— complete immobilisation and in particular use of a plaster cast is contraindicated (Smillie).

In the other degrees of chondromalacia, operation on the soft tissues or the bone is usually decided.

OUR CASES ARE SHOWN AT THE NEXT TABLE

5 patients (1-2 degree) —	conservative treatment.
3 patients (2-3 degree) —	operation on the soft tissues.
1 patient (3 degree) —	operation on the bone (excision of abnormal cartilage and drilling).

The arthroscopic examination is also necessary for other cartilage lesions such as **chondral fractures**, which are usually located in the femoral condyles or in the posterior surface of the patella. We often see these fractures in the athletes as a result of a direct injury of the knee or of combined forces torsion and compression.

The clinical signs are totally non - typical; pain and effusion, limitation of the knee extension, locking of the knee joint and sensation of giving way. The mechanism of injury and the examination may lead us to the wrong diagnosis of a meniscal tear.

The recognition of these articular fractures is one of the most difficult diagnostic problems in knee joint injuries. Plain x-rays and tomogram are usually normal and arthrography is very rarely useful. In this case, therefore, arthroscopy is the most important diagnostic procedure (Granz, Glinz, Rüter and Burri).

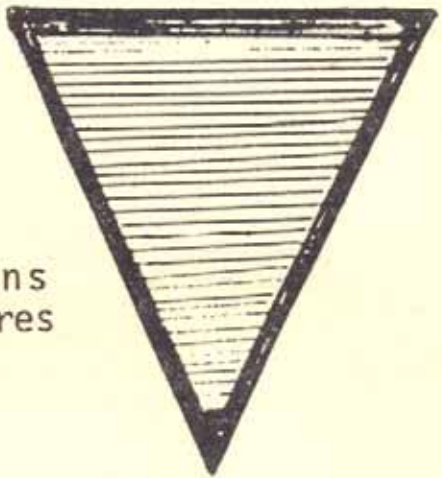
Arthroscopy permits full visualization of all cartilaginous surfaces and thus a more reliable diagnosis. It is a sad fact to miss the acute cartilage injuries and treat the patient with the wrong diagnosis. Only the increased use of arthroscopy enables the examiner discover such lesions without harming the patient (Glinz).

The arthroscopic appearance of acute cartilage injuries varies from small tears or cartilage contusions to severe lesions with fragmentation or extensive defects of the cartilage (Glinz, Ganz, Johnson).

We had the opportunity to discover chondral fractures in four patients, Three of them were injured during a football game and the fourth was hurt in an industrial accident. For the two athletes before arthroscopy the diagnosis was tear of the medial meniscus. In five cases having severe injuries of the knee, arthros-

copy helped us discover the coexistence of an intra-articular fracture with other lesions (meniscal tears, ligamentous injuries etc.).

In the following table, we can see the value of arthroscopy in the diagnosis of various injuries of the knee joint.



Especially this examination proves to be highly valuable for the diagnosis of the articular cartilage lesions where radiological studies and other investigations are usually negative.

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COMPLICATIONS SEEN AFTER MENISCUS OPERATIONS

SUMMARY

In the orthopedical clinics of Istanbul Social Security Hospital 124 cases of meniscotony were performed in 1976-1981. The frequent observed complications after surgery in these cases were pain, infection chronic synovitis, quadriceps incompetany, arthrosis deformans, difficulties in cicatrization, rest of menisci left in place, Sudeks dystrophy; mechanisms of these are discussed; guidelines for treatment given and the literature reviewed.

RUPTURES OF ACHILLES TENDON AND ITS TREATMENT

SUMMARY

Achilles tendon is the biggest, strongest tendon of the body which has the major role in walking running and springing. Besides direct traumas with cutting of boring instruments, it may rupture more frequently with indirect traumas seen in athletes and may loose its function. New reptures seem easy to repair, but repair of open, infected wounded or late tendon reptures are difficult and the results may not be statisfactory allways. We performed different methods in old new Achilles tendon ruptures and our results are compared. Although repture of this tendon is rare, in the last 4 years, we treated 11 cases in our clinic, two of them with conservative, and 9 of them with different surgical methods. Our results are analysed and compared with literatur and conclusions are drawn.

CARPAL TUNNEL SYNDROME

SUMMARY

On the occasion of 5 carpal tunnel syndrome cases, one woman, four men, observed and treated in our cilinic in the years 1976 - 1981, the mechanisms of this syndrome its symptoms, its diagnosis, treatments and prognosis discussed brief ly.

Sprains in Football Players

N. Dagorov*, P. Slanchev*

SUMMARY

The statistical studies of the authors prove that distortions are most frequent injuries in football players. They represent 42.4 % from the total number of injuries. 78.5 % of the distorions affect the knee joint and in 44.3 % of the cases a lesion of the meniscus is diagnosed.

The distorions are classified by the authors in degrees and different therapeutic and rehabilitation methods are proposed: for the second degree - plaster immobilization permiting in the different stages an active observation of the joint and the applying of physiotherapeutic procedures accelerating the process of convalescence, and for the third degree - urgent surgical intervention. Rehabilitation methods aiming at shortening of convalescence and recovery periods, as well as at maintaining to the greatest possible extent of physical condition of the competitors during these periods are proposed.

The study of the structure of sport traumatism in football players shows that such competitors are under the threat first of all of getting sprains, contusions, meniscus lesions, microtraumatic changes of tendons, ruptures of the muscles, fractures and arthroses. The greatest is the number of the sprains, which together with the meniscus lesions in cases of knee joint sprains, represent 42,5% of the total number of the injuries in football players (233 from a total of 549 traumas).

A major part the sprains are localized in the knee joint - 183 (78,5 %) (Fig. 1), followed by the ankle joint (37 sprains - 15,9 %), finger joints (6 cases 2,6 %), toe joint (4 cases - 1,7 %- and three sprains together in the carpal, shoulder and achromioclavicular joints, respectively (1,3 %).

If considered according to the classification accepted in our studies, which is based on the number of the training days

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missed (Table 1), the major part of the sport sprains analysed pertain to the group of middle serious injuries with 16 to 45 training days missed (59,7 %), followed by mild injuries - with 5-15 days lost (61 cases - 26,2 %), grave injuries of 4th and 5th groups, represented with relatively smaller numbers. The overall loss of training days makes a total of 7050.

It is commonly accepted in traumatology to classify sprains in three degrees: lst degree - simply a strain of the joint ligaments; 2nd degree - a partial tear of the ligaments; and 3d degree complete rupture of the joint ligaments. On the basis of our diagnostic experience we support the division of the second degreen proposed by Landa and Michailova (1956) into second «A» degree with partial tear of a small part of the ligaments, and second «B» degree - (Table. 2) with tear of a great part of the ligaments. Generally, in our study the cases of second «A» degree had a loss of training days correspondings to the 2nd group of the classification accepted in our studies. the cases of second «B» degree - to the 3d group, and the cases of third degree - to the 4th group A limtied number of sprains of second «B» degree resulted in a loss of training days corresponding to the 4th group and some other of the cases of third degree had training days loss corresponding to the 5th group. To the last group pertain also 7 football players with surgery of the meniscus lesion.

The study of the residual disturbances in a part of the patients with sprains showed that such after effects make a significantly high percentage. They are expressed mainly in looseness and instability of the joint, in commissures, oedema and lightly limited movements, as well as in pains which appear in connection with the above pathological changes at some movements and in state of fatigue of the joint. These unpleasant sequences of the sprains result in a lowering potentials of the competitors and are impeding them at achieving high sport skill.

In the majority of the cases with more serious residual disturbances the effect of an untimely and low - quality treatment was proved. We consider advisable, therefore, to formulate the basic principles of sprain treatment according to our experience, being convinced that the trainers must be got acquainted with these principles, as well as the sport functionaires and the competitors themthemselves, who often meet negatively the methods of treatment proposed to them.

In sprains of second degree, in which partial tear of the joint ligaments is evident, the immobilization of the joint is necessary. We apply in such cases plaster immobilization, preferring a deep plaster splint which we name «plaster cradle». It enables us in some days later to put the extremity out of it and to apply procedures that accelarate the recovery processes and shorten the term of convalescing. In cases where it was possible to apply such treatment and to observe systematically the patients, the average immobilization term for second «A» degree sprains was 6 days, the reconvalescence period continuing 10 days, and in the cases of second «B» degree - 19 and 29 days on the average, respectively.

At third degree sprains with complete rupture of the joint ligaments the best results were obtained by ligament surgery in the first days after inflication of the injury.

Tracing out the later results of the sprain treatment we established that they may be lined up in order of their effectiveness from high to low as follows: second «A» regree treated with plaster; second «A» degree treated without plaster; second «B» degree with plaster treatment; second «B» degree without plaster treatment; third degree surgically treated and 3. degree with plaster treatment. It is evident that worse results are obtained in the cases when the basic principles of sprain treatment were not observed. Unfortunately, such practice is still often persisting.

In isolated cases of second «B» degree, although treated adequately, the reresults obtained were worse than the results of third degree sprains treated surgically. These observations require further study in order to get orientation whether surgery is not necessary in some second «B» degree sprains too, or the lack good results of the treatment in these cases is due to diagnostic error of accepting third degree sprain second «B» degree one. As far as diagnostic is concerned, we are of the opinion that no matter how experienced the diagnostician may be, it is necessary some times a radiography in passive extension under local aneastesia or under general narcosis to be made. Such radiography is necessary before every surgery too (Fig. 2, 3).

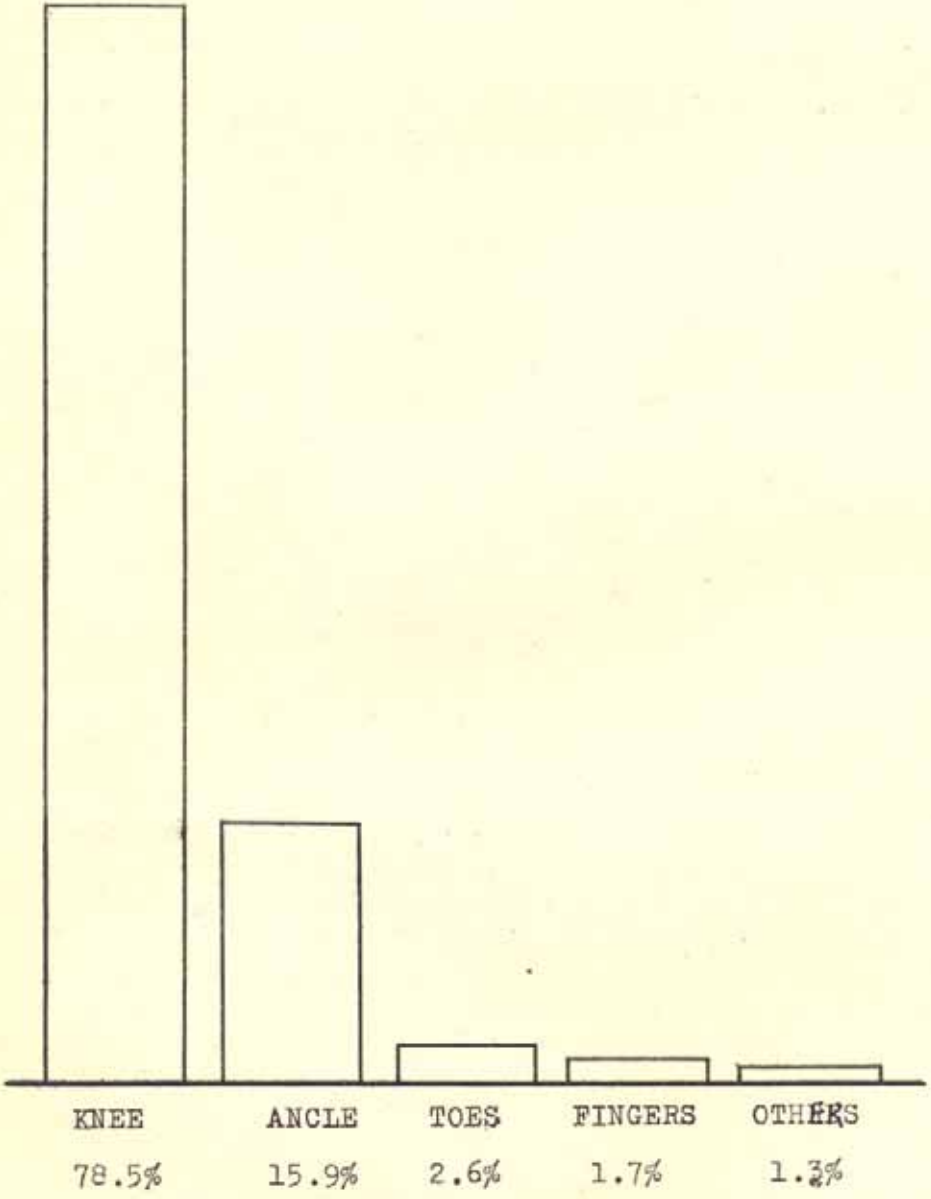

Fig. 1. Localization

Table 1.

GROUPS OF INJURIES ACCORDING TO THE LOSS OF TRAINING DAYS

GROUP'S NUMBER		LOSS OF DAYS	NUMBER OF CASES	%	TOTAL LOSS OF DAYS
I VERY MILD	INJURIES	UP TO 5	—	—	—
II MILD	»	5 — 15	61	26.2	610
III MIDDLE SERIOUS	»	16 — 45	139	59.7	4031
IV GRAVE	»	46 — 90	22	9.4	1254
V. VERY GRAVE		Over 90	11	4.7	1155
			T O T A L		7050

Table 2.

SPRAIN'S DEGREES BY LANDA — MICHAILOVA

DEGREES	TYPE OF THE DAMAGE OF THE LIGAMENT
FIRST	— HYPEREXTENTION ONLY (STRAIN)
SECOND «A»	— RUPTURE OF A SMALL PART
SECOND «B»	— RUPTURE OF A GREAT PART
THIRD	— TOTAL RUPTURE

Table 3.

TREATMENT'S DAYS ACCORDING TO DEGREE OF SPRAIN AND TYPE OF TREATMENT

DEGREE OF THE SPRAIN	PLASTER CAST WITH	PLASTER CAST WITHOUT	SURGERY	MIDDLE LOSS OF DAYS
FIRST				—
SECOND «A»	*			8
SECOND «A»		*		11
SECOND «B»	*			28
SECOND «B»		*		41
THIRD			*	70
THIRD	»			105

Fig. 2.

Fig. 3.