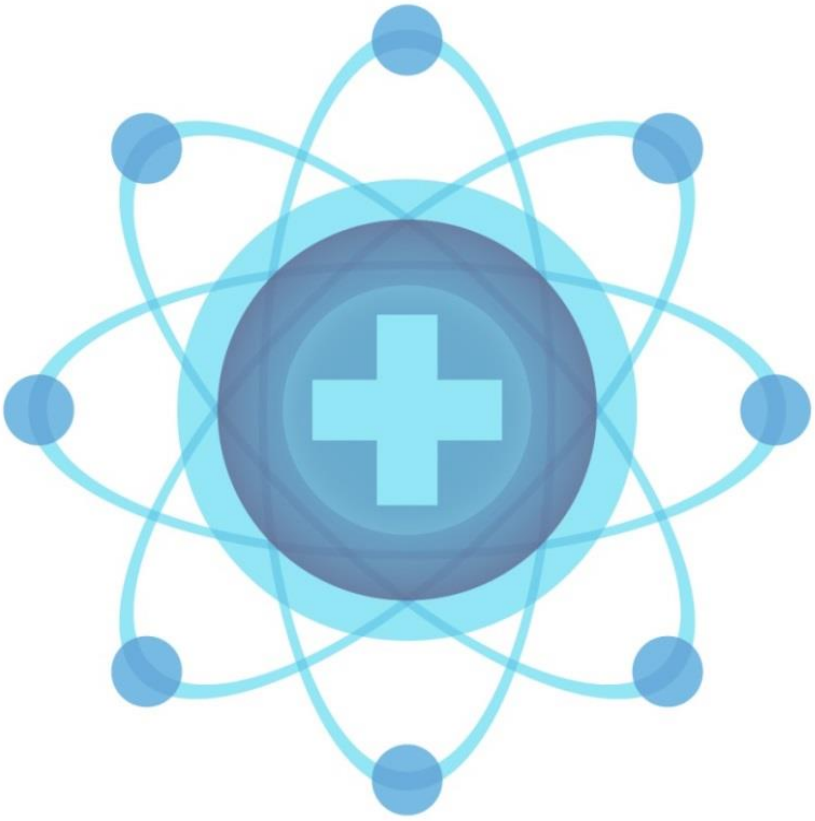

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PECULIARITIES OF MENISCOPATHY IN WRESTLERS ENGAGED IN NATIONAL WRESTLING «KURASH»

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Abstract. The purpose. To study the features of meniscopathy in athletes involved in the national type of wrestling "kurash". Methods. To study the features of damage to the menisci of the knee joint in «kurash» wrestlers, a limited homogeneous sample of 20 observations was selected. During the study, the clinical manifestations of meniscopathy and signs of MRI in the groups analyzed with gradation of the severity of meniscopathy according to the Stoller clinical classification. Results. It was established that in the group of «kurash» wrestlers 0 and 1 stages of the clinical severity of meniscopathy prevailed. According to the results of MRI, it was found that in the group of «kurash» wrestlers, a significantly larger proportion of wrestlers with stages 0 and 1 and a significantly smaller proportion of athletes with stages 2 and 3 were revealed, which indicates that practicing national types of wrestling much less often leads to serious structural changes in the knees. menisci. Conclusion. It is recommended to periodically conduct medical examinations for athletes involved in «kurash» wrestling with a more detailed assessment of the condition of the menisci of the knee joints using imaging methods in the form of MRI.

Keywords: national types of wrestling; «kurash»; meniscopathy.

Introduction. An analysis of injuries among wrestlers in the national form of wrestling «kurash» confirms that the issues related to its prevention are not resolved. As the surveys of specialists have shown, the main factors influencing the high injury rate in «kurash» are forced training, starting from adolescence, multiple fights with a shortened preparatory period, the presence of frequent chronic diseases of the musculoskeletal system in «kurash» wrestlers with a long record of sports activity, intensive training despite the presence of diseases or microtraumas and insufficient rehabilitation periods.

An analysis of the literature data [1,2,3,4,5,] did not allow us to find scientific works that proposed special training methods aimed at preventing injuries in athletes in «kurash». Studies [2,6,7] show that the tasks of developing special training regimens aimed at preventing injuries among athletes involved in various types of wrestling are among the most relevant, since in «kurash» wrestling there are often cases when talented young athletes are forced to leave sports activities precisely in connection with frequent injuries.

According to the results of the surveys of wrestlers, coaches, as well as the study of medical records, it was found in the course of the study that the so-called microtraumas are of particular danger to «kurash» wrestlers. These are common injuries in athletes, which often do not appear in medical records due to the lack of confirmation by appropriate research methods. Such injuries often do not manifest

clinically and allow wrestlers to continue their performance in competitions. At the same time, they can have a negative impact on the athlete's body indirectly [8,9].

Numerous scientific studies have proven that the longer a young athlete is exposed to microtrauma in adolescence, the more transient his future sports career will be [2,10].

Purpose of the study. To study the features of meniscopathy in athletes involved in the national type of wrestling «kurash» on the basis of clinical indicators and MRI data.

Material and research methods. At the stage of studying the features of damage to the menisci of the knee joint in «kurash» wrestlers, a limited homogeneous sample was selected from 20 observations of «kurash» wrestlers, who made up the main group. Accordingly, for the purpose of comparison, a homogeneous group of wrestlers engaged in international types of wrestling, that is, judo and sambo, was also selected, comparable in terms of gender, age and experience in sports activities. During the study, the study groups analyzed the clinical manifestations of meniscopathy and gradation of the severity of meniscopathy according to the Stoller [3,6] clinical classification:

Stage 0 by Stoller. Since there are no cartilage pathologies and its integrity is not violated, there are no symptoms of pathology.

Stage 1 according to Stoller. Minimal changes in the joint lead to the periodic appearance of pain in it. They usually appear in the evening and are more intense in people who have to seriously overload the joints during the day. There may also be a noticeable crunch at the moment of bending the knee.

Stage 2 according to Stoller. Disturbances in the state of the joint are quite pronounced, due to which the pain becomes significant. Its intensity increases at the moment when a person moves his leg, while using his knee. Also, the pain syndrome increases after a long stay in a standing position. In most cases, there are also external manifestations of inflammation, such as redness of the skin and swelling of the tissues. A crunch in the joint appears with almost every movement.

Stage 3 according to Stoller. There are serious changes in the anatomical structure of the cartilage, due to which not only severe pain is noted, but also a pronounced limited mobility of the knee joint. Pain syndrome, as well as stiffness of movements, is the greatest in this state. The clinical picture of the pathology is acute**.**

For an objective assessment of the presence of a pathological process in the menisci, the MRI method was used, as the most accurate imaging method for this anatomical region. For gradation, the Stoller classification [3,6] was used (Fig. 2), based on MRI signs of meniscopathy:

Stage 0 by Stoller. The study does not reveal foci of pathological changes in the tissues. The condition of the meniscus is assessed as completely healthy.

Stage 1 according to Stoller. MRI reveals a signal of increased intensity, which has a focal character and a clear localization. At the same time, it does not reach the surface of the cartilaginous tissue (treatment is most often not required in this case, or, if the need for it is still identified, it is carried out by conservative methods of a predominantly preventive orientation).

Stage 2 according to Stoller. The intensity of the signal received from the tissues is increased, but at the same time its character changes to a linear one. Similarly to the first stage, it does not reach the upper layer of the meniscus (cartilage). If at the same time horizontal meniscus damage is detected, then it means that the cartilage tissue is partially destroyed, and there are no changes in its structure (treatment is mandatory. It is mostly conservative).

Stage 3 according to Stoller. The signal is fixed linear with significantly increased intensity. It clearly reaches the top layer of cartilage. The patient has a pronounced violation of the anatomical structures of the meniscus. This means the presence of ruptures of the medial meniscus. Also, with such a lesion, the displacement of some parts of the injured cartilage is not excluded (this condition is diagnosed as a complete detachment of the meniscus with displacement, treatment is required and is usually carried out surgically).

Results and discussion. The results of the gradation of wrestlers in the studied groups are shown in Figure 1. It was found that in the group of «kurash» wrestlers, stages 0 and 1 of the clinical severity of meniscopathy prevailed. Only in 1 wrestler the 2nd stage was defined according to subjective complaints and in 2 wrestlers the complaints corresponded to the 3rd most severe stage of meniscopathy. In the group of wrestlers involved in international wrestling, there were significantly more cases of stage 2 and 3 meniscopathy according to the clinical classification of the severity of the pathological process. At the same time, there were relatively fewer wrestlers who did not show any complaints associated with meniscopathy than in group 1.

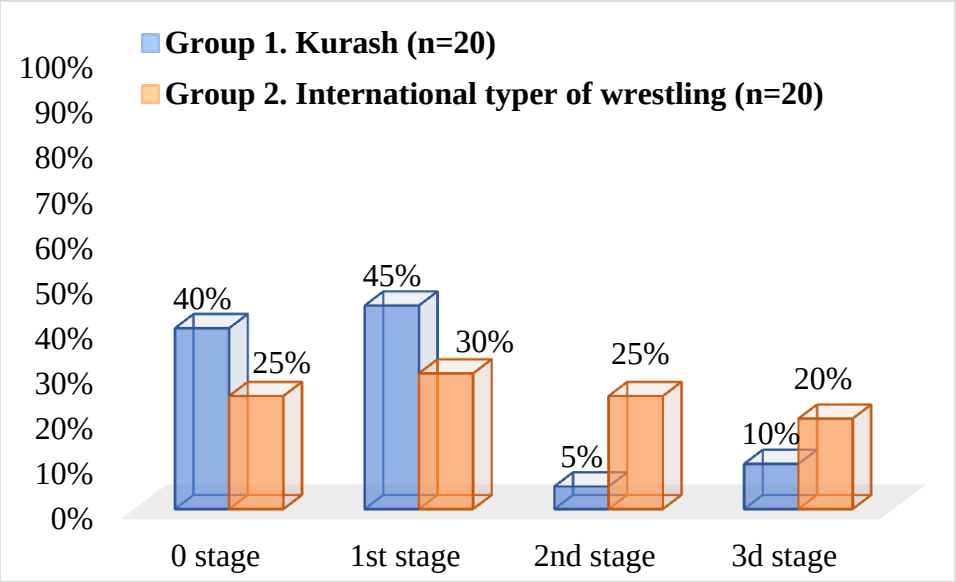

Figure 1. Distribution of patients in the study groups depending on the clinical severity of meniscopathy (according to Stoller).

Figure 3 shows clinical examples of visualization of various stages of meniscopathy using MRI in «kurash» wrestlers.

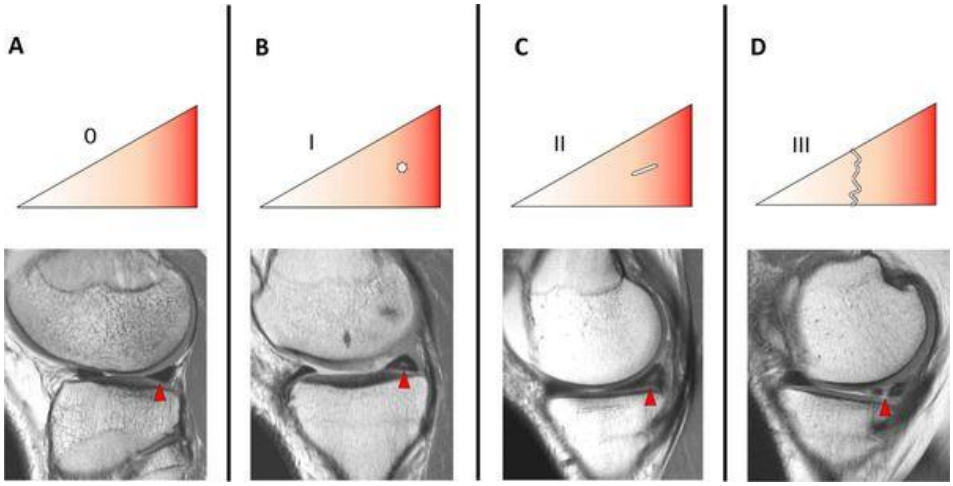

Figure 2. Schematic representation of the stages of meniscopathy with examples of MRI images (red arrows indicate areas of meniscus involvement).

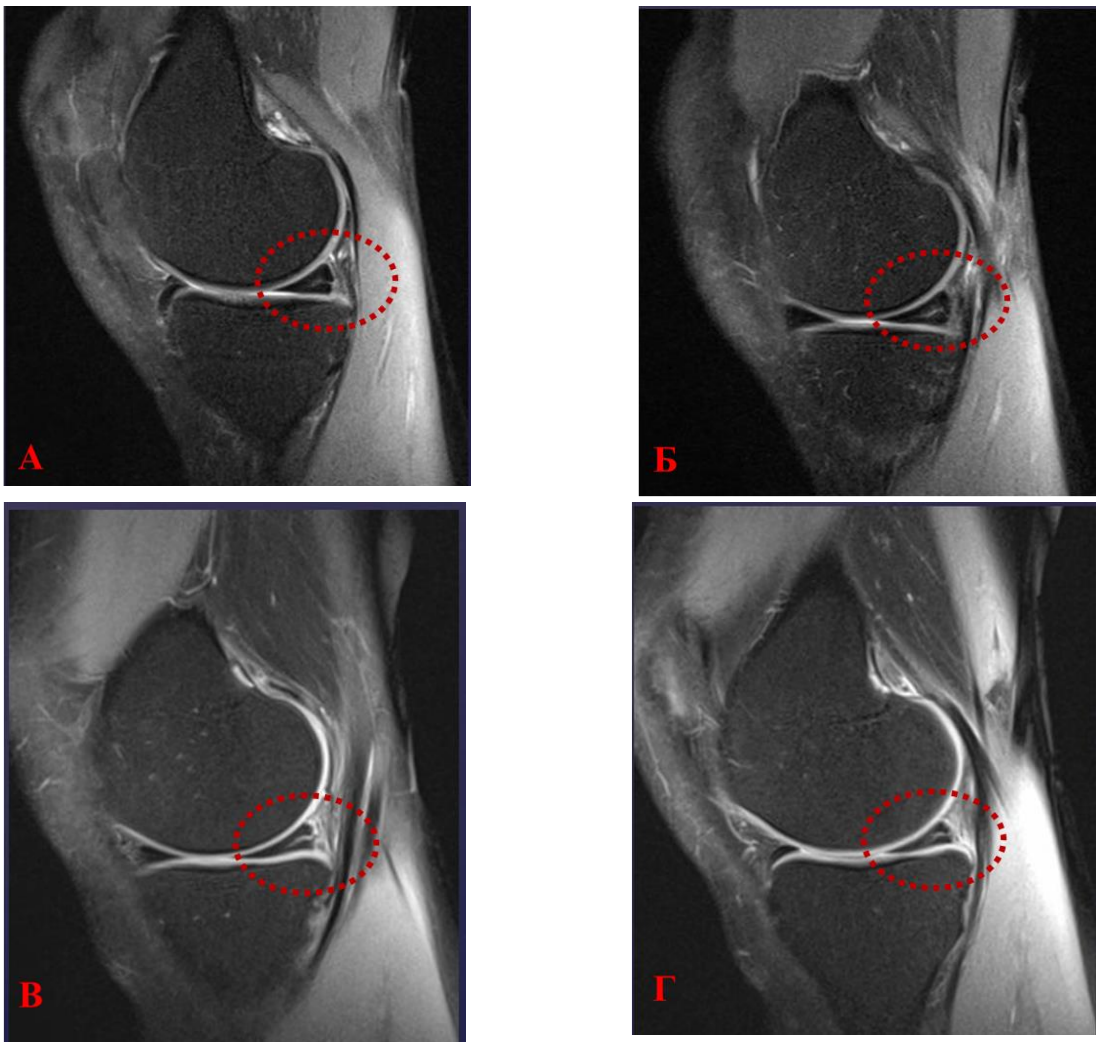

Figure 3. Clinical examples of meniscal lesions of varying degrees in «kurash» wrestlers. A) A wrestler with a sports experience in «kurash» of 7 years - Stoller stage 1, a clear focal signal of high intensity is determined, not reaching the surface of the cartilage; B) A wrestler with 11 years of experience in «kurash» - Stoller stage 2, a clear focal linear signal of increased intensity is detected, which almost reached the surface of the cartilage; C and D) Wrestlers with more than 12 years of

experience in «kurash» - Stoller stage 3, a clear linear signal of very high intensity is detected, which reaches the surface of the cartilage.

According to the results of MRI, it was found that in the group of «kurash» wrestlers, a significantly larger proportion of wrestlers with stages 0 and 1 and a significantly smaller proportion of athletes with stages 2 and 3 were revealed, which indicates that practicing national types of wrestling much less often leads to serious structural changes in the knees menisci. At the same time, it should be noted that in the group of «kurash» wrestlers, the MRI stage of meniscopathy did not correspond in some cases to the clinical stage, especially at stages 1 and 2, which indicated that the pathological process in the menisci in wrestlers with many years of experience in «kurash», may develop asymptomatically (Fig. 4).

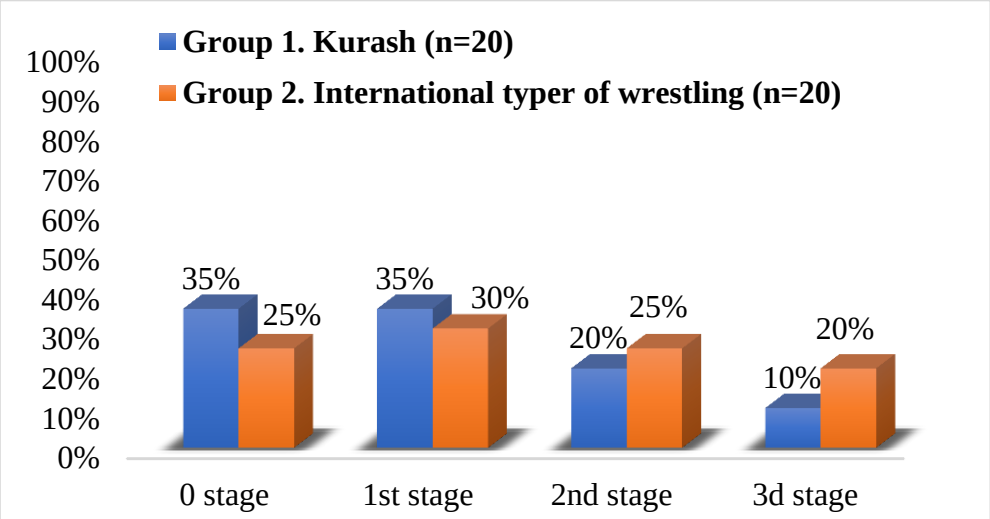

Figure 4. Distribution of wrestlers in the studied groups depending on the MRI stage of meniscopathy.

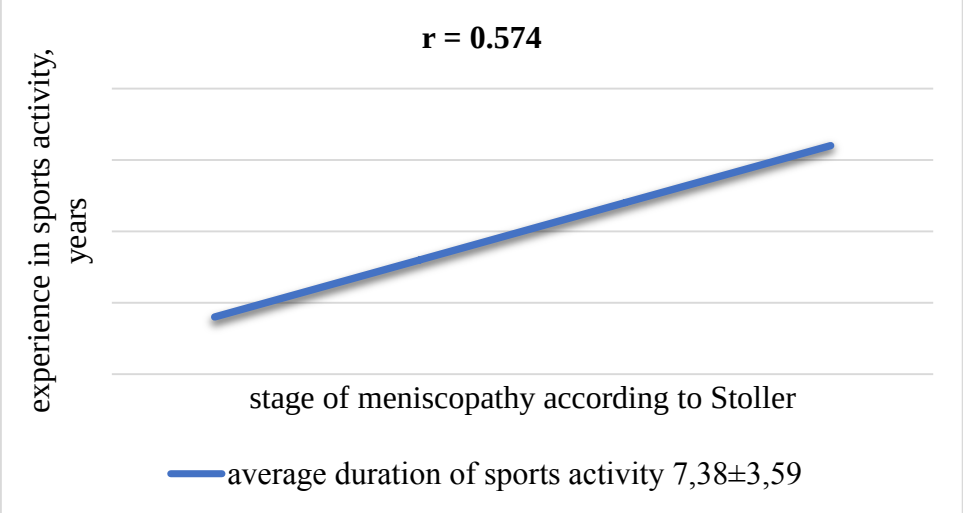

Figure 5. Dependence between the experience of «kurash» wrestling and the stage of meniscopathy.

The results of the correlation analysis (Fig. 5) between the indicators of the experience of sports activity among «kurash» wrestlers and the stage of meniscopathy showed that there is a direct correlation between them of medium strength (r = 0.587). Thus, on the basis of the results obtained, it can be argued that prolonged «kurash» wrestling causes the development of degenerative processes in the tissues of the menisci, even in the absence of sharply developed ruptures during sudden movements, since, being the shock-absorbing apparatus of the knee joint, huge volumes of loads regularly fall on the menisci in a consequence of the specific rules of this type of struggle.

Conclusion. It is recommended to periodically conduct in-depth medical examinations for athletes involved in «kurash» wrestling, with a more detailed assessment of the condition of the menisci of the knee joints using imaging methods in the form of MRI.

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