Shooting Athlete Medical Rehabilitation of Cervical Spine Injury

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Abstract
Shooting is a traditional dominant sport in China. It has won infinite honors for our country in previous Olympic Games. The sports injuries of shooters are caused by years of overload training, long-term static training and other factors. According to the study, the injury rate of elite shooters in China is 73.3%. There are significant differences between men and women, and women are higher than men; the stage of special improvement and best competitive state is higher; the injury rate in preparation period is higher; there is no significant difference between sports level, competition rank and injury rate; the injured parts are mainly shoulder and cervical vertebra. With the prolongation of training years, the ranks of sports and competitions increased, shoulder injuries decreased and waist injuries increased; shoulder injuries were common in males and more in females; the nature of injuries was mostly chronic injuries; the causes of injuries were: lack of preparatory activities, poor recovery, participation in other activities, poor awareness of protection, local overload, tiredness of training, old injuries, less physical training, education. The level of trainers is not high, and there are significant differences in the measures taken by athletes after injury. On this basis, the means and measures of rehabilitation training are put forward. According to the cervical spine injury of shooting team, this paper summarizes the causes, mechanism and rules of common injuries in shooting, and the treatment plan, which can provide reference for the treatment of injuries in shooting sports.

Key words: Shooting Athletes, Cervical Spine Injury, Rehabilitation Research, Injury Treatment

Disparos Atleta Rehabilitación Médica de la Lesión de la Columna Cervical

Resumen
El tiroteo es un deporte tradicional dominante en China. Ha ganado innumerables honores para mi país en sucesivas olimpiadas. Las lesiones deportivas de los tiradores son causadas por años de entrenamiento sobrecargado, entrenamiento estático prolongado, etc. Los estudios indican que la tasa de lesiones de nuestros mejores tiradores es del 73.3%. Existen diferencias significativas entre los hombres y las mujeres, que son superiores a los hombres; Las fases especiales de mejora y el mejor estado de competencia; Mayor incidencia de lesiones en la fase preparatoria; No hay diferencias significativas en el nivel deportivo, la posición de la carrera y la lesión; Las lesiones son principalmente en el hombro y las vértebras cervicales. A medida que se amplían los años de formación, aumenta el número de equipos deportivos, disminuye la lesión en el hombro y aumenta la lesión en la espalda; Las lesiones en el hombro son comunes en los hombres y más en las mujeres; La naturaleza de las lesiones es más o menos crónica; Las causas de las lesiones son: falta de preparación, mala recuperación, participación en otras actividades, falta de conciencia de protección, sobrecarga local, fatiga de entrenamiento, lesiones mayores, falta de ejercicio físico, educación. El nivel de los entrenadores es bajo y las medidas adoptadas tras la lesión de los atletas varían significativamente. Sobre esta base, se proponen métodos y medidas para la formación de rehabilitación. En este artículo se resumieron las causas, mecanismos, leyes y opciones de tratamiento de las lesiones comunes en el movimiento de tiro, de acuerdo con las características de las lesiones en la columna cervical del equipo de tiro.

Palabras clave: Atletas de Tiro, Lesión de la Columna Cervical, Investigación de Rehabilitación, Tratamiento de Lesiones

1. Introduction
Shooting is a traditional dominant sport in our country. It has won infinite honors for our country in previous Olympic Games. It is generally believed that shooting requires more mental than physical requirements of athletes, but shooting is a long-term over-load training, long-term static training, and other sports are also
challenging extreme sports. The author has been engaged in sports team doctors for more than ten years and found that there are many kinds of shooting guns and competition types and fewer acute injuries, among which, during the working period of the national shooting team, we have seen more. Most of them are cumulative injury [1].

With the continuous development of shooting sport in China, shooting sport has become one of the key development projects in our country, especially the change of the new rules. The requirement of shooting technical level is becoming more and more important. It also increases the intensity of competition and the intensity of competition [2-4]. The amount of training and exercise of shooters in daily training and competition has also increased greatly, while their performance has improved, the probability of sports injury has also increased greatly. Shooters have more sports injuries and higher risks. When athletes have sports injuries, they will directly affect their competitive status and performance. Prevention of sports injuries has become an increasingly important question for coaches and athletes. Topic [5-7]. Especially cervical spondylosis, in the daily technical training, the athletes’ training intensity is greater, and in the process of pursuing good results, they often carry out long-term special technical training. Shooting athletes have more training frequency per week, and their daily technical training is far greater than their physical quality training [8]. When athletes have cervical spondylosis injury, as long as it does not affect the training, they will continue to train, which will often result in generations. Compensation occurs. Chinese style

Cervical spondylosis is a degenerative disease based on pathological changes. It mainly includes cervical osteoarthritis, vertebral osteoarthritis, proliferative cervical spondylitis, cervical nerve root syndrome, cervical disc herniation and so on. The clinical manifestations of cervical spondylosis are complex, which is related to the location of the lesion, the degree of involvement and individual quality, including neck and back pain, limb numbness, limb weakness, dizziness, nausea and vomiting, which seriously affects the normal life and work of patients [9]. Manual traction reduction of cervical spine is a common treatment for cervical spondylosis. Symptomatic treatment based on the characteristics of cervical joint lesions can relieve muscle spasm, relieve nerve compression and improve local blood circulation [10-11]. Comfort nursing is a kind of nursing method to improve patients’ comfort through various ways, and it has significant therapeutic effect in many diseases [12]. In this paper, the treatment of cervical spondylosis patients with cervical spondylosis by manipulative traction reduction combined with comfortable nursing has achieved remarkable curative effect. Through the adjustment of injury type, injury location, injury nature and injury severity, the regularity is summarized to prevent sports injury and reduce the pain endured by athletes in training, so as to do a little for the cervical spondylosis patients of shooters.

2. Proposed Method

2.1. Causes of Athlete Injury

Inadequate preparation and relaxation activities. Pre-exercise preparation and post-exercise relaxation are the most easily overlooked points of athletes. In training, the performance of young shooters is very active, because they are in the best stage of growth and development, the recovery of various functional levels of the body is relatively rapid, often not very sensitive to the response of fatigue state, and there is no specific concept of the importance of preparation and relaxation activities, so they do not pay enough attention to the preparation activities before training and the relaxation after training. In the past, fatigue caused by training can not be relaxed in time so as to eventually lead to the accumulation and outbreak of injuries, which will seriously affect the professional career of athletes. Lack of special strength training, the majority of young athletes in the initial training, using spare time for training, training time is limited, so more is to carry out small-load training with special technology, such as short-term adherence to the gun lifting to enhance endurance, the number of times to carry out complete movements of the gun lifting exercises to experience action; in mid-term training, athletes often pursue action standards. For the purpose of consistency and improvement of sports performance, more special skills and endurance training are given priority to; in the latter training, athletes mainly emphasize the psychological level of training. The training of special strength in all stages of youth training is most easily ignored, but in fact, athletes need a certain degree of strength support in the training of special skills. For example, if a pistol thrower wants to maintain a long-term stability and shooting moments of stability, he needs a certain shoulder strength, and if a flying saucer athlete wants to hit the target quickly after leaving the target, he needs less support. Not the role of core forces. Lack of specific strength training, to a certain extent, will make the body joints due to lack of muscle protection, resulting in chronic strain, increase the risk of injury athletes. In training, incorrect technical movements can easily cause sports injury because of the unsettled technical movements of young athletes or the incorrect understanding and execution of technical points. In long-term training, incorrect movements will not only hinder the improvement of sports performance, but also have a negative impact on athletes themselves. For example, in the training of rifle horizontal shooting, athletes are required to “elbow out” landing point in a proper way. Position, because of the different proportion of upper and
lower arms of each person, there are differences in the landing position. Shoulder strain is easy to occur during endurance training; the wrong position of the foot touching sand bags in kneeling shooting training will cause certain injury to ankle, etc. On the one hand, incorrect movement techniques will hinder athletes to establish movement standards and improve their sports level. On the other hand, it will easily cause excessive consumption of some parts of the athletes’ body and increase the incidence of injuries.

2.2. Summary of Core Training

In recent years, the discussion on the application of core strength and core stability in competitive sports has been heated. Foreign scholars divide the application fields into sports training field and sports rehabilitation field. [13] They believe that in the field of sports training, core stability emphasizes that the stability of human body is the basis of sports, is the support for optimizing energy production, and core strength emphasizes muscle explosion. In the field of rehabilitation, faries and Greenwood point out that the core stability is the ability to stabilize the spine when the muscles around the spine move. The core strength is the ability to produce strength mainly by contracting and increasing intra-abdominal pressure. Professor Chen Xiaoping believes that the core stability is to control the stable posture of pelvic and trunk muscles during exercise, create a fulcrum for upper and lower limb movements, and coordinate upper and lower limb forces, so as to optimize the generation, transmission and control of strength. From the above point of view, it can be seen that both core strength training and core stability training are very important for athletes in the field of sports training and rehabilitation [14], and they are complementary and interrelated, but we should pay attention to distinguishing the characteristics of core strength training and core stability training, combining with the characteristics of sports and the needs of athletes themselves. The special technical characteristics of shooting events include rifle, pistol and flying saucer. Shooters should possess not only strong psychological quality, but also excellent special physical quality. For example, pistol events require standing with one arm (except for disabled athletes), which requires that athletes not only maintain the stability of the trunk when standing, but also ensure the fixed strength of the joints. Rifle events are the most precise events in shooting and have three types: kneeling, lying and standing. Posture, therefore, requires higher stability and coordination for rifle athletes; flying saucer athletes in the event to hit the moving target quickly and accurately after the target, so the need for rapid muscle coordination and brain nervous system response ability. According to the characteristics of special shooting techniques, it can be found that stability, coordination and reaction ability are very important guarantees for athletes to improve their performance. Coordination performance can make the human body and guns form a whole consistent structure to help athlete’s better complete technical movements, which is the basis of the whole special techniques. Stability can help athletes maintain the stability of the instantaneous shooting while shooting. Fixed state is an important guarantee of athletic performance. Reaction ability can help athletes to better link up and improve the inadequacy of striking technique when completing technical movements, which is the key point to achieve the ultimate excellent results.

According to the analysis of the characteristics of the shooting events, there are three kinds of postures in the rifle events: kneeling, lying and standing. In the early stage of youth training, standing shooting is the main posture. The characteristics of pistol and flying saucer events also require athletes to maintain standing posture for a long time. This requires the developed erector muscle strength to protect the spine and maintain the stability of upper limbs. The lower limb strength acts as the “base” of human body’s standing support. Joints are locked up, and long-term maintenance often leads to chronic strain. The waist is the necessary link between upper and lower limbs. It plays a key role in connecting the upper and lower limbs. Rifles and pistols require athletes to stand independently and maintain the stability and integrity of the body. UFO events need to rely on the cooperation of nerve control and waist-abdomen strength to improve their rapid reaction ability in shooting. In addition, the pistol project single-arm lifting, UFO project double-arm lifting, both without arm support to complete the movement, so athletes also need to have a strong shoulder fixed force.

2.3. Cervical Traction

Cervical traction is the main way to relieve symptoms of cervical spondylosis, as shown in Figure 1. Because effective traction can relieve the pressure of nerve, blood vessel and spinal cord, and quickly relieve the symptoms of cervical spondylosis. Specifically, cervical traction relieves muscle spasm, relieves pain symptoms, enlarges intervertebral space and foramen, facilitates the reduction of the exuded nucleus pulposus and annulus fibrosis, relieves and relieves nerve root compression and stimulation, promotes the absorption of nerve root edema, relieves pressure on vertebral artery, promotes blood circulation, and is conducive to local congestion, swelling, hyperplasia and relaxation of adhesion. Joint capsule, improve and restore hook joint, adjust facet joint dislocation and spondyloolisthesis, adjust and restore the damaged internal and external balance of cervical spine, and restore the normal function of cervical spine.
Cervical spondylosis is a group of clinical symptoms, such as head, neck, shoulder, arm, upper limb, middle back, chest pain and other symptoms, and even limb dysfunction, caused by chronic injury or degeneration of cervical spine and cervical soft tissue, compression or stimulation of cervical blood vessels, nerves and spinal cord. The mild patients have headache, dizziness, nausea and vomiting, neck and shoulder pain, upper limb numbness, weakness, tinnitus, blurred vision, chest tightness and panic, and the serious patients can also lead to limb paralysis, urinary and urinary disorders, and even endanger life. Cervical spondylosis does not include cervical fracture and dislocation and bone tumors caused by acute trauma. There are many factors that cause and aggravate cervical spondylosis, and frequent use of pillows during sleep is one of the important reasons. For the average person, at least one fourth to one third of the day is spent in sleep. Therefore, if the pillow is used improperly or not, it is easy to cause dizziness or exacerbate cervical spondylosis. Conversely, if we pay attention to and adjust the posture of cervical spine in sleep, it can also have preventive and therapeutic effects. During sleep, pillow is an important tool to maintain the normal position of head and neck, that is, physiological curvature. This physiological curve not only guarantees the balance of external cervical muscles, but also is an indispensable condition to maintain the physiological structure of cervical spinal canal. If the pillow is chosen and used improperly, it will not only destroy the external balance of maintaining normal cervical curvature, but also directly affect the volume of cervical spinal canal and the physiological structure of local tissues. Therefore, the height of the pillow must be highly valued. As the saying goes, “Easy to sleep on”, in fact, this is not the case. Normally, the physiological curve of the cervical spine is protruding. In supine position, if the pillow is too low and the head and neck are too backward, the protruding curvature will be increased. Not only the muscles and ligaments in front of the vertebral body are prone to fatigue due to excessive tension, but also chronic injury can be caused. At the same time, the posterior tissue of the spinal canal can protrude forward into the spinal canal, increasing the pressure in the spinal canal; excessive head and neck backward also lengthens the spinal canal, shortens the spinal cord and nerve root in the spinal canal, and is prone to symptoms under the action of other factors. If the pillow is too high and the head and neck bend forward excessively, the muscles and ligaments behind the vertebral body will be easily damaged, which will cause or aggravate cervical spondylosis. Therefore, whether healthy people or people with cervical spondylosis should pay attention to maintaining the physiological position of cervical lordosis in order to prevent or accelerate cervical degeneration. The ideal pillow core for cervical spondylosis protection should be thermal compression sponge pillow. It is suggested that people with cervical spondylosis dizziness choose Kangjin Shule pillow made of high-temperature compression sponge, because the first shape of such pillow conforms to the normal physiological curve of the human body as a whole, so that the normal physiological curve of the supine, lateral, cervical spine and respiratory tract can be restored during sleep, while its supporting force and soft. Hardness is the most suitable of all kinds of pillows because of the special sponge made by hot compression under high temperature. It is most in line with ergonomic principle. Combining with the magneto therapy effect formed by Nd-Fe-B magnetite, the Trinity is more conducive to improving cervical discomfort,
effectively promoting blood circulation, eliminating cervical fatigue and soreness, relieving cervical spine dizziness, and reducing unnecessary turning times during sleep. In addition, it is also very necessary to pay attention to various daily protections, such as. 1. Avoiding and reducing acute injuries, such as avoiding lifting heavy objects, not emergency braking, etc. 2. Wind-proof, damp, avoid midnight, bathing in the morning or being attacked by wind and cold, wind and cold make local blood vessels constrict, blood flow decrease, hinder tissue metabolism and waste removal, dampness hinders skin evaporation. 3. Actively treat local infections and other diseases. 4. Correct bad posture and reduce strain. Neck exercises should be done every 1-2 hours to reduce muscle tension. To prevent the occurrence of cervical spondylosis, the most important thing is to improve sitting posture and do shoulder and neck exercises intermittently while working hard.

3. Experiments

A total of 100 athletes with cervical spine injury treated from January 2018 to January 2019 were randomly divided into reduction group and combination group with 50 cases in each group [15]. In the reduction group, there were 31 males and 19 females, with an average age of 52.74 (+14.72) years and an average course of disease of 10.27 (+4.07) years. There were 21 cases of nerve root type, 4 cases of spinal cord type, 5 cases of sympathetic type, 6 cases of vertebral artery type and 14 cases of mixed type. In the combined group, there were 27 males and 23 females, with an average age of 58.21 (+16.71) years and an average course of disease of 11.57 (+4.72) years. There were 23 cases of nerve root type, 3 cases of spinal cord type, 6 cases of sympathetic type, 7 cases of vertebral artery type and 11 cases of mixed type. There was no significant difference in general data of gender, age, course of disease between the two groups (P > 0.05), which was comparable. Inclusion criteria: meeting the diagnostic criteria for cervical spondylosis; age < 80 years old; all signed informed consent and passed the examination by the hospital ethics committee. Exclusion criteria: age < 18 years old or > 80 years old; mental or cognitive impairment, unable to cooperate with the treatment; combined with other cervical and dorsal neuro-articular diseases such as shoulder periarthrosis; combined with severe cardiovascular and cerebrovascular or other diseases can not tolerate treatment; poor treatment compliance, unable to complete treatment. Treatment method: The reduction group was treated with cervical traction reduction, and the combined group was treated with comfort nursing on the basis of the control group, all of which were treated for 2 weeks. Manual traction reduction of cervical spine. (1) Ask the patient to lie flat, relax deeply and rotate to the maximum angle on the left side. (2) Operator’s right hand support patient’s occipital part, thumb positioning in the lesion cervical spinal process, left hand support mandible, continuous traction for several minutes. (3) The patient took the recumbent position, and the operator stood behind him. The soft tissue of the neck was treated by pressing, pinching, plucking and tendon-regulating manipulations for about 5 minutes. (4) Ask the patient to bend his head slightly forward and the operator to press his thumb on the spinal process of the cervical spine to determine the direction and position of the dislocation, then stand on the same side of the dislocation direction, press the thumb near the dislocation spinal process, hold the patient’s head tightly from the mandible with the elbow of the other arm, and ask the patient to bend and rotate the neck forward with the operator’s direction until the maximum, then continue to rotate with a little effort, and push the dislocated spine with the thumb at the same time. Suddenly feel slippery or hear thunder. The patient’s head was restored to the median position, patted and relaxed, and then kneaded and rubbed for about 3 minutes. Comfort Nursing (1) Process Comfort. From patients to hospitals, triage nurses, outpatient clinics and treatment process warm and thoughtful, medical staff polite and thoughtful language. The environment is comfortable. Create a good treatment environment, arrange appropriate amount of flowers, adjust the appropriate temperature, and reduce noise and so on. (3) Psychological comfort. Because of the quality of life, patients with cervical spondylosis are prone to anxiety, irritability and other negative emotions. They can communicate according to the individual characteristics of patients’ culture and age to promote patients to relieve psychological distress. Health education. Instruct patients and their families to correct bad posture and understand the importance of correct life, including keeping neck straight, sleeping in rigid bed, supine sleep, etc. Music guidance. Responsible nurses master part of the knowledge and means of music therapy, according to patients’ music preferences, play soothing and cheerful music in the course of treatment, in order to relax patients’ mood.

Observation indicators: 1. According to the symptoms and limb functions of patients after treatment, the clinical efficacy can be divided into cure, effective and ineffective. Cure: complete remission of symptoms, complete recovery of limb function, no impact on daily life and work; effective: partial remission of symptoms, partial recovery of limb function, slight impact on daily life and work, but still can continue; ineffective: symptoms, limb function has not improved or even worsened, life and function has been seriously affected. Total effective rate = cure + effective) / total number of cases * 100%. (2) Quality of life score. The concise quality of life scale (SF-36) was used to evaluate the quality of life of patients before and after treatment. It mainly includes 8 dimensions, 36 items, 0-100 points. The higher the score, the better the quality of life. Statistical methods: the measurements were expressed as mean plus minus standard deviation (x + s). Two
independent samples t/t’ test was used to compare the mean values between the two groups, and paired t test was used to compare the mean values before and after self-control. The constituent ratio and rank data of the two groups were compared, expressed as frequency (twin), constituent ratio (P) and average rank (R_1), and Mann-Whitney test was used. Fisher_2 test was used to compare the percentages of the two groups, and data were collected by SPSS 19.0 medical statistical software. Alpha = 0.05.

4. Discussion

This paper improves the routine nursing measures of shooters after anterior cervical decompression and internal fixation in perioperative period, and establishes a special medical nursing combined group to carry out psychological nursing intervention and health education for patients, so as to help them correct their bad habits. Shooting athletes are mostly young patients with a long course of illness. Some patients show negative psychology to the disease by blindly seeking medical treatment online and misdiagnosis in local hospitals during their illness. Before admission, most patients were depressed, depressed and anxious, and feared the operation process and prognosis, so they had a heavy mental burden. The damage cause statistics are shown in Figure 2. The ratio of damage properties is shown in Figure 3. Li and others use the “solution-oriented” active thinking mode of nursing to give specific and meticulous response measures to patients’ behavior and psychological changes, which has a very positive effect on patients’ rehabilitation and prognosis. Li Qian et al. used intensive psychological nursing to effectively alleviate the anxiety and depression of patients with meningioma during perioperative period. It has a positive role and important significance in promoting patients’ recovery, reducing complications, and improving patients’ quality of life and satisfaction. ZHANG and other psychological interventions for cancer patients effectively alleviate depression and even despair of patients before and after treatment, and are full of confidence in treatment.

![Figure 2. Scale of damage causes.](image)

Note: 1 is lack of preparatory activities, 2 is participation in other activities, 3 is poor recovery, 4 is tired of training, 5 is less physical training, 6 is old injury, 7 is poor technology, 8 is poor protection consciousness, 9 is excessive local training, 10 is low level of coaches, 11 is additional training.

![Figure 3. Property scale map.](image)
In this study, patients in the experimental group were given active guidance and health education before operation to help patients correct their bad habits of looking down at mobile phones for a long time. Good health education and effective psychological nursing ensured the implementation of various nursing measures after operation. On the basis of routine nursing, intensive and detailed nursing measures were taken to supervise patients wearing neck brackets for 24 hours, and psychological encouragement, guidance and supervision were given in rehabilitation exercises, which lasted until the follow-up after discharge. Because of effective preoperative psychological intervention and meticulous and quantified nursing measures after operation, the scores of SAS and SDS in the experimental group were lower than those in the control group on the 7th day after operation (P < 0.05), significantly lower than those in the control group on the 3rd month after operation (P < 0.05), mostly eliminating anxiety and depression at admission, and the improvement rate of function in the experimental group was significantly higher than that in the control group on the 6th month after operation (P < 0.05). Improvement. In this study, psychological nursing intervention was applied to patients with Pingshan disease undergoing anterior cervical decompression and internal fixation, and some results were achieved, and some experiences were summarized. Most of the patients in this group are young patients, usually accompanied or accompanied by parents. The introduction of disease knowledge and health education should involve family members while popularizing patients. Psychological nursing and health education should be integrated in order to achieve results. Nursing staff and family members help patients correct the bad habits of long-term bowing, especially telling parents to do a good job of supervision. While improving the anxiety and depression of patients, first of all, alleviate the anxiety and impatience of family members, let family members fully understand Pingshan disease, understand that active cooperation with the work of medical staff can effectively reduce anxiety and depression and other negative psychology.

There was no significant difference in SAS score between the two groups at admission (P > 0.05); SAS score in the experimental group decreased 7 days after operation (P < 0.05); SAS score in the experimental group was lower than that in the control group at 3 months after operation (P < 0.05); SAS score in the experimental group was lower than that in the control group (P < 0.05). See Table 1. There was no significant difference in SDS score between control group and experimental group at admission (P > 0.05); SDS score of experimental group was lower than that of control group at 7 days and 3 months after operation (P < 0.05). See Table 2. There was no significant difference in the functional improvement rate between the two groups at 3 months after operation (P > 0.05), but at 6 months, the functional improvement rate of the experimental group was significantly better than that of the control group (P < 0.05). See Table 3.

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<th>3 Months after surgery</th>
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Many patients have fear, worry and tension about the disease before operation, and they are more resistant to the operation. Therefore, patients should be encouraged and guided actively, and solutions should be established with a cooperative attitude. At the same time, doctors and nurses should explain the prognosis of Pingshan disease in detail, increase the authority and credibility of information, so that patients and their families can see the hope of recovery, accept surgical treatment psychologically and have full confidence. When the patients begin to move conveniently after operation, the nursing staff and rehabilitation technicians together
guide the patients to carry out rehabilitation training. To make the patients and their families realize that rehabilitation training is very important for the prognosis of Pingshan disease after operation. After discharging from hospital, patients should be closely followed-up, telephone guidance or visiting the hospital to urge patients not to discontinue the exercise of hand and forearm muscle strength, for those who can not adhere to rehabilitation exercise, parents should jointly supervise patients to adhere to exercise. The importance of functional exercise should be emphasized repeatedly by patients and their families when they come to the hospital for reexamination. Muscle strength grading of patients should be evaluated and detailed records should be made. This study found that the SAS and SDS scores and functional improvement rate of patients with Pingshan disease after anterior cervical decompression and internal fixation were better than those of the control group. Therefore, effective psychological intervention during perioperative period and follow-up monitoring of patients’ psychological changes and rehabilitation after operation, guidance and supervision of patients to adhere to rehabilitation exercises are of great significance in reducing complications, improving negative emotions such as depression and anxiety of shooters, promoting patients’ rehabilitation, improving surgical treatment effect and rehabilitation effect.

5. Conclusions

Cervical spondylosis is mainly a clinical syndrome caused by degeneration of cervical intervertebral disc and bone hyperplasia of cervical spine. The main pathological changes include degeneration of intervertebral disc, hematoma of ligament-intervertebral disc space, bone spine at the edge of vertebral body, sagittal diameter and volume reduction of vertebral canal, which lead to dehydration and degeneration of intervertebral disc, joint loosening, and progressively degeneration of intervertebral disc and protrusion of nucleus pulposus. Manual traction reduction of cervical spine is the preferred treatment for cervical spondylosis. Manual traction and reduction are carried out according to the pathological changes of cervical joints and pain symptoms, to correct cervical anatomical dislocation, limit cervical spine activity, relieve muscle spasm, etc. Meanwhile, manual treatment can promote local blood circulation, stimulate sympathetic nerve, alleviate vasospasm, and improve blood circulation to improve nerve function and so on. Brain blood supply, effectively relieve pain and dizziness and other symptoms. However, after some patients entered the hospital, they were in a state of mental tension and could not relax during the treatment, which made the treatment effect poor and the treatment patients’ comfort in the course of treatment. The results of this study show that the treatment of cervical spondylosis patients with manual traction reduction combined with comfortable nursing can significantly improve the treatment efficiency, improve the SF-36 score, which is consistent with the results of Jiang Guiling et al. It shows that comfortable nursing can improve the efficiency of manual traction treatment of cervical spondylosis and the quality of life of patients. Through the health education of comfortable nursing, patients can understand the related knowledge of cervical spondylosis, correct their wrong habits and habits, establish confidence in treatment and master the methods of self-rehabilitation; comfortable nursing, through psychological nursing, pays close attention to patients’ psychological state, timely alleviates unhealthy emotions, combines comfortable environment and music therapy, enables patients to always be in a relaxed state in the course of treatment. Treatment compliance has been greatly improved. In conclusion, manual traction reduction combined with comfortable nursing for cervical spondylosis patients in shooting athletes can effectively improve the treatment efficiency and quality of life of patients, which is worthy of promotion in the treatment of cervical spondylosis.

References
