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Treatment of Compression Fracture of Tibial Condyle in Long-Distance Runners

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Abstract: Among the sports injuries of long-distance runners, knee joint injuries are relatively common. According to the data, knee joint injuries account for about 25% of all kinds of sports injuries, ranking the first among all kinds of sports injuries. As to the cause and mechanism of injury, the most common injuries in this area are bone cartilage injury, meniscus injury, patellar fracture, collateral ligament and cruciate ligament injury. However, there are few studies on the compressibility fracture of tibial condyle and external condyle, so it is essential for long-distance runners to carry out regular training with correct technical specifications. The purpose of this paper is to solve the problem of the occurrence and development of the treatment of the compression fracture of the tibial condyle in long-distance runners. By studying the causes and mechanisms of the injuries, the causes and mechanisms of the injuries are analyzed and discussed. Scientific training methods and necessary preventive measures should be adopted to train more excellent athletes, to embody the effective value of this project for human body exercise. The results showed that the occurrence of the compression fracture of the tibial condyle of the knee joint was significantly related to the scientific nature of the training method, the intensity of the training and the length of time. Compared with traditional medical treatment, the new treatment in this paper can improve the curative effect by 30%. In the later rehabilitation training, I could improve my physical quality as soon as possible. The rehabilitation index of the patients with long-distance runners in the experiment increased by 20%, and the exercise development index increased by 12.5%.

1. Introduction

The internal and external condyle of the tibia is in the lower part of the body and is vulnerable to

trauma in daily life. Fractures of the internal and external tibial condyle occur most frequently in long tubular fractures of the whole body, accounting for about 12% [1].Fractures are often caused by strenuous exercise and high-energy trauma, such as overloading, motor vehicle accidents, or falls[2].The fracture of 1/3 of the sub condyle of the internal and external tibial condyle is prone to damage the main blood feeding nourishing artery, and the fracture does not heal or is delayed due to the poor blood supply at the distal end [3].High energy tibial fractures are often comminuted fractures with soft tissue open injuries, vascular and nerve injuries. Uncertain blood supply and loss of soft tissue cover are the main causes of infection in open fractures [4]. Therefore, it is of great importance to timely and reasonable treatment for compression fracture of tibial condyle, especially for patients with open wound.

The injury mechanism is mostly the injury of the posterior condyle of the tibial plateau on the coronal surface caused by axial violence during knee flexion, which is easy to be missed by X-ray examination and difficult to be treated clinically [5]. The internal fixation devices used in clinical practice cannot fully fit the bone surface, and it is difficult to meet the requirements of strong fixation [6].In recent years, the rapid development of digital technology has provided new means for the clinical diagnosis and treatment of orthopedic diseases and basic research, which has been integrated, promoted and influenced by traditional orthopedic diseases, and gradually formed the modern digital orthopedic department with the characteristics of The Times [7].The interactive medical image control system has the most mature application in orthopedics. In addition to the basic 3d reconstruction function, it also provides anatomical measurement, simulated surgery, finite element analysis, internal plant design and other functions. Ignoring the difference between inside and outside platform, measuring the numerical error and the true level [8].

To investigate the effect of scientific training on the fracture of tibial condyle. Among them, Van made a detailed introduction to the symptoms and characteristics of tibial fracture, analyzed the existing problems in the treatment of the compression fracture of the internal and external tibial condyle, and expounded the relevant research methods and techniques [9].Chi-heun proposed in his paper the significance and research status of scientific exercise training in the prevention of tibial fracture, and expounded the relevant traditional treatment methods, in addition, the significance and importance of scientific teaching training to treatment [10].Sudhakar elaborated on the ways and means of non-drug intervention therapy and proposed the therapeutic mechanism of scientific exercise [11].Y B proposed the low treatment of traditional treatment, indicating the influence of preventing local overburden of knee joint on recovery [12].

In detail, the main research contents of this paper can be roughly divided into five parts: the first part is the introduction, which aims to systematically summarize the main research contents of this paper from the aspects of research background, research purpose, research ideas and methods; The second part is the theoretical basis, which summarizes in detail and systematically the current research status of the treatment of the compression fracture of the tibial condyle in long-distance runners, and introduces the existing treatment methods. The third part is related research, through the inquiry of data and relevant experiments, the early treatment of tibial condyle compression fracture treatment research. The fourth part is the analysis of the data. Through the specific investigation data and research results, it is concluded that the treatment of the compression fracture of the tibial condyle in early long-distance runners has many influences. The fifth part is the summary and Suggestions of this paper, which is the summary of the results of this paper and the prospect of the further application of the research on the treatment of the compression fracture of tibial condyle in long-distance runners.

2. Proposed Method

2.1. Characteristics and Symptoms of Compression Fracture of Tibial Condyle

The tibia is an important long bone of the lower extremity, the upper tibial plateau and femur double condyle form the knee joint, the lower medial osseous process is the medial malleolus, and the lateral malleolus at the distal end of the fibula forms the ankle point, and the talus forms the ankle joint. Therefore, the recovery of the line of force in tibial fracture is of great importance to the function and stability of the knee and ankle joint. The tibia shaft is triangular prismatic, the lower 1/3 slightly square. The tibial stem is divided into three sides by the anterior, inner and outer cristae. The upper part of the leading edge is sharp and thin, and the middle and lower part are gradually obtuse. The inside and outside are separated by the leading edge. The transition of the middle and lower junction of the tibia shaft is relatively thin, so it is a good site for fracture, while the soft tissue on the anterior and medial side of the tibia is weak, only the skin is covered, and the sharp broken end of the fracture is easy to Pierce the skin and form an open fracture. There are two main sources of tibial cadre blood supply: nourishing arteries and periosteal vessels. The nourishing artery of the tibia is in the upper middle segment and branches off from the posterior tibial artery. It passes through the proximal tibialis posterolateral trophoblastic foramen at the proximal 1/3 of the middle tibia to penetrate the bone cortex into the medullary cavity. Tibial periosteum vessels consist of many branches of the anterior tibial artery running down the interosseous membrane. In general, periosteum vessels play a small role in the blood supply to the bone cortex, providing only 1/4 to 1/3 of the blood supply around the tibial diaphyseal cortex. But when tibial fractures occur, the intramedullary blood supply from the nourishing artery is disrupted, and blood supply to the periosteum gradually plays a major role.The calf is divided into four fascial septa areas by tibia and fibula, interosseous membrane, deep fascia, anterior calf septa and posterior calf septa, which contain muscles, nerves and blood vessels.

Tibial fractures are usually double fractures of tibia and fibula, open fractures or comminuted fractures. When the lower 1/3 of tibia is fractured, it is easy to damage the main blood supply artery and nourish artery. Poor blood supply at the distal end leads to slow or nonunion of fracture healing. High energy tibial fractures are often comminuted fractures with soft tissue open injury and vascular injury. Uncertain blood supply and loss of soft tissue cover are the main causes of infection in open fractures. Direct tibial fracture with nerve injury is rare, but combined with fibular neck fracture is prone to injury and peroneal nerve around the fibular neck. After injury the patient is usually able to describe the mechanism of the injury. When tibial fracture occurs, pay attention to local fixation of the affected limb to avoid further damage to peripheral blood vessels and nerves caused by the broken end of the fracture. Clinical examination is generally manifested as unstable and malformed fracture end, accompanied by significant soft tissue swelling-rays with two planes, positive and lateral, are enough for the initial diagnosis of a fracture, but are generally required to include adjacent knees and ankles. CT can make further accurate diagnosis of joint surface injury.

2.2. Treatment of Compression Fracture of Tibial Condyle

There are a variety of treatment measures for the compression fracture of the tibial condyle. In the history of fracture treatment, human beings have continuously explored and innovated, from the original manipulative reduction, plaster and splint fixation to the current nail plate system, intramedullary fixation system and different forms of external fixation frame, which all reflect human ingenuity. The ideal fixation effect should be that the fixation system can effectively maintain the length of the affected limb, eliminate rotation and angular deformity, fracture near and far joint early movement.

For simple and stable fractures with no obvious displacement, closed reduction plaster fixation is still the most used treatment under the condition of good patient compliance. When reducing the fracture, avoid repeated reduction, so as not to cause sharp fracture broken end to further damage to the soft tissue, resulting in nerve, vascular damage. It is noteworthy that complications such as deep vein thrombosis, compartment syndrome, and local pain are major risks of conservative treatment. When fracture occurs, the affected limb will quickly appear swelling, the choice of plaster support fixation should pay attention to check its appropriate degree of tightness, fixation is too relaxed, it cannot achieve effective fixation effect, if the fixation is too tight, will compress the blood supply and nerves of the affected limb, causing compartment syndrome, limb necrosis or even amputation. The incidence of infection was lower during conservative treatment with plaster fixation, but the incidence of delayed healing, nonunion or malunion was higher. Therefore, it is necessary to review the X-ray every 2 weeks to observe the healing. The duration of conservative treatment varies according to the fracture type. For spiral fractures, the expected fixation time is 8-10 weeks. For transverse fractures, the fixation period is at least 12 weeks.

Early traction is still an effective method for open comminuted fracture of tibia caused by high energy violence or under the condition that the position is still poor after manual reduction. Traction including mainly including skin traction and bone traction two. By traction, limb length can be maintained, shortening of affected limb can be avoided, and surgical reduction difficulties caused by contracture of soft tissue can be reduced. Traction does not further intrude the soft tissue, the open wound can change the dressing on time, and after the soft tissue conditions permit surgery treatment. Calcaneal nodules are commonly used for bone traction, and the weight of traction is 3-5kg.Traction weight should not be overweight in general to avoid the occurrence of calcaneal avulsion fracture. After traction, attention should be paid to strengthen needle care to avoid the occurrence of infection. Open fractures, astrophysical compartment syndrome and combined neurological or vascular injuries are generally considered to be absolute indications for surgery. For unstable fractures or conservative losers, intra-articular fractures with obvious displacement generally require surgical intervention. Open reduction and internal fixation can achieve satisfactory anatomical reduction, and can rely on internal fixation to maintain an effective position, to avoid abnormal movement of the broken end, to ensure the progress of the fracture healing process, to allow early movement, joint stiffness, muscle atrophy and other complications.

3. Experiments

3.1. Experimenter Information and Data

Experiment 1: Mr. Wang, male, 20 years old, is a student of university of electronic science and technology, a long-distance runner and a member of the university's track and field team. He has participated in provincial winter cross-country competition and university sports meeting for many times. During an intense training session before the race, I felt pain in my right knee the next day after finishing the 5k timed run. Since then exercise a little more knee pain. As a result, normal training, competition and general activities are affected. Later, according to the doctor's diagnosis and x -vay, it is a compression fracture of the right genu - tibial condyle. In the experimental process, there are a lot of experimental data to be processed, and these data are bound to have errors, so it is very important to deal with these errors appropriately. Among them, random errors are often caused by random factors, and their signs and absolute values are irregular. However, as the number of experiments increases, it is generally believed that random errors are normally distributed. Gross error mainly refers to that the observation error does not conform to the rule of a certain statistical distribution due to the carelessness of the observer, abrupt change of environmental conditions, instability of the instrument and other factors in the statistical data, which is usually a measurement

error.

Experiment 2: the sun, male, 22 years old, an air force engineering college students, in the school sports meeting last year, the student to participate in the 1000 meters of heavily armed cross-country race, and to break the school the record, after the game feel dizziness, weakness and chest tightness, then lost consciousness, and after giving oxygen, then taken to a hospital, still wake up behind the little sugar salt. Since then, the patient often felt pain in his left knee and was afraid to walk in severe cases' -vay showed: internal and external compression fractures of the left tibia. During the hospitalization, we asked the patient in detail. The patient complained that since the first half of 18 years ago, he has been running about 5,000 meters every day and has not had any history of trauma on the left knee. Random errors are often caused by random factors, and their signs and absolute values are irregular. However, as the number of experiments increases, it is generally believed that the random errors are normally distributed. Gross error mainly refers to that the observation error does not conform to the rule of a certain statistical distribution due to the carelessness of the observer, abrupt change of environmental conditions, instability of the instrument and other factors in the statistical data, which is usually a measurement error. At present, the test of systematic error of observed values generally constitutes corresponding statistics according to the statistical characteristics of observed values, and then makes a test hypothesis according to its probability distribution characteristics. The commonly used test methods are: U test, variance test, t test, etc.

3.2. Experimental Results

The knee joint is one of the more complex large joints in the body structure, with long levers at both ends and little attachment to the surrounding muscles. The capsule is broad and relaxed, attached to the periphery of the articular surface. The anterior wall of the capsule is the quadriceps bond. The skeletal ligament is the ligament. The femur is closely attached to the tibia and can limit the anterior and posterior displacement of the tibia. The two menisci on the articular surface of the tibia, both inside and outside, act as a buffer and prevent bone-to-bone collisions during jumps and strenuous exercise. Under gravity, the tibial bare impermanence is inserted into the bare interfuse as an effective bone stabilizer and ACTS as an automatic centering under full gravity load. The skeleton ACTS as a bearing surface to prevent the femur from sliding forward and is connected to the tibial ligament. This, combined with a motile quadriceps' device, forms a shock absorber that insulates the bones' joints from highly decelerating forces. The various ligaments of the knee also stabilize the femur and tibia in a variety of ranges. The thigh muscles control the rotation of the knee joint, slow it down, and act as the posterior motor muscles. The skeletal joint absorbs the force from the femur and converts this force into quadriceps femoris and skeletal ligament tension. This allows the powerful quadriceps femoris to act as a protector against the femur. The knee joint is basically unstable on the anterior and posterior side. The anterior cruciate ligament prevents the femur from sliding backward from the tibia and is strengthened by the meniscus and collateral ligament. However, the stable bones of the knee joint and the quadriceps femoris still play a dominant role.

As a long-distance runner, long distance events, every day run 3000 m a 5000 m, according to the distance between them more or on cement road surfaces on the rugged road, at the same time before exercise is not well prepared to do or not do, in this case, the body immediately enter a state of vigorous exercise, the body does not adapt to acute immediate move (when the viscosity of muscle and ligament of high viscosity, elasticity and extension, the joint activity was also small), for a long run, at the beginning of the body in a state of excitement, nervous regulation function at its best, but as the movement for a long period of time, With the increase of energy consumption and

metabolites in the body, the function of each system of the body is reduced. After a long series of muscle contraction, there will be a certain reduction in the frequency of stimulation, the maximum hypotonia, this hypotonia marks the fatigue of some exercise units, the maximum work load of the muscle, will produce the fatigue of the whole muscle exercise units. For example, when quadriceps fatigue occurs, the damping effect of the joint is weakened, and various ligaments of the knee cause the tibia and femur to lose their original balance in various ranges. Thigh control knee joint rotation is also weakened, in addition to the exercise ground is flat, the cement pavement is hard, make local burden is too heavy, more than its bearing capacity, thus causing tibia inside and outside naked micro injury. The tibia is also vulnerable to stress fractures, and the bone marrow is a vulnerable site. Because long bones are easy to damage. This is determined by the structure of the long bone itself. In the two patients, high-intensity training or cross-country race before the race was the premise of exacerbating symptoms, while the real injuries were caused by long-term above-normal stress and repetitive micro-injuries. In adolescent athletes, due to rapid body development and the most obvious bone development, the body has a large amount of calcium and phosphorus, resulting in the relative deficiency of calcium and phosphorus in the body and osteoporosis, which is also one of the factors that cannot be ignored. In a word, the knee joint tibial inside and outside naked compressibility fracture occurs, and science of training methods and training intensity, duration and the accuracy of the technique, field of moderate has obvious relationship, from the perspective of biomechanics, the parts damage due to this part of the structure and stress more than it can bear the load. In particular, the ability to reach the tissues of the knee joint. The position change of knee joint, the frequency and speed of knee joint movement and the duration of movement.

3.3. Experimental Conditions and Equipment

In this paper, modern information collection equipment is used to collect and observe the physiological information of the experimenter, mainly using Internet of things perception and recognition technology, Internet of things communication and application layer technology. These technologies and the required equipment are the main experimental conditions and equipment of this experiment. The so-called Internet of things perception and recognition technology refers to the Internet of things through the perception and recognition of information collection, is the main data source of the Internet of things. Commonly used technologies are: two-dimensional code technology, radio frequency identification RFID technology, infrared induction technology, GPS satellite positioning technology, audio and visual identification technology, biometric identification technology. Perception technology mainly involves embedding sensors around or on objects, collecting data of objects or surrounding environment, and perceiving various physical or chemical changes. Commonly used technologies include sensor technology and radio frequency identification technology. Sensor is main information source of Internet application, it is through the feelings of the state of the measured object information, and the perceived information is converted into electrical signals or other forms of information, and then the output, to satisfy the information transmission, storage, processing, record, display and control requirements, finally realizes the automatic detection and automatic control function. The national standard gb7665-87 defines the sensor as: "a device or device that can sense the specified measured part and convert it into usable signal according to certain rules, usually composed of sensing element and converting element". The node information table structure of the sensor used in this paper is shown in table 1.

The so-called Internet of things communication and application layer technology refers to the communication technology according to the transmission medium can be divided into two categories: wired communication technology and wireless communication technology. In recent years, along with the mobile communication equipment (such as: mobile phone, tablet, etc.) used

widely, wireless communication has become the fastest growing, most widely used way of communication, it is through the electromagnetic wave signal in atmospheric space information is transmitted from one place to another place, so as to realize the wireless transmission of data, mainly including radio communication technology, infrared communication, microwave and optical communications, and other forms of communication. Wireless communication network is a communication network composed of wireless communication devices connected by wireless communication technology on the basis of communication standards and protocols. In a network, communication terminals communicate by accessing and relying on the network. According to the way of access network, it can be divided into two kinds: self-organizing network and centralized network with central control point.

Table 1. Sensor node information table structure

The field names	Field type	Field meaning
SENSOR-TYPE	Small int	The sensor type of the node
NWK ADDR	Small int	The network address of the node
EXT ADDR	Small int	The MAC address
TIME	Time stamp	Data information update time

4. Discussion

4.1. Analysis of the Convalescent Fracture of Tibial Condyle in Long-distance Runners

Tibial compression fracture is a common clinical disease, among which long-distance runners are the most common, accounting for about 80% in the United States and 75% in China. At present, although various interventions are carried out in different mechanisms, effective means of prevention and treatment are still very limited. The clinical condition is severe, the fatality rate and disability rate are high, can occur a variety of damage to the vascular nerve, easy to cause limb weakness or cause vascular edema, spastic paralysis and epilepsy. The pathogenesis is complex and not fully understood, including brain energy metabolism disorder, reperfusion injury, cell apoptosis, calcium balance disorder, generation of oxygen free radicals, and increase of excitatory amino acids. In the nervous system, microtubule associated protein-2 (map-2) is the promoter of the microtubule assembly process, which exists in the neuron body and dendrites and plays an important role in maintaining the microtubule dynamic stability and shaping. Among them, the score of the treatment study for the compression fracture of the tibial condyle is shown in table 2.

Table 2. Study scores of treatment for compression fractures of the tibial condyle

Group	N	2h	24h
Sham-operated group	5	17.8-18.21	17.8-18.21
Ischemia-reperfusion exercise group	5	6.52-9.32	7.93-11.32
Pure ischemia reperfusion group	5	6.91-9.4	7.92-9.65

The effectiveness of fixation and the stability of biomechanical properties are important for fracture healing. The purpose of this experiment is to test the biomechanical properties of Lazaro ring external fixator and Taylor space external fixator. We used the standard two-ring four-needle structure, without the application of half-needle fixation, to ensure that only the strength of the fixed olive needle was measured. In terms of the Angle of puncture needle, Antoni et al. considered that 60° was more reasonable, but Cross et al. considered that 90° Angle was more suitable for the

determination of mechanical stability. We adopted a 90° included Angle of needle penetration and the pull force of olive needle was 900N.The international opinion on the tensile force is not very uniform, but generally around 500n-1300n, specifically related to the Kirshner needle diameter and experimental design. In our experiment, an olive needle with a diameter of 2.0mm was selected. When the tension reached 900N, the tension of the needle was guaranteed and the deformation of the needle was avoided. The final mechanical results show that: in the axial load compression experiment, with the increase of load, the displacements between the fracture ends all increase, but the displacements of the alizarin annular external fixator group under different axial loads are all smaller than that of the Taylor space external fixator group. We believe that Lazaro's connecting rod relates to the vertical ring of the ring, which has a better axial compressive resistance. Taylor's external fixation frame relates to the diagonal rod, and the existence of the hinge joints at both ends of the diagonal rod allows more fretting. In the torsion experiment, the variation of the angular displacement of the broken end of the Taylor space external fixator group under different torques is smaller than that of the alizarin annular external fixator group, and the difference is significant. Analyzing the reasons, we think that the inclined bar connection is more in line with the geometrically stable structure, which can provide stronger anti-torsion ability. The results of the research on the treatment of the compression fracture of the tibial condyle in long-distance runners are shown in figure 1 below.

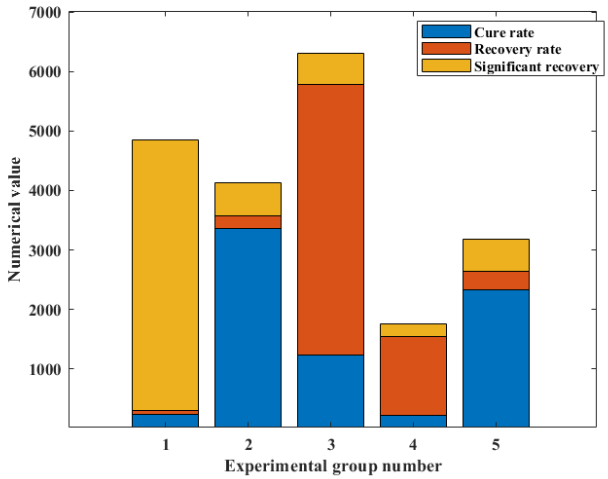

Figure 1. The effect of study on the treatment of compression fracture of tibial condyle

As can be seen from the data in figure 1, long-distance running exercise has a great deal of influence on the compression fracture of the tibial condyle, which has a very positive influence on the rehabilitation of the exercise function of the subjects, increasing the cure rate by 35%, and having a significant effect on the recovery of the compression fracture of the tibial condyle in the later period, increasing the recovery rate by 30%.

From the data in figure 1, long-distance running has a great deal of influence on the compression fracture of the tibial condyle. After a very positive model was made for the recovery of the exercise function of the experimenter, map-2 immunopositively substances in the bleeding center of the exercise group and the simple hemorrhage reperfusion group were reduced or absent, and immunopositively substances in the surrounding area of the hemorrhage were increased. However, during the second and third weeks of the experiment, map-2 immunopositively substances in the bleeding area of the hemorrhage reperfusion exercise group were significantly higher than those in the control group. In addition, map-2 is a component of nerve cytoskeleton and mainly exists in dendrites and cell bodies of nerve cells. It is of great significance to the development and

differentiation of neurons, the maintenance of cell structure, the growth of neuronal processes and the axonal transport of mitochondria. Microtubule assembly and its dynamic stability depend on the regulation of some related protein factors, among which map-2 is a very important regulator. Some studies have suggested that all map-2 isoform factors can induce tubulin assembly in vitro and promote tubulin growth by increasing the growth rate and repair frequency of microtubules. Microtubules play an important role in maintaining the nerve cytoskeleton and mitosis, and map-2 is the promoter of microtubule assembly and plays an important role in the acquisition of neuron polarity and the growth of neuron dendrites. The effect of long-distance running on the expression of map-2 in the compression fracture of the tibial condyle is shown in figure 2 below.

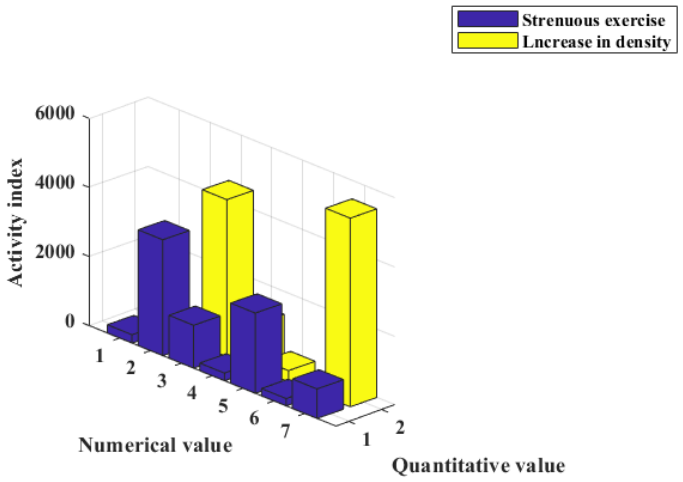

Figure 2. Effects of strenuous exercise on map-2 expression

It can be seen from the data in figure 2 that strenuous exercise has a positive promoting effect on the expression of map-2, and the increase of map-2 content and density will effectively improve the motor dysfunction caused by the compression fracture of the tibial condyle.

4.2. Feasibility Analysis of Compressible Fracture of Tibial Condyle and Proper Physical Exercise

It can be seen from the data in figure 2 that strenuous exercise has a positive promoting effect on the expression of map-2, and the increase in the content and density of map-2 will effectively improve the guarantee of physical health of athletes with the development and progress of medical science. But the athletes' injuries have the following characteristics. First, the nervous system and the organs of each system are not mature; a variety of nerve reflex, the degree of arousal and muscle tension is low, accompanied by drowsiness, fatigue and other symptoms. Second, there is a developed embryonic hair layer under the ependyma, which is easy to cause intracranial hemorrhage, and then lead to neurological sequelae. Thirdly, the vascular anatomical and physiological factors as well as the high vulnerability of oligodendrocytes make the patients easy to soften around the ventricle, which is also the main reason for the sequelae of the nervous system and the intellectual development disorder. Therefore, as one of the high-risk groups of patients with cerebral palsy, brain injury and mental retardation, adolescents have been recognized internationally. How to improve the rescue success rate of adolescent patients, reduce the sequelae of their nervous

system as much as possible, improve the quality of life and the quality of the birth population of adolescents, ensure their normal growth and development, and reduce the burden of family and society, is the most concerned issue in the early intervention research at home and abroad in recent years. The effect of basketball on the improvement of mental development index in hemorrhagic brain-impaired adolescents is shown in figure 3 below.

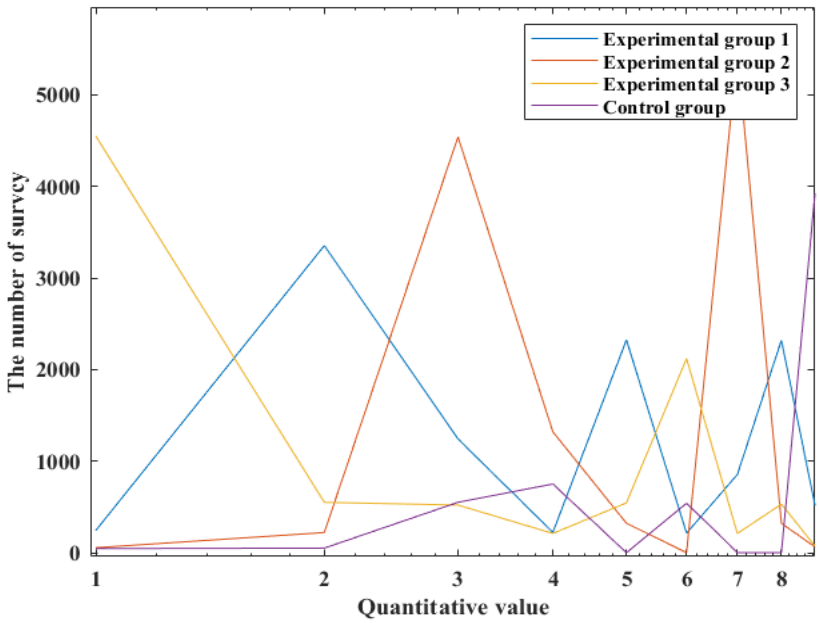

Figure 3. The influence of basketball on mental development index

From the data in figure 3, basketball sports have a higher impact on the improvement of mental development index of hemorrhagic brain-damaged adolescents, which can increase the mental development index of adolescent patients by 20% compared with the control group

As can be seen from the data in figure 3, to improve the basketball hemorrhagic cerebral damage adolescent mental development index is higher, the influence of compared with control group, to teenagers because of brain circulation function is not fully mature, cerebral white matter vulnerable to affect the function of nerve system, especially the sports developmental disorders show the PDI index lower than normal. The early intervention program we used specifically reinforced the promotion of early movement and exercise, especially basketball, based on the comprehensive education of adolescents. Moreover, more early rehabilitation methods were used to solve some adolescents and children with central coordination disorder with abnormal neurological signs. Report 13-year-old boy right hemispherectomy experience, through the functional rehabilitation, the brain motor area for restructuring, the left hemiplegia hand activity, positron emission tomography showed the orientation of cerebral function in sports is in the left hemisphere supplementary motor area, motor area, under the island after the brain and frontal part, suggesting the contralateral hemisphere after resection of movement function reorientation in cortex motor area instead of the original motor cortex. Therefore, it is believed that the enhanced physical rehabilitation training will further reorganize the sports arena in the young with brain injury. The results of this study also show that promoting early sports, namely basketball, can greatly improve the motor function of teenagers. The experimental results are shown in figure 4 below.

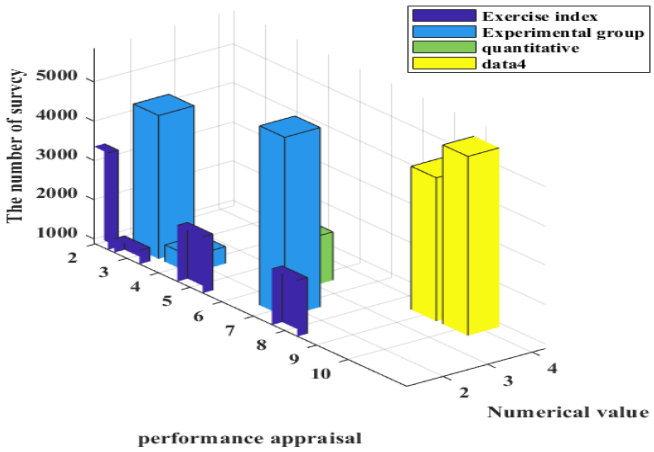

Figure 4. Changes in performance with new training methods

It can be seen from figure 4 that, according to the experimental results, the non-drug treatment method of reasonable scientific exercise is better than the general drug treatment. The amount of exercise of the patients of long-distance runners in the experiment is 5.5% higher than that of the general athletes. Therefore, reasonable scientific exercise is more effective.

5. Conclusion

(1) This paper analyzes the current problems in the treatment and research of the compressibility fracture of the tibial condyle in long-distance runners, discusses the problems and proposes the corresponding solutions. This paper briefly introduces the development and influence of the related creative methods, and studies the related diseases and diagnosis methods, and analyzes the advantages and disadvantages of the current treatment methods.

(2) The runner compressibility fracture tibial condyle inside and outside restorative for analysis, puts forward the corresponding principle and theoretical guidance, the influence of the long distance movement compressibility fracture of tibial condyle inside and outside is numerous, the experimenter motor function recovery have a positive effect, improve the cure rate 35%, compressibility fracture of tibial condyle inside and outside of the late rehabilitation has significant effect, the recovery rate of increase of 30%.

(3) The feasibility and superiority of the treatment method designed in this paper, that is, scientific and reasonable exercise, in the treatment of physical recovery were discussed and verified. The experimental results show that the teaching training should be scientific and the training plan should be based on the principle of practice to prevent the local burden of knee joint from being too heavy. According to the statistical results of questionnaire and other survey methods, the effect of non-drug therapy in scientific form was significantly improved compared with that of general drug therapy. The rehabilitation index of the patients in the long-distance runners in the experiment increased by 20%, and the exercise development index increased by 12.5%.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this

study.

Conflict of Interest

The author states that this article has no conflict of interest.

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