

CASE STUDY

Leech Application Treatment For *Kaleen Sira Granthi Gata Vrana* (Chronic Varicose Ulcer): A Case Report

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ABSTRACT

Sira Granthi GataVrana (Chronic Varicose Ulcer) is an external prominent disease which is characterized by vigorous pain and unpleasant appearance. Varicose ulcers occur due to improper functioning of venous valves of the legs and produce chronic venous insufficiency resulting in ulcers. A 39 years old woman came in OPD of Panchakarma Hospital, Kappalthurai, Trincomalee, Srilanka. She was suffering from varicose vein in both legs below the knee joint and presented one small ulcer and one large chronic ulcer (8cm × 6.5cm) on right side median aspect of the ankle joint. The ulcer was severely painful, itching, chronic pus formed, with a fibrotic margin, bed of granulation tissues, and included sloughs. She was treated with Allopathic Medicine for 03 years but satisfactory result was not obtained. Before starting the treatment needful investigation were done. Treatment method was categorized in 3 steps. There were Leech Applications (*Hirudo medicinalis*), Awagahana (washing) of ulcers with the decoction of bark of the trees - Nuga-Vata banyan (*Ficus bengalensis*), Bo- peepal (*Ficus religiosa*), Attikka-Godan (*Ficus racimos*) and external application prepared with Ghritkumari (*Aloe vera*). Mentioned trees were having vedanasthapana, (Analgesic), vranashodhana and vranaropana (Wound purifying and healing) properties. The response to the treatment was recorded and therapeutic effect was evaluated through symptomatic relief of the patient. After one month, almost 30% reduction (ulcer 7cm × 5cm) in ulcer size and after two month, the size of the ulcer reduced to 60% (ulcer 6cm × 4cm). Other signs and symptoms, especially in pain and sloughs, significant result was obtained after four months. According to present observations

we can recommend these treatment methods for Chronic Varicose Ulcers.

Keywords : *Avgahana, External Herbal Application, Leech Application, Varicose Ulcer*

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Introduction

Varicose ulcers are more common in women than men, and are linked with heredity. Other related factors are

pregnancy, obesity, menopause ageing, prolonged standing, and leg injury. Varicose ulcers occur due to improper functioning of venous valves of the legs and produce chronic venous insufficiency. Skin changes can occur in lower leg (varicose eczema, lipodermatosclerosis, and ulcer) due to sustained venous hypertension which in turn is due to reflux (90%) and obstruction (10%) in the superficial and deep vein.[1] The most common chronic ulcer is leg ulcer in 70% to 90% cases. Venous ulcers develop mostly in medial part of distal leg which can be very painful, oedematous and fibrinous exudates leads to fibrosis of subcutaneous tissue with localized pigment loss and dilation of capillary loops. This is atrophic balance. This can occur around ankle and gives an appearance of inverted champagne bottle to legs. Acute fat necrosis can occur, especially at the ankle of overweight patient.

A 39 years old woman came in OPD of Panchakarma Hospital, Kappalthurai, Trincomalee, Srilanka. She was suffering from varicose vein in both legs below the knee joint and presented one small ulcer and one large chronic ulcer (8cm × 6.5cm) on right side median aspect of the ankle joint. Associated symptoms were numbness of both leg, very severe pain, on and off fever, itching, burning sensation, bad odour, ankle oedema, (pitting oedema) and dark black coloured skin. There was chronic pus formed ulcer with fibrotic margin and bed of granulation tissues and included area of sloughs (necrotic tissues). That patient's external appearance was obese (BMI 26). She has been taking allopathic medicine for Diabetic Mellitus for 5 years and Hypertension for 4 years.

Acharya Sushrutahas mentioned that jalouka (Leech application) can be used to prevent pus formation and pain in VranaShopha(wounds non healing ulcers) condition. Jalouka is comparatively less troublesome, easy to adopt and procedure without pain. People are familiar with them in their day today life. Nirvishajalouka which is commonly used *Hirudomedicinalis*. Ayurvedic Vrihatrayaimentioned properties of above trees VedanaSthapana(Analgesic), Vranashodhana and Ropana(wound purify and increase healing process). Hence the present study was carried out in order to

evaluate the efficacy of aforesaid treatment methods.

Methodology

Needful investigation were done before starting the treatment. Fasting blood sugar(FBS), Lipid profile, Complete Blood Count (CBC), Bleeding time (BT), Clotting time (CT), and scan were investigated. According to Scan report there were no deep vein thrombosis and 3rd degree varicose vein. FBS, Lipid profile, CT, BT, CBC values were normal and Hemoglobin was 13.5%. Before starting treatment after discussion with the subject, it was proved that she had not any allergic history. Photographs were taken before and after treatment.

Initially, 02 medicinal Leeches (*Hirudo medicinalis*) were applied on area of varicose vein and after removal there was no any complaint, so it was continued for 02 weeks. After 2nd week, applied 02 medicinal Leech over the area of heavy varicosity on calf muscle and 02 medicinal Leech applied on special sites of surrounding area of varicose ulcer. First two months Awgahana(washing) treatment and external application of Kumari method for two times per day were continued. Then after 02 months, only Leech application and Awagahana method were continued till completion of four month.

Preparation of leeches

Nirvishajaloukas were identified by the authors. They should be found from no poisonous water with clean environment. They had golden colour lines which run top to bottom along the sides. Then they were preferably preserved in a glass jar of water and mud. Freely moving leech were selected and put in to tray containing water and turmeric powder to activate them. Again, they were kept in fresh water. The leech were kept on the selected site and covered with thin wet layer of cotton. After removal, the bite mark and surrounding area was wiped, cleaned and bandage was tied with paste of honey and turmeric powder to prevent any allergic manifestations.

Avagahanamethod (washing)

Each part of 200g bark of Vata banyan tree (*Ficus bengalensis*, Family: Moraceae), Peepal (*Ficus racemosa*,

Family: Moraceae), Attikka-Godan Goolar(*Ficus racimosa*, Family: Moraceae) were cut in to small pieces and put into clay pot, added 03 liter of water and boiled till it was reduced to one liter and filtered.

Preparation of External Herbal Application

Kumari (Alove vera Family: Xanthorroeeceae) leaves were taken and peeled their green bark and extract kern were put on the ulcer and dressing was done.

Result and discussion

The duration of the treatment was 4 months (120 days). Response to the treatment was observed, recorded and therapeutic effect were evaluated by symptomatic relief. The results are given in the Table No 01. After one month of treatment, there was 30% reduction in ulcer size (7cm

× 5cm), (Figure 03) twisted varicose vein, fever, pain, prevent the formation of new ulcers and varicose vein condition. Reduced redness and bad odor, had removed slough, and healing process were started. After two month ulcer size reduced to 60% (ulcer 6cm × 4cm),(Figure 04) and also reduced above mentioned signs and symptoms. Significant result was obtained after four months.

Leeches were applied on an initial bite which is usually painless an attachment period lasting 20 to 45 minutes. During the attachment period, the leech sucks about 5 -15ml of blood. Medicinal leeches have been found to secrete saliva containing about 60 different proteins. These achieve a wide variety of goals useful to the leech as it feeds, helping to keep the blood in liquid form and increasing blood flow in the affected area.

Table No I: Percentage of Symptomatic Relief during the Treatment period

SYPTOMS	After 01 Month	After 02 Month	After 03 Month	After 04 Month
Varicose vein	30%	60%	70%	85%
Ulcer size	30%	60%	85%	100%
Both Leg Numbness	25%	55%	85%	95%
Pain Conditions	35%	60%	85%	92%
Onoff Fever	40%	100%	-----	-----
Itching	30%	65%	90%	100%
Burning sensation	35%	70%	95%	100%
Bad odour came out	40%	70%	90%	100%

Ankle Odema	30%	60%	80%	98%
Dark Black skin	25%	55%	80%	95%
Pus Formation	25%	50%	85%	100%
Fibrotic Margin	25%	55%	85%	100%
Granulation Tissues	30%	55%	85%	100%
Sloughs	30%	60%	90%	100%

Figure 01: Before Treatment



Figure 02: After 02 Weeks



Figure 03: After 01 Month



Figure 04: After 02 Month



Figure 03: After 03 Month



Figure 04: completely cure



The final stage provides the primary therapeutic benefits brought by components in the leech saliva including hirudin a protein anticoagulant that inhibits thrombin of clotting process, as well as histamine like substance that induce vasodilatation. The action of Jalauka can be understood according to presence of various bio active substances. Studies have found that leeches have various bioactive molecules in their secretions. There are vasodilators (Histamine like substance, Acetylcholine), Anti inflammatory (Bdelin, Hyluronidase, Eglin) Anti coagulation (Hirudin, Calin), Bacteriostatics, Anesthetic agents and Thrombolytic Distabilase. Anticoagulants reduce blood clotting, prevents deep vein thrombosis, pulmonary embolism, myocardial infarction and ischemic stroke. Hirudin inhibits blood coagulation by binding to thrombin, calin inhibits coagulation by blocking binding von wilbrand factor to collagen mediated platelet aggregation. Disatabilase act by fibrin dissolving and thrombolytic effect. Hirustasin inhibit kallikrein trypsin chrymotrpsin. Hyaluronidase increases interstitial viscosity. Eglin is anti inflammatory, Histamine like substance is vasodilator and Acetylcholine is also a vasodilator. Experiments on mice have shown a positive effect on wound/tissue repair.^{[2],[3],[4],[5],[6],[7],[8]}, The bark of the trees Vata-banyan tree(*Ficus bengalensis*), Peepal (*Ficus religiosa*), Goolar (*Ficus racimosa*), used

for decoctions are described under Nyagrodhadi gana in classics. These are claimed good for wound, properties of pacifying blood-pitta and burning sensation, healing fractures.^{[9],[10]}

All these three trees Vata-banyantree (*Ficus bengalensis*), Peepal(*Ficus religiosa*), Goolar (*Ficus racimosa*) possess sheeta veerya, kashaya and madhura rasa, kapha-pitta shamaka and varanapaha (varanashodhana-wound purifying and vranaropana- wound healing), dahaghna (pacifying burning sensation) properties.^[11] Also these have vedanasthapana (analgesic), vrana-shodhana and ropana (wound purifying and healing property), raktashodaka (blood purifying), shothahara (anti inflammatory) and varnya(providing natural skin colour) properties on external application. Kumari^[12] (Aloe vera) when used for external application has properties of shothahara(anti-inflammatory), varnya (natural skin colour), twakdoshahara (nullifying skin disorders), kshata-avashoshaka (wound healing), vranaavashoshaka (reduce slough), rechana(levelled surrounding tissues) properties, which would have been added to the healing of the ulcer.

In the conclusion, the condition of Kaleen SiraGranthigataVrana (chronic varicose ulcer) can be treated with above mentioned method satisfactorily. These methods can be used in treating the patient who

is suffering from varicose ulcers with success as it shows great efficacy. Therefore according this observation, can recommend these treatment methods as an efficient method for management of Chronic Varicose Ulcers.

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सारांशः

सिरा ग्रन्थी गत व्रण (क्रोनिक वैरिकाज अल्सर) एक प्रमुख बाह्य बीमारी है, जिसकी विशेषता अत्यधिक पीड़ा और अप्रिय उपस्थिति है। वैरिकाज व्रण पैरों के शिरा वाल्वों के अनुचित कार्य के कारण होता है और शिरा के कार्य में अपर्याप्तता पैदा करता है जिसके परिणामस्वरूप व्रण होता है। कपालथुराई, त्रिकोमाली, श्री लंका के पंचकर्म अस्पताल की ओपीडी में 39 वर्ष की एक महिला आई। वह जानु संधि के नीचे के दोनों पैरों में वैरिकाज वेन और गुल्फसंधि के मध्य ओर एक छोटे अल्सर और एक बड़े क्रोनिक अल्सर (8बउ • 6.5बउ) से पीड़ित थी। व्रण अत्यधिक पीड़ा, खुजली, क्रोनिक मवाद के युक्त, फाइब्रोटिक मार्जिन, दानेदार ऊतकों और स्लॉफ युक्त था। उन्हें 03 साल के लिए एलोपैथिक मेडिसिन के साथ इलाज किया गया था, लेकिन संतोषजनक परिणाम प्राप्त नहीं हुआ था। उपचार शुरू करने से पहले यथोचित जांच की गई थी। उपचार पद्धति को 3 चरणों में वर्गीकृत किया गया था। लीच एप्लीकेशन (हिरुडो मेडिसिनलिस), वृक्षों की छाल के काढ़े के साथ व्रण का अवगाहन (धुलाई) – नूगा-वट बरगद (फिकस बेंगालेंसिस), बो- पीपल (फिकस रीलिजियोसा), एटिका-गोडान (फिकस रेसीमोस) और घृतकुमारी(एलो वेरा) के साथ तैयार बाहरी अनुप्रयोग। उल्लिखित वृक्षों में वेदनास्थापन (एनाल्जेसिक), व्रणशोधन और व्रणरोपण (व्रण शुद्ध करने और उपचार करने वाले) गुण होते थे। उपचार की प्रतिक्रिया दर्ज की गई और प्रभाव का मूल्यांकन रोगी के लक्षण में राहत के आधार पर किया गया था। एक महीने के बाद व्रण के आकार में लगभग 30: की कमी (7 सेमी • 5 सेमी) और दो महीने के बाद व्रण का आकार घटकर 60: (6 सेमी • 4 सेमी) हो गया। चार महीने के बाद लक्षण, विशेष रूप से दर्द और स्लॉफ में महत्वपूर्ण परिणाम प्राप्त किया गया था। वर्तमान टिप्पणियों के अनुसार हम क्रोनिक वैरिकाज अल्सर के लिए इन उपचार विधियों की अनुशंसा कर सकते हैं।