

Therapeutic Efficacy Observation of Hitting Hot Pack for the Treatment of Thoracic and Lumbar Vertebrae Compression Fractures of Martial Arts Athletes

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Abstract: In today's society, the prevalence of pure thoracic and lumbar vertebrae compression fractures has increased to a certain extent. This phenomenon is particularly evident in the martial arts athletes. The main reason is that the risk of martial arts is higher and the degree of injury is also higher. As a result, thoracic and lumbar vertebrae of martial arts athletes are prone to compression fractures. At present, the hospitals have many methods for treating compression fractures. In order to effectively treat the symptoms, the therapeutic efficacy of hitting hot pack for the treatment of thoracic and lumbar compression fractures of martial arts athletes will be observed and analyzed, so as to alleviate the pain caused by the disease to the patients and promote healing of the affected area and eventually restore the health of martial arts athletes.

Keywords: Compression fractures; Therapeutic efficacy observation; Hitting hot pack

1. Introduction

The thoracic and lumbar vertebrae compression fracture is a common vertebrae dislocation fracture in modern medicine. It has a high prevalence rate not only in middle-aged and elderly people in our country, but also in martial arts athletes and dancers engaged in dangerous movements. If the disease is not timely treated and conditioned, some complications such as localized swelling and pain, dislocation of the joint will occur later. In severe cases, it will lead to difficult actions and a significant reduction in quality of life. At present, there are various methods and drugs for the treatment of thoracic and lumbar compression fractures in clinical practice, and the therapeutic efficacies are also different. The hot pack contains the Chinese herbal medicines, such as rhubarb, safflower, radix aristolochiae, semen strychni, musk, angelica sinensis, turmeric, fructus aurantii, dragon's blood, notopterygium, atracylodes macrocephala koidz and poria cocos, which have the functions of swelling and phlegm, pain relief, easing of tendons and joint reinforcement. According to the observation of the clinical treatment effect of the patients, the therapeutic efficacy of the hitting hot pack is analyzed, and the clinical effect of hitting hot pack on the thoracic and lumbar vertebrae compression fracture is explored.

2. Traditional Treatment Methods

In recent years, with the continuous increase of the number of martial arts athletes, the number of the thoracic and lumbar vertebrae compression fractures is also rising, which has a great impact on the life and sports career of many martial arts athletes. Without reasonable and timely treatment, it is easy to cause the patients' thoracic and lumbar vertebrae deformation, dislocation, local congestion, swelling and pain, leading to the severe reduction in activity and quality of life. Nowadays, most patients still choose the traditional treatment methods. In recent years, the Chinese medical community is also looking for new and more effective treatment methods, and has achieved good results. The following is the statistics of the number of patients suffering from thoracic and lumbar vertebrae compression fractures during the period from 2012 to 2017 in Xicheng District, Beijing.

2.1. Exercise training and adjuvant therapy

The pure thoracic and lumbar compression fractures suffered by martial arts athletes are caused by gravity-induced compression. After receiving basic treatment, the patients also need to a certain degree of exercise training. If the athletes stay in bed for a long time after fracture, their bodies will become more rigid. And the damaged part of the fracture will have poor blood flow and blockage, resulting in insufficient blood and impaired nerve repair.

Eventually the patient will not be able to perform normal operations and the body mass will gradually decline [1].

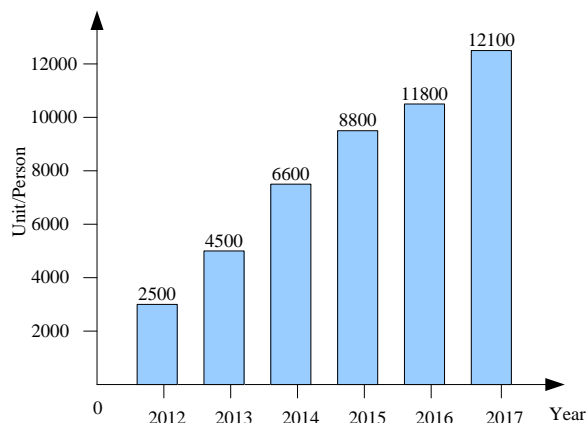


Figure 1. Statistical diagram of the number of fractures

Proper amount of exercise repair training can strengthen the muscle strength of the patients, enhance the flexibility of the thoracic and lumbar vertebrae, and the cooperation with the drug therapy can accelerate the repair of the fracture part. Athletes should lie flat on hard beds without pillows after hospitalization to maintain the straightness of the vertebrae and prevent deformed displacement after fracture [2]. At the same time, suitable soft pillows should be placed according to the degree of compression of the injured part. The height of the soft pillows can be gradually increased. This method is conducive to maintaining the stretch ability of the back to slowly expand the compressed vertebrae to perform a gradual reset, so that the deformed vertebrae can be corrected. The patients should adhere to the treatment of padding pillows for at least 6 weeks.

2.2. Quality care and rational use of medicines

The physical pain caused by simple thoracic and lumbar compression fractures will have a great influence on the psychology level of martial arts athletes. The hospitals should provide quality care and give the patients care and comfort in mind and body, which is conducive to enhancing the patients' confidence in restoring health and helping patients actively cooperate with treatment until they are cured. In the early stage of treatment, nurses should also pay attention to their physical care while taking care of the patients' psychological care. Because the patients' psychological disorder is caused by physical pain, physical rehabilitation can help to speed up mental rehabilitation. Nurses should always communicate with patients on the basis of a comprehensive and full understanding of the patients' prevalence, and have targeted psychological counseling. Nurses can patiently inform the patient of the healing process of compression fracture and related functional exercises, inspire patients to undergo rehabilitation

training, eliminate their nervousness and anxiety, and enhance their confidence in rehabilitation [3]. Martial arts athletes should use rational medication on time and under the guidance of nurses during hospitalization of fractures. At the same time, they can use internal and external methods. First of all, the injured area of the martial arts athletes should be washed clean, and hitting hot pack should be applied to the affected area. The patients will be treated with oral administration and external treatment on time every day. For patients whose fractures must be prone to prolonged posture for a long period of time, the nurses must regularly scrub the affected area of the patients to prevent the occurrence of sores and local necrosis.

2.3. Fixation of injury part

The pure compression fracture will cause the patient's bone to displace, and the displaced part should be promptly reset, otherwise the patient's vertebrae will lose support and will not be able to move normally. After the reduction of the fracture, the vertebrae is easily displaced again due to insufficient stability. Therefore, different methods are used to fix the fracture in a proper position to make it heal gradually[4]. Stretch reset can quickly adjust compression fractures, achieve faster reset, and can reduce the pressure of the compression part, enhance the flexibility and tension of the vertebrae ligament, help open the compression part, promote the recovery of the vertebrae, and maintain the vertebrae normal form.

3. Exploration of the Treatment of Hitting hot Pack

In order to actually observe the therapeutic effect of the hitting hot pack, a special exploration is conducted. The following two groups are martial arts athletes from a martial arts museum in Beijing. One hundred and twenty patients with pure thoracic and lumbar vertebrae compression fractures are selected to observe the therapeutic effect of hitting hot pack. Among them, 60 are in the control group and 60 are in the treatment group, of which the control group has 33 males and 27 females; the treatment group has 38 males and 22 females.

3.1. Treatment methods

In the control group, the patients receive the annular pad natural traction method. On the day of hospitalization, the patients are given annular pad natural traction, supine, and the rectangular sponge pads are selected. The length is about 30-60 cm and the height is about 2 cm. Take the fracture part as the fulcrum, place it on the back side of the thoracic and lumbar vertebrae, and then gradually increase to the stretched part. It can be stopped when the broken end is reset, then the sponge pad can be removed, and 5 weeks is a course of treatment. Patients should

adhere to treatment for 5 courses. Treatment group: The patients are treated with a combination of hitting hot pack and annular pad natural traction method. Among them, the main components of the hitting hot pack are: angelica sinensis, turmeric, fructus aurantii, dragon's blood, notopterygium, atractylodes macrocephala koidz and poria cocos, and musk; the patients with blood stasis and stagnation can add appropriate amount of safflower and peach kernels; the patients with obstructed main and collateral channels can add cassia twig, artillery aconite and wind; the patients with weak liver and kidney can add rhizoma drynariae, dipsacus asperoids, and radix rehmanniae preparata. Each box has three bags, per bag has 130ml, and take three times a day. 7 weeks is a course of treatment, and the patients should adhere to treatment for 5 courses.

3.2. Index establishment

There are three aspects of the observational index on the therapeutic effect of hitting hot pack: the evaluation of pain index, the evaluation of activity ability and the evaluation of analgesic effect. Five months before treatment, The patients' subjective pain is evaluated by pain observation simulation, and the activity ability of the patients after the treatment is evaluated by the evaluation of activity ability. The patients' demand for analgesics is observed by the evaluation of analgesic effect. The scoring standard for pain observation simulation evaluation is BMD scoring standard, which is graded from 0 to 10. The higher the level, the stronger the pain level. The Brien method is used for the activity ability evaluation: 2

points for no apparent activity difficulties, 3 points for activity difficulty, and 4 points for using wheelchairs or staying in beds. The evaluation of the effectiveness of analgesics also takes the approach: 1 point for no need for analgesics; 2 points for anti-inflammatory or other antibiotics; 3 points for occasionally taking analgesics; 4 points for regularly taking analgesics; 5 points for analgesics injection. The efficacy evaluation criteria are: Thoracic and lumbar deformity disappeared, X-ray shows the basic recovery of the compressed vertebrae part, and the pain symptoms of the thoracic and lumbar vertebrae almost disappear, the patients can carry out normal life and work after leaving the hospital, and life can be completely self-care, which indicates the cure; The vertebrae is obviously corrected, X-ray shows the compression of the thoracic and lumbar vertebrae is well improved, the pain in the thoracic and lumbar vertebrae almost disappear, the muscle strength in the injured part recovers as usual, and the patients could basically carry out activity normally, which indicates the improvement; the fracture symptoms of the thoracic and lumbar vertebrae compression part have not been effectively treated, and the pain has not improved or even worse, which indicates the no recovery [5]. Statistics process uses the SBSS15.00 statistical software for analysis and the measurement is expressed as $x \pm s$. The following table shows the comparison data of the three aspects before and after treatment in the pain index evaluation, activity ability evaluation and analgesic effect evaluation of the two groups:

Table 1. Pain effect evaluation score sheet

	Treatment group		Control group	
	Before treatment	After treatment	Before treatment	After treatment
pain index evaluation	7.21±1.03	3.18±0.38	7.05±1.20	3.06±0.77
activity ability evaluation	3.20±1.61	1.95±0.50	3.10±0.68	2.43±0.56
analgesic effect evaluation	2.23±0.21	0.68±0.08	2.22±0.33	1.34±0.33

3.3. Analysis of results

According to the above table, it can be seen that the differences in pain, activity ability and analgesic effect between the two groups of patients before and after treatment are obvious. Both groups have cure effects after treatment, but the clinical cure effect of the treatment group is more significant. The patients' pain is relieved or even eliminated, their activity ability is stronger, and the need for analgesics is also effectively reduced. In the comparison of BMD index, the score in the treatment group is greater than that in the control group, indicating that hitting hot pack has a good effect on improving the symptoms of osteoporosis in patients.

According to the above data, thoracic and lumbar vertebrae compression fractures are relatively common skeletal diseases in the medical field. Because martial arts athletes' work has high intensity and is associated with risk, they are one of the multiple populations of the symptoms. If the treatment of the disease is not timely or wrong choices are made in treatment methods, it not only results in patients being unable to receive reasonable treatment due to delays in their condition, but also can even cause patients to remain in bed for the whole life. The main symptoms of pure thoracic and lumbar vertebrae compression fractures are thoracic and lumbar pain and related functional disorders. The patients with severe symptoms are inconvenient to exercise and affect their normal life. According to James's theory, conservative

4. Diagnosis and Treatment Results Observation and Analysis

treatment should be applied to patients whose vertebrae is substantially intact and whose vertebrae is not damaged, including natural traction therapy, spiritual stimulation, and proper exercise. In order to further improve the therapeutic effect of the disease, patients may also be provided with some drugs that help to heal their damaged areas.

The annular pad natural traction method is based on the multi-directional support of the annular pad, and the natural traction of the ligaments at the fracture part can gradually reset the compressed part. The method is simple and easy to operate and has a certain role in relieving the pain at the damaged part, whose treatment effect is obvious. However, there are also some deficiencies. External traction and tension and weight during the treatment process can cause discomfort to the patients. Chinese medicine believes that the focus of pure thoracic and lumbar compression fractures is the word "fracture." The vertebrae of the human body is related to the kidney, and the tendon is related to the liver. Kidney and liver damage leads to the loss of blood and the body's immune system will fall. Therefore, after being subjected to strong pressure from external forces, local fractures and tendons breakage may easily occur. This leads to poor air circulation and blood impediment. When the blood flow outside the veins, it will lead to the formation of blood stasis, and then local pain occurs. After the fracture, the tendons break down and the vertebrae support capacity is reduced, and it is impossible to carry out normal activities. Therefore, in addition to external traction therapy, appropriate medications should also be assisted to repair damaged areas, promote blood circulation, reduce swelling, and relieve pain. The hitting hot pack contains angelica sinensis, poria cocos, musk, fructus aurantii, rhizoma chuanxiong and others. Among them, angelica sinensis and rhizoma chuanxiong have the effect of supplementing blood and nourishing the air and promoting the circulation of free gas; In addition to supplementing blood, poria cocos also has the effect of strengthening spleen, decreasing swelling to relieving pain, and elimination of moisture. Fructus aurantii has the effect of detoxification and relaxing tendon and activation collateral; As a guide, musk promotes efficacy directly to the lesion [6]. There are many applications of hitting hot pack in the treatment of scapulohumeral peri-arthritis and cervical spondylosis, but there are few clinical studies on pure thoracic and lumbar vertebral compression fractures. Previous experiments have proved that hitting hot pack's effect is very significant in the aspects of promoting blood circulation, removing blood stasis, and enhancing blood vessel toughness and permeability, and it also is conducive to increase the vitality of the bone cells in the fracture part and can further accelerate the healing speed of the fracture. In clinical treatment, the use of X-rays can clearly observe the vertebrae gap and some changes in bone and

joints, which is very helpful in the treatment of compression fractures. According to the above research, the therapeutic effect of the treatment group is significantly stronger than that of the control group. The clinical effect of the treatment of the thoracic and lumbar vertebral compression fractures with hitting hot pack is very significant, and it has great safety.

The main symptoms of thoracic and lumbar vertebrae compression fractures are pain and movement dysfunction. The conservative treatment can only slow down the patients' physical pain so that the patients can perform appropriate activities to maintain normal life. In the comparison of the two groups of treatment, the scores of the pain index evaluation, activity ability evaluation and analgesic effect evaluation of the treatment group patients are lower than those of the control group patients. It is known that the hitting hot pack can effectively alleviate the patient's pain, improve the patients' skeletal motion, and ensure the patients' life quality. Most patients with thoracic and lumbar vertebral compression fractures are accompanied by osteoporosis. In the observational research, BMD scoring standard is used to evaluate the treatment effect. The data in the table shows that the treatment group scores higher than the control group, which indicates that hitting hot pack can improve the patients' osteoporosis and is conducive to the recovery of patients' activity ability.

5. Conclusion

The combination of hitting hot pack and annular pad natural traction method can effectively relieve the pain caused by pure thoracic and lumbar vertebral compression fractures, improve the symptoms of osteoporosis, strengthen the muscle strength of patients, and accelerate the recovery of motor function, to make the treatment effect is optimal. As a local topical medicine, the hitting hot pack can spread through the skin to the damaged part of fracture directly, to make its efficacy maximization, so that the congestion can be resolved and the blood and gas can be unobstructed to achieve the purpose of relieving tendons finally. The topical application of hitting hot pack for the treatment of thoracic and lumbar compression fractures is more direct and convenient at the lesion part, and the efficacy can be better absorbed. From a comprehensive point of view, the comprehensive use of Chinese medicine treatment can improve the therapeutic effect and recover the patients' thoracic and lumbar function. The medicine has significant clinical effects, high safety, and has no irritating effect on the skin after testing, which is worth trusting and promoting.

References

- [1] Huang Zhi'e, Zhang Yongxia. Observation of the Effect of Huangbai Powder on the Constipation of Patients with Thoracic

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- and Lumbar Compression Fractures. [J]. Journal of Clinic Nursing's Practicality, 2016, 1 (9): 19-1.
- [2] Xiao Zhengjun. Clinical Study on the Treatment of Thoracic and Lumbar Vertebrae Compression Fracture by the Combination of Longzhong Orthopedic Technique and High Viscosity Bone Cement [D]. Gansu University of Traditional Chinese Medicine, 2016.
- [3] Wang Li, Zhang Jun, Yang Zhi. Clinical Observation on the Treatment of Acute Low Back Pain with Osteoporotic Lumbar Compression Fracture by the Combination of Chinese and Western Medicine [J]. Medicine and Health: Full-text version, 2016, 22 (12): 00169-00169.
- [4] Deng Yiqi, Wang Mingxing, Deng Yang et al. Influencing Factors of Clinical Efficacy of High Viscosity Bone Cement in the Treatment of Osteoporotic Vertebral Compression Fractures to Restore Compressed Vertebrae Height [J]. The Journal of Cervicodynia and Lumbodynia, 2016, 37 (6): 459-464.
- [5] Liu Zhiguang. Clinical Observation on the Treatment of Abdominal Distension after Vertebral Compression Fracture Treated by Self-designed Swelling Pain Powder. [J]. Medicine and Hygiene, 2016, 13 (1): 190-190.
- [6] Wang Suhua, Li Yuzhen, Wang Jiexuan. Experience of Nursing Intervention for Removing Urinary Catheter in Thoracic and Lumbar Vertebral Compression Fractures [J]. Clinical Journal of Chinese Medicine, 2017, 9 (23): 121-122.