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Research Article

Nanoligament Combined with Athlete's Rehabilitation Training on the Therapeutic Effect of Sports Ligament Injury

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Ligament injury is a ligament injury caused by excessive or improper exercise. The purpose of this paper is to analyze the optimal recovery time of patients after anterior cruciate ligament reconstruction and to provide some reference guidance for clinical rehabilitation after ACL reconstruction. Ligament injury not only directly affects the stability of joints but also causes motor dysfunction, thus directly affecting the normal life of patients. A ligament injury occurs when the ligament site is cut or subjected to violent or prolonged stress, and the ligament is stretched beyond its capacity. At present, the treatment cycle of motor ligament injury is relatively long, and the treatment effect needs to be further improved. Rehabilitation training is a kind of functional exercise, also known as functional exercise. For the damaged ankle joint, progressive functional rehabilitation training is one of the irreplaceable treatment and rehabilitation methods in the rehabilitation process, which can effectively improve the sports performance of athletes. Therefore, it is of great significance to explore scientific and efficient treatment methods for motor ligament injury. The purpose of this study is to explore the application value of nanoligaments combined with rehabilitation training of athletes in the treatment of patients with ligament injuries. In this paper, 82 patients with motor ligament injuries treated in our hospital from January 2019 to January 2020 were selected as the final study subjects and randomly divided into control group and observation group, with 41 patients in each group. The control group received a single treatment with nanoligament implantation, while the observation group received a comprehensive treatment with nanoligament implantation combined with rehabilitation training of athletes. Changes in HSS, Lysholm, Lkss, daily life ability, and complications of the two groups of patients before and after treatment were compared. It was found that HSS (The HSS knee scoring criteria involves pain, function, range of motion, muscle strength, flexion deformity, stability, and deduction items.), Lysholm, Lkss, and daily life ability scores of patients in the two groups were increased after treatment compared with before treatment, but the increase was larger in the observation group. All experiments and subjects in the article were conducted under the condition of knowing and signing the agreement. In addition, the probability of complications and ligament injury recurrence in the observation group was 3.12% and 0.97%, respectively, far lower than that in the control group. In order to make the patient recover as soon as possible and return to work as soon as possible, it is necessary to carry out rehabilitation treatment as soon as possible after the operation of the patient, instead of continuously delaying the timing of rehabilitation treatment. *Conclusion*. Nanoligaments combined with rehabilitation training of athletes can improve the therapeutic effect of sports ligament injuries and effectively improve the knee joint function and daily life ability of patients. The timing of rehabilitation intervention is not the sooner the better. Within one to two weeks, such rehabilitation intervention will produce better therapeutic effects.

1. Introduction

Ligament injuries are ligament injuries caused by excessive or improper exercise. Ligament injuries not only directly affect the stability of joints but also cause motor dysfunction, thus directly affecting the normal life of patients [1]. At present, anterior cruciate ligament reconstruction is very effective in the treatment of ligament injury, so it is fully

applied in the treatment of ACL injury. After ligament damage, its recovery ability is low, which is widely used in clinical autograft, allograft, and artificial ligament grafts in the way of treatment, but in the overall exercise ligament damage with a long cycle of treatment, treatment effect also needs to be further promoted; exploring scientific and efficient way of treating sports ligament injury is of great significance [2, 3]. The ankle lateral ligament injury is the most common ankle injury. Whether it is the general population or high-level athletes in the process of work, life, and sports, they are prone to ankle injury due to the influence of the external environment or their own factors. The most common and most frequent joint injury is the lateral ankle ligament injury. However, the final curative effect of anterior ligament reconstruction does not only depend on precise and successful surgery. The complete cure of the patient cannot be guaranteed after surgery. Reasonable postoperative rehabilitation training is also a link that cannot be ignored in rehabilitation treatment.

For the evaluation of knee joint function, proprioceptive indicators are often selected, such as joint position sense, kinematic sense, vibration sense, and balance function, among which the measurement of joint position sense is the most used. There is a problem in competitive sports that we cannot avoid and urgently need to solve, that is, sports injuries that are hard to avoid in training and competition [4]. Because sports injury is an objective phenomenon, no matter what kind of competitive events, only in accordance with the scientific law of gradual training, can methodically improve the level of sports and competition results. On the contrary, not following the scientific law of the growth of motor skills and the scientific law of athletes' physical and mental development will easily lead to the occurrence of injury. For athletes, the occurrence of sports injury is inevitable, but it is necessary to understand the relevant knowledge of injury, which can take effective rehabilitation training after injury, to minimize or avoid the occurrence of injury to athletes training and competitive level caused by the adverse impact. The application of artificial ligaments in the treatment of ligament damage has a history of over 100 years. As early as 1903, foreign scholars proposed the use of silk thread substitutes for ligament repair and carried out relevant case studies, which finally proved that silk ligament implantation could stabilize the joint structure to some extent [5]. The scholar believed that although the growth process of connective tissue was hindered to some extent under silk fibers, once the silk connective tissue was finally formed, the tissue would have good function and emergency [6]. In 1906, other scholars confirmed the conclusion that silk thread was a good material for artificial ligament through experimental progress. In the 1970s and 1980s, artificial ligaments began to be used in the clinical treatment of ligament injuries [7]. In 1973, the FDA approved the treatment of inhibition of artificial ligaments. Jenkins demonstrated in 1978 that carbon fiber could be used in the manufacture of artificial ligaments and that carbon fiber only stayed in human tissues for a short time. The main purpose of the existence of carbon fiber artificial ligaments is to promote the formation of new tissue fibers [8, 9]. In view of this argument, many scholars have put forward different views. In 1980, Kennedy et al. used synthetic fibrous ligaments in clinical treatment. Such ligaments are less active in the human body and have good biocompatibility, which can share the weight of ligaments sutured and avoid premature absorption of ligaments for transplantation. Some scholars have used cruciate ligaments in postpartum reconstruction of acl and achieved good short-term therapeutic effects [10]. However, a large amount of clinical time indicates that there is a great friction between the artificial ligament of the above materials and the bone, which has a great impact on the service life of the artificial ligament. The emergence of nanomaterials solves this problem well. Currently, nanomaterials are widely used in biomedicine [11, 12]. The role of the knee joint should not be underestimated, but it is prone to injury during the process of functioning. The degree of injury and the treatment effect and rehabilitation effect after the injury all need to adopt certain evaluation standards.

The specific method for measuring the range of motion of the knee joint is as follows: the center of the angle ruler is placed on the lateral epicondyle of the femur, the fixation arm is placed at the midline of the femur, aligned with the greater trochanter, and the moving arm is placed on the midline of the fibula, aligned with the direction of the midline of the lateral malleolus, and placed well. After positioning, fix the knee angle ruler on the affected limb, and let the patient do the maximum flexion and extension of the knee joint without weight-bearing. Rehabilitation training is a related physical activity to promote the improvement and recovery of the function of the injured part as soon as possible [13]. With the continuous updating of medical concepts, people pay more and more attention to postoperative rehabilitation training [14]. Rehabilitation training makes up for the deficiency of traditional treatment, can realize the rapid healing of injury, and plays an important role in the recovery of the function of the injured part. At present, the application of rehabilitation training in clinical follow-up treatment is more and more extensive, and it also plays an important role in clinical treatment. In this paper, a comprehensive treatment method of nanoligaments combined with rehabilitation training of athletes was proposed, and the changes of HSS, Lysholm, Lkss, daily life ability, and complications of the two groups of patients before and after treatment were compared by means of clinical analysis of cases. The effectiveness of this treatment method has been proved, indicating that this method is worthy of extensive promotion in clinical treatment. The study in this paper not only promoted the renewal of the treatment mode and the improvement of the treatment effect of the injury of the motor ligament but also laid a theoretical foundation for the later development of related studies.

2. Theoretical Elaboration

2.1. Ligament Injury. Ligaments are connections between bones and are relatively obvious microscopic structures. Some ligaments are attached to the surface of bones, while others are fused to the outer layer of the joint capsule.

Ligaments can improve joint stability and reduce and avoid joint injury. Under the condition of external violence, the body will form nonphysiological activities, which will cause excessive stretching of the ligaments, so that its ability to withstand the stretching is far beyond the tolerance of the ligaments, and the ligaments will suffer permanent injuries. The local injury to the ligament that does not involve the joint is called a transitional injury. Complete ligament fracture and avulsion of the bone at the ligamentum attachment site may lead to potential joint dislocation, supracrustal dislocation, or even complete dislocation. The main causes of ligament injury are external factors, such as impingement. Injuries of ligaments caused by sports are called sports ligament injuries. Ligament injuries are usually accompanied by bleeding caused by rupture of small blood vessels, pain and swelling in local areas, and a series of pain and swelling in the ligament tissues, as well as movement disorders in joint parts. Moreover, once the ligament is pulled, there will be significant pain. If the ligament is completely broken, the stability of the human joint will be greatly reduced. The examination to determine ligament injury mainly includes X-ray examination, magnetic resonance examination, arthroscopy, and other special examinations [15]. When ligament damage occurs, first aid treatment must be given to reduce the deep injury caused by ligament damage. First aid treatment for ligament damage includes elevation of the affected limb, cold compress, and compression. After the ligament is injured, it must be treated and comprehensively repaired quickly. If the ligament injury is not treated in time, the joint will be repeatedly injured, and a series of important structures such as the meniscus and articular cartilage will be damaged over time, resulting in joint lordosis, and even further development of secondary traumatic arthritis in severe cases. Repair of damaged ligaments is the focus and core of the treatment of ligament injuries. Partial rupture of ligaments can be repaired by direct suture, and complete ligament exercise can be reconstructed by artificial ligaments and tissue metastasis.

2.2. Rehabilitation Training. After the injury occurs, the related physical activities to promote the functional improvement and recovery of the injured part as soon as possible are called rehabilitation training. In addition to some serious injuries that require bed rest, some general injuries may require appropriate exercise. Scientific and reasonable physical activity training can realize the rapid healing of injury and play an important role in the recovery of the function of the injured part. The purpose of rehabilitation training mainly includes four aspects: first, keep good physical condition. The use of rehabilitation training can effectively avoid the occurrence of muscular atrophy, so that the limb can maintain normal motor ability and cardiopulmonary function. Second is to prevent the occurrence of comprehensive symptoms of suspension. The human body will establish various types of conditioned reflex in the long time of activities. If the body activity and movement stop suddenly, the movement balance of the body will be destroyed, and in severe cases, the functional disorder of the severity of the nerd will occur. Thirdly, scientific rehabilitation training after physical injury can improve joint stability and promote metabolism of injury location and speed of injury recovery. Fourthly, the use of rehabilitation training can gradually balance the normal metabolism of the body, avoid weight gain caused by rest, and improve the recovery time of injury. The principles of rehabilitation training include the following aspects: first, diagnostic correctness. Correct and comprehensive diagnosis is an important basis for the development of scientific rehabilitation training plan. Second is the principle of individual treatment. The development of rehabilitation training plan should be individualized, and relevant strategies should be developed according to the actual situation of patients such as age and function, so as to promote the continuous improvement of patients' muscle strength and joint activity. Thirdly, the premise of rehabilitation training is not to aggravate the injury and affect the recovery of the injured part. Therefore, the local and systemic movements of patients should not be stopped immediately, and the muscle training should be carried out as soon as possible. Fourthly, the rehabilitation training plan should be comprehensive, insist on gradual progress, and attach importance to the appropriateness of the amount of exercise. In rehabilitation training, it cannot be accomplished overnight. The scope, time, and frequency of training activities should be improved from small to large and slowly. Be guided by the principle of moderation. Too much rapid training can aggravate the injury.

2.3. Nanotechnology and Nanoligaments. At present, nanotechnology is widely used in the medical field, which is mainly reflected in stomatology, drug delivery, gene therapy, cardiovascular disease treatment, and orthopedic medicine. First is the application in the oral cavity. In recent years, nanotechnology has been widely used in dental composites and tooth reconstruction. The two most common nanomaterials are filler materials and nanohybrids. Second is nanotechnology load drug function. With the continuous maturity of nanotechnology, the concept of "magic bullet" gradually appeared in the medical field and gradually developed into a systematic nanoloaded drug and delivery system. The formation of this system marks that the research on pharmaceutical preparations has gradually stepped to a higher stage. Third is nanotechnology and gene therapy. At present, low delivery efficiency and unknown direction are the difficulties of gene therapy, but there are great risks in using viral vectors for gene therapy. In order to realize the scientific design of targeted vector, some scholars have tried to introduce nanotechnology into gene therapy. At present, the use of nonviral nanoparticles has been able to successfully realize the transmission of DNA, and the application prospect of gene therapy has been further expanded. Fourth, nanotechnology treats cardiovascular disease. Fifthly, the application of nanotechnology in orthopedics is mainly used as the construction of new bone components. The nanometer size, the number of interfaces and the number of free surfaces, and the interaction between nanometer units are the three common characteristics of nanomaterials. The most commonly used nanomaterials in clinical practice in the new stage include inorganic, organic, and loaded nanomaterials.

Different nanomaterials have different application scope in the medical field, and the use of each nanomaterial should be considered according to its characteristics.

Nanometer ligaments are artificial ligaments mainly composed of nanomaterials. These artificial ligaments overcome the deficiencies of traditional artificial ligaments, have good biological characterization, have the advantages of nontoxicity and low infectivity, and do not hinder the normal growth of tissues around the human body. The most important thing is that the friction between the artificial ligament and the bone is relatively small, so the life of the artificial ligament is relatively long, and it has a long-term effect on ligament injury. Generally speaking, nanoligaments, as artificial ligaments, are suitable for wide application in the field of medicine due to their unique advantages. After the implantation of nanoligaments into human body, as a scaffold material, human microcells can be successfully implanted and attached on the nanoligaments and have a good growth state. This indicates that the three-dimensional structure and biocompatible characteristics of the nanoligament should be good, and it is a brand new scaffold material capable of effectively repairing ligament damage, which can be further studied and used. At present, the key to the preparation of nanoligaments is to produce intelligent nanobiomimetic materials with special functions to effectively regulate the specific properties of cells, so as to further improve the biological activity and compatibility of nanoligaments. For a long time to come, the preparation of nanoligaments still has great room for improvement.

3. Case Analysis Experiment

3.1. Experimental Subjects. In this study, 82 patients with motor ligament injuries treated in our hospital from January 2019 to January 2020 were selected as the final research subjects. The inclusion criteria of the experimental subjects were as follows: first, after imaging detection, it was determined to be motor ligament injury; second, the subjects were all over 18 years old. Thirdly, sports ligament surgery and related treatment were selected. The time period from ligament injury to operation was 3 weeks to 17 months. Fourthly, the patient has relatively clear consciousness and understanding ability and can independently complete the questionnaire survey and relevant scoring test. Fifthly, the patients and their families all volunteered to participate in this experiment and signed a consent form. The exclusion criteria for subjects were as follows: first, patients with an abnormal mental state or some degree of drug dependence; second, patients with other types of severe disease; and third, patients with low compliance and compliance. The 82 patients were randomly divided into two groups (41 patients in each group), the control group and the observation group. The control group included 14 female patients and 27 male patients, with an average age of 29.6 years. The observation group included 13 female patients and 28 male patients, with an average age of 29.4 years old. There was no significant statistical difference in the basic data of the two groups of patients, which could be used for the experimental comparison in this paper.

3.2. Experimental Methods. Patients in the control group were implanted with nanoligaments during the surgical treatment. During the implantation of nanoligaments, attention was paid to the rejection response of the body to avoid infection. After the operation, only the traditional way of rehabilitation was used, mainly repose. Observation group of patients with intraoperative implantation of nanoligament, postoperative use of athlete way of rehabilitation training for recovery, and specific rehabilitation training method is as follows: after the surgery using pressurized elastic band to bind up the limb, external use fixed support, to practice straight a ligament out slowly, the side of the operation in training of muscle and ligament surrounding tissues; one day after the surgery, quadriceps femoris muscles were trained for contraction, and the joints were autonomously pressed or lifted, 15 times in a group, 10 times a day. 2 d after the operation, the range of motion of the ligaments on the surgical side was trained. The ligaments on the surgical side were elevated with a pillow in the sitting position, and the ligaments were relaxed after stretching for 10 s. The training duration was 5 min each time, 3 times a day. After the operation, the ligament function was trained in 3D. The ligament flexion and extension angle was between 0° and 30°. The ligament was trained once every half an hour and twice a day. Then, according to the doctor's advice, walk with the help of tools and try to carry out weight training. The weight of the weight-bearing object should increase gradually. 2 to 4 weeks after the operation, proprioception was reconstructed, and balance strength was trained, activity strength of one side of the injured ligament was further improved, and rehabilitation training time was reasonably prolonged. From April to June after the surgery, the ligament resistance training should be carried out, and some training such as swimming should be arranged reasonably to help the further recovery of ligament function.

3.3. Evaluation Index. With reference to the existing research materials, the writer will determine the final evaluation index for the following several aspects: first, the ligament function evaluation, before and after treatment for 6 months, is ligament score (HSS), and by using the Lysholm ligament function (LKSS) to assess the patient ligament function, HSS score includes pain, activity level, function, muscle strength, acute and buckling stability a few main dimension, such as the final income comes higher scores on behalf of the ligament functional recovery, the better. LKSS scores mainly include swelling, pain, squatting, and other aspects. 100 is normal, more than 80 is excellent, 70 to 79 is good, 60 to 69 is qualified, and less than 60 is poor. Second is self-efficacy evaluation. The GSES table was used to evaluate patients' self-efficacy before and after treatment, including their ability to solve and deal with things. The higher the final score, the higher the patient's sense of self-efficacy. Third is daily life evaluation. The BI table was used to evaluate the patient's daily life ability. The evaluation content included multiple aspects of the patient's daily life, and the final score was in direct proportion to the patient's daily life ability. Fourth is statistical observation of complications

Table 1: HSS score data table.

Group	Time	Pain	Function	Activity	Muscle strength	Flexion deformity	Stability
Observation group	Before treatment	15.26	12.65	11.76	6.21	5.63	6.22
	After treatment	25.56	18.41	16.23	9.05	9.24	9.32
Control group	Before treatment	15.31	12.68	11.83	6.32	5.64	6.23
	After treatment	21.16	15.61	14.02	7.86	7.96	7.98

*Data came from the experimental analysis.

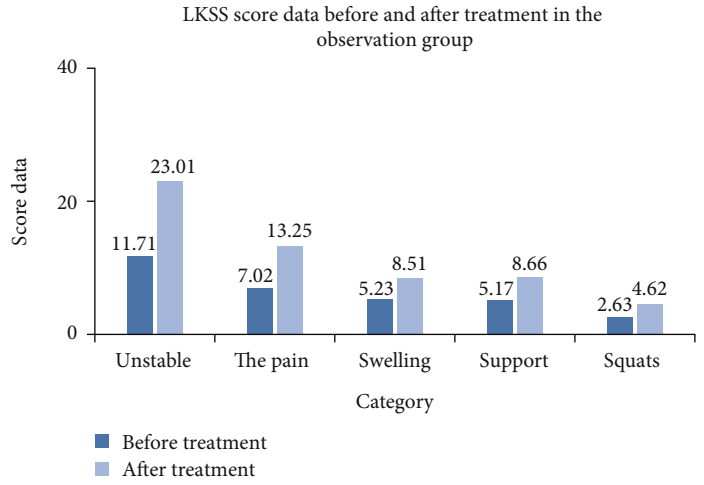

Figure 1: LKSS score data of the observation group before and after treatment.

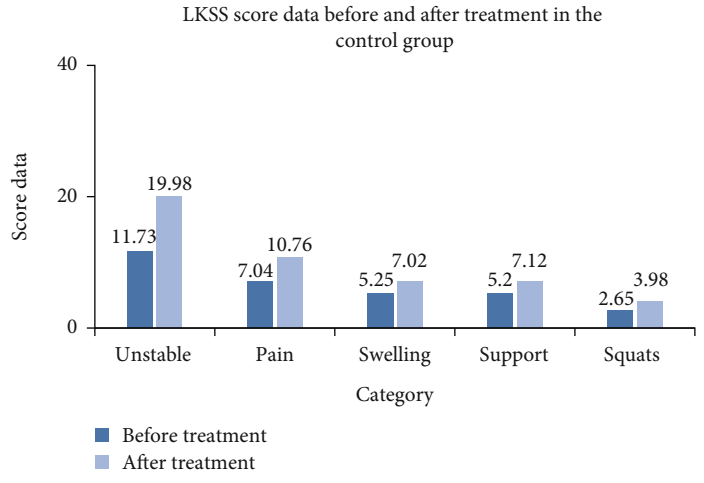

Figure 2: LKSS score data of the control group before and after treatment.

and recurrence rate. Postoperative complications and recurrence were counted in the two groups.

3.4. Experimental Data Statistics. SPSS statistical software was used to conduct statistical collation of experimental data. After the completion of data statistics, computer graphics software was used to draw data charts and draw relevant experimental conclusions based on the analysis of data charts. In the process of data recording, the accuracy and comprehensiveness of experimental data must be guaranteed to avoid conclusion errors due to experimental data errors.

4. Experimental Results and Discussion

4.1. Experimental Results

4.1.1. HSS Data Comparison. Table 1 is the HSS score data table. It can be seen from the data in the table that after treatment, the HSS score of patients in the control group

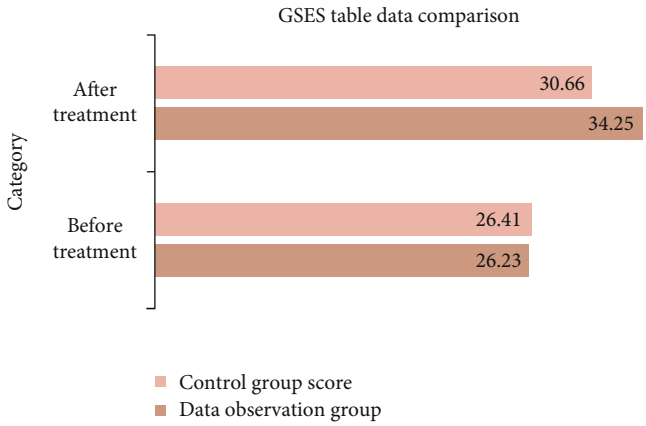

Figure 3: Comparison of GSES table data.

and the observation group increased as well as before treatment. However, compared with the control group, patients in the observation group were significantly higher in pain, muscle strength, activity, function, and stability after the treatment with the nanotube combined with athlete rehabilitation training.

4.1.2. Comparison of LKSS Scores. Figures 1 and 2, respectively, show the LKSS scores of patients with motor ligament injury in the observation group and the control group before and after treatment. As can be seen from the data in the figure, the LKSS scores of patients in both groups before and after treatment presented an increasing trend. But on the whole, the scores of exercise patients in the observation group improved more in all dimensions before and after treatment. Therefore, the combination of nanoligaments and rehabilitation training for athletes can effectively improve the function of ligaments in patients.

4.1.3. Comparison between CSES Table and BI Index Score. Figures 3 and 4, respectively, show the GSES table data in contrast with BI index score data, the data we can see from the picture; after treatment, the observation group and control group in the GSES table and BI experienced score rise, but the whole observation group of patients with GSES table and BI index score was significantly higher than the control group patients. This indicates that the use of nanoligaments combined with rehabilitation training for athletes can promote the continuous improvement of patients' self-efficacy and daily life ability.

4.1.4. Comparison of Complications and Recurrence Rates. Table 2 shows the data of complications and recurrence after treatment in the two groups. It can be seen from the data in the table that the probability of complications and recurrence of ligament injury in the control group is 17.21% and 16.54%, respectively, while the probability of complications and recurrence of ligament injury in the observation group is 3.12% and 0.97%, respectively. This indicates that the combined treatment of nanoligaments combined with rehabilitation training for athletes has a stronger safety compared with the single treatment, which can greatly reduce the possibility of recurrence of ligament injuries, and has a good therapeutic effect.

4.2. Discussion of Experimental Results. Ligament injury is a condition of ligament injury caused by sports. Ligament injury will have a direct impact on the overall stability of human joints, promote the continuous acceleration of joint degradation, and thus have a very adverse impact on ligament, joint function, and the quality of life of patients. At present, the treatment of ligament injury is still dominated by arthroscopic revascularization. However, due to the complex overall structure of ligaments and joints, the recovery of fitness, function and exercise ability is also relatively complex. If the patient performs joint immobilization unscientifically or rests in bed for a long time after surgery, it will directly affect the dynamic balance of the joints and ligaments, and even lead to muscle atrophy, which is not conducive to the recovery of the patient's motor function. Therefore, attention must be paid to rehabilitation training after treatment, which can not only promote the improvement of nursing efficiency but also greatly improve the final treatment effect.

At present, studies of nanometer materials applied in tissue engineering is still at the primary stage, especially in the biomedical field; a lot of research is still in the stage of animal experiments, according to a lot of clinical experiments which verified the conclusion; in addition, the application of nanometer materials in the process of biological safety needs further improvement. Due to the continuous steps of nanotechnology, subdisciplines related to nanotechnology have been established and improved, such as nanoelectronics, biology, medicine, and materials science. The fusion between nanomaterials and the above disciplines is getting closer and closer. Some experts predict that nanoceramics will play an important role in the manufacture of artificial bones for a long period of time in the future, and organic and inorganic composite nanomaterials with various properties will certainly play an important role in the interventional repair of ligament injuries. Existing research data show that human ligaments are composed of many fibers, and these fibers have a stopping point at both the tibia and femur. When the knee joint is at different positions, some of the fibers are tensioned and play a role in stabilizing the knee joint. Therefore, when the motor ligament is completely broken, it is extremely important to use the nanoligament to reconstruct the human ligament. For the patients with partial injury of the motor ligament, they can make corresponding choices according to their specific conditions. Animal experiments confirmed that the toughness and elasticity of the healed ligaments were almost the same as that of the injured anterior ligaments. The experiment in this paper confirmed that the overall function and stability of ligamentum knee joints of patients with ligament injuries were significantly improved after rehabilitation training of athletes. The muscles near the knee joint can compensate for the instability of the knee joint under slow motion. If the muscles around the joint are weak, effective control of the joint cannot be achieved. Whether ligaments can realize the effective play of motor function is also closely related

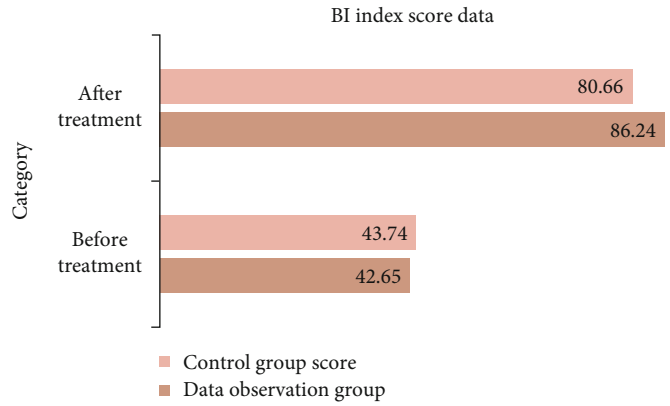

Figure 4: BI index scoring data.

Table 2: Data of complications and recurrence in the two groups.

Group	Complications	Recurrence rate
Control group	17.21%	16.54%
Observation group	3.12%	0.97%

*Data came from the experimental analysis.

to the recovery of proprioception of human body. Therefore, after the completion of the corresponding surgical treatment, patients with sports injuries should also strengthen the muscle strength and proprioceptive training in the early stage to avoid muscular atrophy and other conditions, so as to effectively prevent secondary knee injuries caused by sports ligament injuries.

In this study, the control group was treated only by nanoligament implantation, while the observation group was given rehabilitation training for athletes after the completion of nanoligament implantation, so as to highlight the patients' initiative in rehabilitation training and develop reasonable rehabilitation training strategies according to their own deficiencies. On the basis of stabilizing the injury condition, the recovery of life ability and overall motor function of the patients was promoted. The results showed that the HSS and LKSS functional scores of the patients in the observation group were significantly higher than those in the control group after 6 months of treatment, and the improvement of daily life ability of the patients in the observation group was much better than that of the control group. In addition, the author has also made after treatment for patients with complications and recurrence monitoring; monitoring results show that the observation group of patients with postoperative complications and recurrence of ligament damage probability is significantly lower than the control group, two groups of results and no statistical difference; however, this may be caused by experimental sample number less, which later still needs thorough expansion of research samples.

To sum up, the use of nano-combined athlete rehabilitation therapy can promote the overall treatment effect of patients with ligament injury, and promote the effective improvement of joint ligament function in patients, and is also beneficial to patients' self-efficacy and further improvement of daily living ability. It has good clinical application value and is worthy of further promotion in clinical experiments.

5. Conclusion

Sports injury and rehabilitation training are closely linked and affect each other. It is very necessary to carry out active and effective rehabilitation training after the occurrence of injury, which can promote the rapid recovery of the injured part of the athletes. There are many types of sports injuries, and rehabilitation training programs for different injuries are different. It is necessary to study targeted rehabilitation training for the common injury parts in sports, such as knee joint and ankle joint. In this paper, a comprehensive treatment method of nanoligaments combined with rehabilitation training of athletes was proposed, and the changes of HSS, Lysholm, Lkss, daily life ability, and complications of the two groups of patients before and after treatment were compared by means of clinical analysis of cases. To sum up, the rehabilitation treatment of articular ligament in athletes can promote the overall treatment effect of patients with ligament injury, and promote the effective improvement of ligament function of patients, and is also beneficial to the patient's self-efficacy and further improving the ability of daily life. It has a good curative effect and is worthy of further promotion in clinical trials. However, the exact clinical application of this treatment method needs further research and exploration.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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