

Progress in the Treatment of Lower Limb Varicose Veins with Chinese and Western Medicine

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Abstract: Lower extremity varicose veins is a chronic venous disease, mainly due to venous insufficiency leading to venous blood reflux, the appearance of inner leg skin changes, lower extremity heavy, vein tortuosity, pain, etc., the condition aggravation may lead to dermatitis, pigmentation, repeated ulcers and other complications. With the development of medicine, the methods of treating varicose veins of lower limbs with traditional Chinese and western medicine have been improved day by day, and have achieved good clinical effect. This article will review the recent research results on the treatment of lower limb varicose veins with Chinese and western medicine, in order to provide reference for further clinical treatment.

Keywords: Lower limb varicose veins, Tendons, A summary.

1. Introduction

Varicose veins of lower extremity is a chronic venous disease with clinical manifestations mainly characterized by changes in the skin of the inner leg, heaviness of lower extremity, tortuosity of veins and pain, etc. In severe cases, dermatitis, pigmentation and repeated ulcers may be associated [1]. In addition to congenital factors, people who stand and carry weight for a long time are prone to lower limb varicose veins, and the incidence is higher than that of normal people [2]. In the past, the treatment of this disease was mainly based on surgery. In recent years, with the development of medicine, the author [3] has achieved a certain therapeutic effect through the combination of traditional Chinese and Western medicine. This article will review the recent research results on the treatment of lower limb varicose veins with Chinese and western medicine, in order to provide reference for further clinical treatment.

2. TCM Treatment

Traditional Chinese medicine of lower extremity varicose vein belongs to the category of "tendon tumor". Traditional Chinese medicine believes that the disease is mostly caused by Qi deficiency and blood stasis, cold and damp coagulation, Qi stagnation and blood stasis, and blood dryness. The clinical disease is more common in patients who are standing for a long time, bearing weight, feeling cold and feeling depressed. Due to overwork and depletion of qi, Qi deficiency promotes weakness, blood obstructs and forms a tendon tumor. Cold feeling cold evil, cold dampness invasion of the body, causing blood stasis, coalesces into tumors; Mood is not smooth, Qi line block, long stagnation and fire, burn meridians, blood filling, coalesced and twisted into tumors.

2.1 TCM Internal Treatment

About the internal treatment of varicose veins of lower limbs, different scholars have different treatment ideas, and the majority of prescriptions. Professor Zhang Jianqiang treated the disease according to the pathological link of the interaction of "deficiency - blood stasis - water dampness" among the three elements of Zong Qi in venous diseases,

combined with the theory of qi movement, and firstly used the treatment methods of tonifying lung temper, invigorating spleen and removing dampness, and soothing liver and Qi to promote the operation of qi and blood. Then draw the blood down to promote blood circulation and remove blood stasis; Finally, Shengbuzong Qi decoction (Radix Astragalus, platycodon platycodon, stir-fried fructus aurantii with bran, ophiopogon, Schisandra, Poria, stir-fried white art with bran, Cornus officinalis, Yakurus, Radix bupleuri, Radix glycyrrhiza) was added to the basic formula of Zhangxichun Shenglu Decoction, which had significant curative effect [4]. Professor He Tian-you [5] believed that stasis, damp-heat and wind-induced varicose veins of the lower extremities were jointly caused by the occurrence of varicose veins. Treatment of the disease was based on the characteristics of the disease. Secondly, the use of drugs to spread moxibustion to relax tendons and collaterals; Finally, Fumai soup (white flower snake tongue, ligusticum Chuanxiong, forsythia, vinegar myrrh, stretchweed, etc.) to repair the meridians, to achieve the purpose of relieving symptoms. Han LAN et al. [6] showed through experiments that Taohong Siwu decoction could effectively reduce whole blood viscosity and improve hemorheology abnormalities, thus achieving the role of promoting blood circulation and removing blood stasis. Liu Dong et al. [7] used different doses of Taohong Siwu decoction to perform enema on mice, and showed that Taohong Siwu decoction had obvious anti-inflammatory and analgesic effects by raising the pain threshold of mice and reducing inflammatory factors.

2.2 TCM External Treatment

External treatment, including fumigation and external application, is suitable for patients with sores caused by varicose veins of the lower extremities [8]. With quick effect and few side effects, this method can make the active ingredients of the drug nourish the skin, promote blood circulation, and provide targeted treatment for local affected areas [9].

2.2.1 Fumigation method

Fumigation is used for local swelling and pain. Simiao Siwu

Decoction has the effect of activating blood and clearing collages, warming channels and dispelling cold. Clinical application of Simiao Siwu decoction has a remarkable effect on the fumigation and washing of mild varicose veins of lower limbs. Tang Yuehong [10] used Tongmai Xiaoyu Decoction (Morberry branch, peach root, Radix astragalus, Radix caowu, Radix Sichuan, Didragon, safflower, Asarum, Radix mori, rhubarb, licorice) as the observation group to treat varicose veins of the lower limbs. After 30 days, the symptoms such as swelling and pain of the lower limbs were significantly improved, and the skin color gradually recovered. Results: The total effective rate of observation group was higher than that of medical elastic socks group ($P<0.05$). LAN Xiaofei et al. [11] used rhubarb decoction (rhubarb, Radix fuzi, asarum), decocted it with water, prepared a clean towel and immersed it in the liquid medicine, took it out and wring it out, then quickly ta ta on the affected limb, and repeated. One month later, the results showed that the pain and swelling of the patient's lower limbs were significantly improved.

2.2.2 External application method

The plaster used for external application can effectively protect the wound of local ulcers, prevent infection and promote wound healing. Dong Guixin [12] treated 81 patients with ecthyma with one-effect ointment. The one-effect ointment (powder) was medicated with calamine, talc, vermilion, chestnut powder, borneol, etc., which had the functions of hemostasis, disinfection and muscle production, moisture absorption and rot-removal. In addition, it contained cobalt, iron, manganese, calcium and other elements, which had the functions of detoxification, astringent and deputation, reducing local exudation, and promoting wound healing. Results: The cure rate and effective rate of the observation group were significantly higher than that of the control group, with statistical significance. Liu Huijie et al. [13] used Ruanjian Sanjie Ointment (frankincense, myrrha, Shanci mushroom, purple ginseng, Luolu and Zaoxiu), which was combined with other medicines, and demonstrated its anti-inflammatory, detumescence, Ruanjian dispersing, dredging collaterals and relieving pain through the penetration mechanism of drugs. Results: The total effective rate of the treatment group was 100% better than that of the control group (30 cases). Chen Qian et al. [14] further explained that external treatment and application of traditional Chinese medicine can achieve the balance of qi, blood and Yin and Yang by stimulating the meridians and the body's self-adjustment under the guidance of "treating the lower limb varicose veins from collaterals".

2.3 Acupuncture Therapy

Acupuncture therapy includes fire needle, acupuncture bloodletting, warm acupuncture and other forms. Yang Mengxue et al. [15] Based on the theory of "Lingshu", they first eliminated the stagnation of Sheng pulse, and then applied the method of pricking Qi street to regulate the movement of qi and blood in lower limbs, so as to achieve the function of regulating qi and activating collages. Some scholars [16] applied animal experiments to further verify that fire needle has a mechanism of "supplementing fire and assisting Yang". The knot of varicose veins of lower limbs is based on qi deficiency, and fire needle is just warm to treat

varicose veins of lower limbs, stimulate positive qi and promote blood flow of lower limbs. Studies [17,18] have shown that acupuncture bloodletting can improve the pain and swelling symptoms of lower limb varicose veins by relieving the abnormal hemorheology and immune inflammatory response. Jia Yuanyuan et al. [19] used warm acupuncture combined with fire needle to treat 39 cases of varicosity of lower extremities. Warm acupuncture selected points (bilateral Zusanli, Sanyinjiao, Yanglingquan). Fatigue gas plus Guan yuan, Taixi; Cold and damp coagulation tendon plus Fenglong, Yin Ling spring; Trauma stasis plus blood sea, earth machine); Fire needle to take a Shi point. Cure: All clinical symptoms and signs disappeared, no recurrence after 6 months of follow-up. Results: The total effective rate was 97%.

2.4 Other Treatments

Foot bath and ear point pressure bean, as the characteristic therapy of traditional Chinese medicine, have also achieved remarkable curative effect in the treatment of varicose veins of lower limbs [20]. Ding Yulan et al. [21] used foot bath with traditional Chinese medicine prescription (raw herb, Chinese herb, scrophularia sinensis, cinnamomum sinensis, Chinese prickly ash, artemisia artemisia leaf, Fructus aurantii, and wind protection) combined with clinical nursing intervention (step-wise decompression and stretch socks). Method: Massage hands along the direction of muscle group during foot bath, gentle manipulation, timely addition of hot water, so that the effective ingredients of traditional Chinese medicine formula can enter the skin and promote human blood circulation. Results: The recovery rate of observation group was higher than that of control group ($P<0.05$). Wu Yuanyuan et al. [22] conducted clinical observation on 101 patients with varicose veins of lower limbs who received interventional treatment, among which 54 patients in the observation group were implanted with beans at ear points on the basis of the control group. Results: VAS and SAS scores in the observation group were better than those in the control group, and the difference between groups was statistically significant ($P<0.05$).

3. Western Medicine Treatment

3.1 Non-surgical Treatment

3.1.1 Elastic socks treatment

For pregnant women with varicose veins of the lower limbs and those who need conservative treatment due to surgical intolerance, stretch socks should be used to alleviate the discomfort caused by varicose veins of the lower limbs [23]. Studies [24] have shown that a small number of pregnant women still have obvious varicose veins and complications of lower limbs after delivery, so clinical nursing intervention measures are taken. Symptom improvement results: After nursing, clinical symptom scores such as lower limb swelling, walking limitation, acid distension and pigmentation in the study group were lower than those in the control group, and the differences were statistically significant ($P<0.05$). Complication rate results: The incidence of deep vein thrombosis, infection, subcutaneous hematoma and other complications in the study group was lower than that in the

control group, and the difference was statistically significant ($P<0.05$).

3.1.2 Drug therapy

According to the 2014 edition of Chinese Expert Consensus on the Diagnosis and Treatment of Chronic Lower Limb Venous Diseases, drug therapy is the basic application of symptoms at various stages in patients with varicose lower limb veins [25]. Studies [26] have reported that diosmin, as a vasoactive drug, can effectively block the occurrence of inflammation and prevent thrombosis. Because the diosmin clinical research for the combination, therefore Li Zhi etc. [27] of 126 cases of patients with primary lower limb varicose veins further research has been carried out with different doses of diosmin, discussed its effectiveness. Results: High-dose diosmin is effective in the treatment of primary varicose veins of lower extremities, which is beneficial to improve the coagulation function of patients, regulate KLF2 and serpine-1 levels, and has high safety. Shen Huizhen et al. [28] divided 80 patients in the hospital into two groups, 40 of which were given subcutaneous injection of low relative molecular weight heparin, and the other group was given anticoagulant drugs. Results LMWH prophylactic injection could effectively reduce the incidence of DVT. After medication, the anticoagulant indexes of patients increased, indicating that the hypercoagulable state of blood was alleviated, and the body's fibrinolytic system was stimulated to accelerate thrombolysis. Chen Hongrang et al. [29] divided 60 patients admitted in the early stage who were treated with wound bed preparation and basic treatment into two groups. The experimental group was treated with bionic poly(lactic acid)/gelatin nanofiber membrane repair and dressing change, while the control group was treated with basic dressing change. Results: POLylactic acid/gelatin nanofiber membrane can accelerate wound healing, reduce healing time and dressing changes, and improve the quality of life of patients.

3.2 Surgical Treatment

3.2.1 Traditional surgery

Surgical treatment of lower limb varicose veins is the most thorough in Western medicine. As the main surgical method, traditional high ligation and stripping of the great saphenous vein has been used in clinical practice. However, due to the disadvantages of this surgical method, such as large trauma, excessive bleeding and slow recovery, minimally invasive surgical methods such as foam sclerotherapy, endovenous laser therapy, electrocoagulation and radiofrequency ablation have emerged according to different stages of the disease [30,31].

3.2.2 Minimally invasive surgery

Foam hardener treatment

The treatment of intracavitary foam hardener occupies the advantages of safety, economy and reliability, which are complementary to other surgical treatments [32]. Chen Duanhao et al. [33] selected 80 patients with venous ulcer of lower extremity and applied polydocal foam hardener to observe the clinical effect, without setting up a control group.

Among them, the seepage of ulcer surface in 74 cases was significantly reduced and cured within 8 weeks. The dilated veins of 6 patients were closed 1 ~ 2 weeks after surgery, and the ulcer area of 4 cases was reduced by 50% after 4 weeks of dressing change, and 2 cases did not improve after 4 ~ 8 weeks of dressing change, with a total effective rate of 97.5%. Yan Jun et al. [34] discussed the clinical efficacy of foam hardener as an adjunct drug in the treatment of great saphenous vein varicose by ring laser. A total of 87 patients (121 limbs) were included, and the preoperative clinical manifestation, etiology, anatomy and pathophysiology (CEAP) scale was developed. Postoperative results: The incidence of subcutaneous ecchymosis was 11.9% (14/118); The incidence of thrombophlebitis was 3.4% (4/118). The incidence of lower extremity deep vein thrombosis after operation was 3.4% (3/118). It can be concluded that ring laser combined with foam hardener is a safe and effective treatment for varicose veins of the great saphenous vein.

Intracavity laser treatment

With the development of medicine, intracavitary laser has been widely used in the treatment of varicose veins of the lower extremities. Its role is to transmit various infrared light waves to the venous cavity, accelerate the heat damage of the venous wall leading to vascular closure, and promote fiber healing more effectively. At the same time, it has been widely used in clinical treatment in combination with other surgical methods [35,36]. Li Chen [37] treated 30 patients with varicose veins of lower extremities with high ligation combined with intravascular laser, and compared with 30 patients treated with high ligation and ablation of great saphenous vein combined with communicating finger vein ligation alone. Results: The total effective rate of the treatment group was 92.86%, higher than that of the control group (71.43%), the blood loss was lower than that of the control group, and the complication rate was 7.14% lower than that of the control group (23.81%) ($P<0.05$).

Electrocoagulation treatment

Relevant studies [38] have pointed out that electrocoagulation has the advantages of high safety and preventing incision infection. For further verification, Bian Dengfeng [39] selected 90 hospitalized patients, treated 45 patients with electrocoagulation, and compared with 45 patients treated with traditional high ligation and fractional exfoliation. The hours of operation, ambulation and hospitalization in the observation group were less than those in the control group ($P<0.05$). The postoperative scores of observation group were lower than those of control group ($P<0.05$). The total incidence of postoperative complications in the observation group was lower than that in the control group. Fang Jun [40] selected 92 patients with varicose veins of the lower extremities, and the control group was treated with high saphenous vein ligation and denudation, while the observation group was treated with high saphenous vein ligation and denudation combined with electrocoagulation. Results: The total effective rate of the observation group was 93.48%, which was higher than that of the control group 78.26%, and the difference was statistically significant ($P<0.05$). The incidence of complications in the observation group was 6.52%, which was lower than 21.74% in the control group,

and the difference was statistically significant ($P<0.05$).

Radiofrequency ablation therapy

Radiofrequency ablation is easy to operate and has a high closure rate, so it is widely used in clinical practice. An article [41] has discussed the normalization of radiofrequency treatment operation. Due to irregular operation and different technical application requirements, postoperative complications of lower limb varicose veins are likely to occur. Li Yan et al. [42] included a total of 617 patients with varicose veins of lower extremities under radiofrequency ablation to discuss and summarize the occurrence of complications. The patient was explored in different positions. Radiofrequency ablation was performed on the superior knee of the great saphenous vein, and sclerosing agent was injected after point stripping of the lower leg. Regular postoperative follow-up. Results: Complications occurred: 1 week after operation, 4 cases of deep vein thrombosis (popliteal vein thrombosis in 1 case, intermuscular vein thrombosis in 3 cases); Complete absorption 6 months after subcutaneous stasis and inflammation; The pigmentation was slow in absorption, and 5 cases were still present 6 months after operation. It can be seen that the selection of appropriate cases, the use of appropriate means, and systematic training can greatly reduce the occurrence of complications. Guan Haitao et al. [43] verified the safety and effectiveness of intravascular radiofrequency ablation combined with local point exudation under the guidance of ultrasound in the treatment of lower limb varicose veins through clinical observation.

4. Integrated Treatment of Chinese and Western Medicine

With the development of modern medicine and traditional Chinese medicine, the combination of traditional Chinese and western medicine is more effective in improving the symptoms of patients with lower limb varicose veins and improving people's quality of life. Wu Hongfang et al. [44] selected 140 patients with varicose veins of the lower extremities, and the control group ($n=70$, high ligation of the great saphenous vein + intracavitary laser closure) and the treatment group ($n=70$, Xuefuzhuyu decoction was additionally treated on the basis of the control group. Results: The total effective rate of the treatment group was higher than that of the control group, the treatment satisfaction was higher than that of the control group, and the total complication rate of the treatment group was lower than that of the control group, the difference was statistically significant ($P<0.05$). The time of symptom disappearance in the treatment group was significantly shorter than that in the control group, the difference was statistically significant ($P<0.01$). Ding Zhiming et al. [45] used Taohong Siwu Decoction combined with radiofrequency ablation to treat 50 patients with lower extremity varicose veins complicated with thrombotic phlebitis, and observed 50 cases in comparison with the group treated with radiofrequency ablation. Results: The indexes and symptoms of Taohong Siwu decoction combined group were lower than those of radiofrequency ablation group ($P<0.05$). Some scholars [46] also observed 42 patients in the observation group treated with Simiaoyong An decoction plus minus combined with laser intracavitary closure, and compared with 42 patients treated with laser intracavitary

closure alone. Results: The improvement of scores and symptoms in the observation group after treatment was higher than that in the control group ($P<0.05$), and the complications in the observation group were less than those in the control group ($P<0.05$).

5. The Summary and Prospect

In conclusion, varicose veins of the lower extremities and their complications are common diseases in vascular surgery. Due to the occurrence and development of the disease, the treatment methods at each stage are also different. According to the syndromes and pathogenic characteristics of TCM, TCM was administered to regulate the body, promote blood circulation and remove blood stasis to relieve symptoms and prevent complications. For external treatment, fumigation and external application were used to repair the local wounds of patients with sores. Acupuncture can dredge meridians, warm Yang to help qi and blood flow, improve the symptoms of tortuous veins; Foot bath and ear point operation is simple. Western medicine treatment uses vasoactive drugs to effectively block the occurrence of inflammation, to prevent thrombosis and anticoagulant effect. Secondly, surgery mainly focuses on surgery, the transformation from traditional surgery to minimally invasive surgery, and the combined use of various surgery methods have also achieved good effects in the treatment of varicose veins of lower limbs and its postoperative complications. With the development of modern medicine and the combination of traditional Chinese medicine, the treatment of traditional Chinese and western medicine is more effective in solving the symptoms of patients with lower limb varicose veins, improving people's quality of life and reducing the pain of patients.

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