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THE ROLE OF CLINICAL DIAGNOSIS IN MENISCAL LESIONS OF THE KNEE

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Abstract: The aim of the present paper is to evaluate the importance of clinical examination in the process of diagnosing meniscal lesions, as well as to establish the accuracy of clinical examination in comparison to the arthroscopic diagnosis.

In the last 5 years, in the Orthopedic Surgery Clinic in Skopje, the authors have diagnosed and treated 205 patients suffering from meniscal lesions. The method of anamnestic testing, and of clinical examination and the statistical method have been applied. All the patients were subjected to the following tests: well taken anamnesis of the knee injury mechanism, standard orthopedic examination (Stainman I and II, McMurray and Appley test), standard radiographic images of the knee, additional examination with MRI for some of the patients and arthroscopic examination. The results obtained with clinically established diagnosis were compared to the results obtained with arthroscopic diagnosis. Comparing the results of the clinical and arthroscopic diagnoses, an insufficiency of the clinical diagnosis of almost 20% was established. The results are close to those given in the professional literature which refers to the standardized approach in taking the anamnestic data and the realization of the physical signs and tests examination technique. It means that the physical signs and tests, as well as the well-taken anamnesis, are the foundation for establishing a diagnosis of meniscal lesions. Arthroscopy is truly the only golden standard for the diagnosis of all entities of the knee joint, including meniscal lesions.

Key words: meniscal lesions, anamnesis, clinical examination, arthroscopy.

Introduction

The knee is the biggest and the most complex joint in the human body, exposed to injuries. The incongruent joint surfaces and the numerous soft-tissue structures composing the knee, make the kinematic whole of this complex joint [8, 12, 16, 18].

In knee injury, due to the action of the forces concentrated in a small space, the soft-tissue structures often suffer, as follows: the meniscuses, the ligaments, the capsule, the bursa, the tendons of the surrounding muscles and the joint cartilage. The soft-tissue injuries of the knee dominate in the human locomotory system. Meniscal injuries are the most frequent, being at the top in comparison to the other injuries [17, 22, 23, 24].

In order to diagnose these injuries which are very complex, many examination methods were used. The clinical examination, together with the well taken anamnesis and disease history were of great significance and represent a fundament on which the remaining indirect and direct methods were applied [9, 13, 15].

The Orthopedic Surgery Clinic in Skopje has been applying all the available and modern methods for early and accurate diagnosis of knee injuries for more than 30 years.

Arthroscopy is the direct diagnostic method which we used for the diagnosis of meniscal lesions.

Aims and objectives

The aims and objectives of the present paper are to evaluate the importance of the clinical examination in the process of diagnosing meniscal lesions, as well as to establish the accuracy of the clinical diagnosis in comparison to the arthroscopic diagnosis.

Material and methods

In the last 5 years, at the Orthopedic Surgery Clinic in Skopje, the authors have diagnosed and treated 205 patients suffering from meniscal lesions. The method of anamnestic testing, the method of clinical examination and the statistic method have been applied.

Method of anamnestic examination

The aim of a well-taken anamnesis is to obtain sufficient quality and quantity of data which will be relevant for approximation to the diagnosis.

For that purpose we use the following anamnestic information:

- The time when the injury took place,
- The mechanism of injury,
- Pain localization,
- Presence of swellings of the knee,
- Knee blockade.

Figure 1 – Mechanism of injury

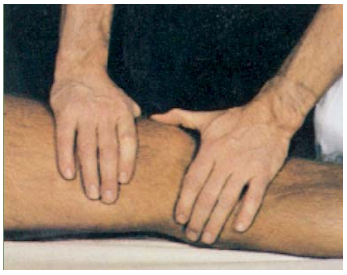

Figure 2 – Ballottement patellae

Method of clinical examination

The main principle in the clinical examination is to perform the examination simultaneously on both knees, by which an erroneous assessment of the obtained parameters will be avoided.

The clinical examination comprises commonly accepted routine examinations, as follows:

- Inspection
- Signs of knee effusion – the so-called – Ballottement patellae.
- Physical signs and tests for meniscal lesions, as follows:
    1. First Steinmann's sign
    2. Second Stainmann's sign
    3. McMurray's sign
    4. Appley's sign

Steinmann sign McMurray sign Appley sign

In order to determine the accuracy of the clinical diagnosis, an arthroscopy as a direct diagnostic method was applied.

Results

155 patients out of the total number of patients were male and 50 were female.

The male: female ratio was 3 : 1.

The average age for males is 31.6 years and for females 36.2 years; the overall average age is 33.9 years.

Table 1

Distribution of patients according to the diagnosis established on the basis of the clinical examination

Meniscal Lesion Laesio Menisci Genus		*Internal knee injury Laesio interna genus*	
Number	%	Number	%
171	83,4	34	16,6

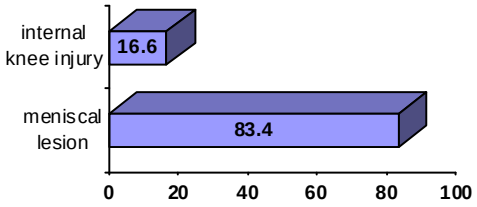

Table 2

Distribution of the patients into two groups according to the Steinmann I sign during clinical examination

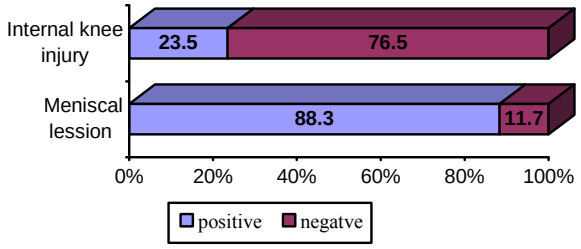

Table 3

Distribution of patients into two groups accordin to the McMurray's sign during clinical examination

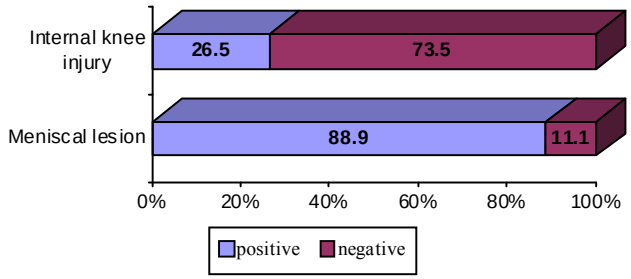

Table 4

Distribution of patients into two groups according to the Appley's sign registration during clinical examination

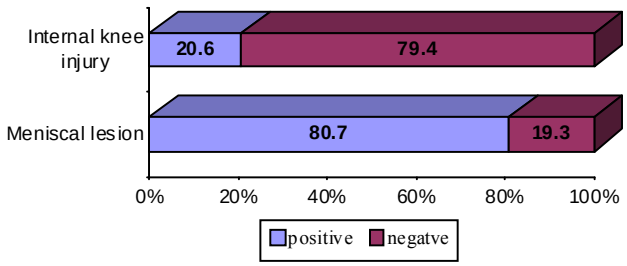

Table 5

Distribution of the accuracy of the clinical diagnosis confirmed with arthroscopic diagnosis

Group	Clinical Diagnosis	Number	%
I	Accurate	72	42,1
II	Accurate but not complete	65	38,0
III	Inaccurate	34	19,9

Comparing the results of the clinical and arthroscopic diagnosis, an insufficiency of the clinical diagnosis of almost 20% was established.

The results are close to the ones given in the professional literature which refers to the standardized approach in taking the anamnestic data and realization of the physical signs and test examination technique [1, 17, 25].

Figure 3 – Arthroscopy of the knee

Discussion

In the literature there is a generally accepted opinion that it had been always hard to establish accurate diagnosis for meniscal lesion on the basis of clinical examination alone.

Useful relevant data about the manner and the mechanism of injury may be provided by a well-taken anamnesis [18].

Clinical examination includes physical signs and tests for establishing the diagnosis of meniscal lesion, but not all of them are path gnomonic [2, 20, 21].

Most authors agree that the value of the physical signs and tests depends, above all, on their interpretation by the different examiners [17, 22, 23, 25].

Arthroscopy shows us that the established clinical diagnosis of meniscal lesion may be accompanied with other soft tissue injuries which were not discovered by clinical examination [11, 12, 14].

Therefore, on the one hand we have relatively valid and specific physical signs and tests for accurate the simplified diagnoses of meniscal lesion, but not such as may differentiate other injuries, such as cartilage injuries, capsular injuries, plicae hypertrophy, partial injuries of ligaments, osteochondral injuries, etc. [5, 6, 11].

In order to establish an accurate diagnosis of meniscal lesions, additional indirect diagnostic methods have been introduced: contrast arthrography, ultrasonography of the knee and magnetic resonance imaging [4, 22].

The efforts for accurate diagnosis became real when the arthroscopy was introduced as the only direct diagnostic method [1, 5, 10].

Arthroscopy as a direct diagnostic method is promoted as the most informative and most affirmative tool for the diagnosis and treatment of meniscal lesions [11].

Arthroscopy is truly the only golden standard [17].

Conclusion

1. Anamnesis and clinical examinations are basic methods for diagnosis meniscal lesions.

2. Arthroscopy is a diagnostic and operative method, which increases the accuracy of the diagnosis up to 100%. At the same time it extends the possibility for surgical treatment of the joint disorders.

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Резиме

УЛОГАТА НА КЛИНИЧКАТА ДИЈАГНОЗА ПРИ МЕНИСКАЛНИ ЛЕЗИИ НА КОЛЕНОТО

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Апстракт: Целта на овој труд е да се евалуира важноста на клиничкиот преглед при дијагностицирање на менискалните лезии, како и да се одреди точноста на клиничкиот преглед во однос на артроскопската дијагноза.

Во период од 5 години на Клиниката за ортопедски болести во Скопје, дијагностицирани и лекувани беа 205 пациенти со менискални лезии.

Користени се: метод на анамнестичко испитување, метод на клинички преглед и метод на статистичка обработка на податоците. Кај сите пациенти беа спроведени следните испитувања: добро земена анамнеза за механизмот на повреда на коленото, стандарден ортопедски преглед (Stainman I и II, McMurray и Appley test), стандардни радиографски слики на коленото, дополнителни испитувања со МРИ кај некои од пациентите и артроскопско испитување. При тоа беа споредувани резултатите добиени од клинички поставената дијагноза со резултатите добиени со артроскопското испитување. Споредувајќи ги резултатите од клиничката и артроскопската дијагноза се констатира инсуфициентност на клиничката дијагноза од речиси 20%.

Резултатите се приближни на оние од стручната литература што упатува на стандардизираниот пристап во земање на анамнестичките податоци и реализација на техника на испитување на клиничките знаци и тестови. Тоа значи дека клиничките знаци и тестови, како и добро земената анамнеза се фундамент во поставувањето на дијагноза за менискални лезии. Артроскопијата е златен стандард за дијагноза на сите ентитети во коленото, вклучувајќи ги и менискалните лезии.

Клучни зборови: менискални лезии, анамнеза, клинички преглед, артроскопско испитување.

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