



Case Study

CLINICAL EVALUATION OF JALAUKAVACHARANA (MEDICINAL LEECH THERAPY) IN NON-HEALING ULCER

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ABSTRACT

Chronic non-healing ulcers are those that do not heal within three months or often remain in the inflammatory stage for too long and may never heal or may take years. Some wounds heal easily by body's self-healing mechanism and some poses challenge to normal wound healing and does not heal in time and becomes a matter of concern for the physicians. Leech therapy proved to be a better treatment option by benefits of its salivary constituents in wound healing. It is an ancient way of treating such complicated disorders mentioned in different texts. A patient came at Shalya Tantra OPD with ulcer on posterior aspect of right ankle joint above the heel which was not healing since 6 months even on daily antiseptic dressings. Patient gave h/o immobilization for 2 months following ORIF of same joint 7 months back. During immobilization, after 1month of ORIF, patient developed ulcer at posterior aspect of Rt. Ankle above heel. Leech was applied at wound site twice weekly initially followed by once weekly then once in 15 days along with antiseptic dressing daily. The ulcer started showing signs of healing within three sittings and completely healed by 4 months. This study was carried out in Department of Shalya Tantra, Rajiv Gandhi govt. Post Graduate Ayurvedic college and Hospital, Paprola.

INTRODUCTION

Chronic non healing ulcers are those that does not heal within three months or often remain in the inflammatory stage for too long and may never heal or may take years.^[1] Also defined as spontaneous or traumatic lesions, typically in lower extremities that are unresponsive to initial therapy or that persist despite appropriate care and do not proceed towards healing in a defined time period with an underlying aetiology of systemic origin.^[2] Wounds that do not heal within three months are considered chronic.^[3]

There are many types of non- healing ulcers that may include venous, arterial, tropic/pressure sores, diabetic, traumatic ulcers. The normal wound healing process is dynamic and complex having four phases:

inflammation, proliferation, remodelling and scar formation. However, if the normal healing process is hampered, an ulcer can become chronic in nature due to lack of growth factors and cytokines which delays the healing process. The incidence of chronic non healing ulcers increases in the population having risk factors like atherosclerotic occlusion, smoking, obesity and diabetes.^[2] Chronic non healing ulcer is a major health problem and is estimated to affect app. 2-6 million People in USA.^[4,5], while its prevalence in the world ranges from 1.9 to 13.1%.^[6]

Medicinal leech therapy also called as *Hirudotherapy* is one of the traditional method to treat various kind of diseases in ancient times. *Hirudo medicinalis* is widely used species among all the species of leeches^[7]. What causes leeches to act therapeutically? Here answer to this question is their saliva.

Leeches secrete more than 20 bioactive substances in their saliva such as hirudin, antistasin, bdellins, eglins, carboxypeptidase inhibitors etc. they have anti inflammatory, analgesic and anesthetic effects, and also vasodilator, anticoagulant, platelet

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inhibitory affects as well as thrombin regulatory functions, extra cellular matrix degradative and antimicrobial effects.^[7]

Acharya sushruta has also mentioned about *Jalauka* in *Jalaukavacharniya adhyaya* in *Sutrasathan*. He gave detailed description about types of leeches there specific characters, their habitat, conditions required for leeches after use, about their feed and container. The whole procedure of leech therapy has been described by Sushruta which is used even in present times.^[8] The first application of leeches were observed in ancient Egypt. Leech therapy is a valuable traditional technique which by means of various potentially bioactive substances acts therapeutically in various diseases having inexplicable beneficial effects in skin disorders and in this study leech therapy found out to be intervention of choice for the patients of non healing ulcer.

Study was carried out in para surgical unit of Shalya Tantra department, R.G.G.P.G. Ayurvedic College and Hospital, Paprola. The patient was diagnosed by single consultant in surgery OPD of the hospital. Informed consent was taken from patient. Before study blood profile, biochemical and serological tests was performed. Leeches were brought and kept in separate jar of water. Complete assessment of the wound was done.

A patient aged 50 years male adult came at R.G.G.P.G. Ayurvedic College and hospital Paprola at Shalya tantra OPD with complaint of pain and wound present over posterior aspect of right ankle above heel since six months. The wound was painful and mild

discharge was present and was not improving even on daily antiseptic dressing. On further enquiry, patient gave history of ORIF in the same joint 7 months back and was immobilised for two months. During immobilisation, after 1 month of ORIF, he developed wound over the dependent part due to pressure that is posterior aspect of Right Ankle joint above heel. The ulcer was not showing any signs of healing since 6 months. Patient was k/c/o Type 2 DM and CAD since 2-3 years and chronic smoker since 20 years.

On examination, the ulcer present above the right heel posteriorly was approximately 4cm×4cm×5mm in size and was circular in shape having punched out edges with regular margins. The floor was covered with offensive slough, unhealthy granulation tissue and the base was slightly indurated. The surrounding area around the wound was indurated. Slight blackish discolouration and seropurulent discharge was present. The ulcer was painful. General built of the patient was thin and was walking on crutches since 6 months.

The wound was cleaned with normal saline. Then under full aseptic condition, 1 leech was applied at the wound site which sucked around 6-7ml blood for approximately 45 minutes each time. Then *Vamana* of the leech was done by applying *Haridra* to the leech and then the leech was again conserved in the container having water. At last dressing was done by using *Jatyadi tail* and bandaging done. The whole procedure was repeated twice weekly for 2 weeks, once weekly for next two months and once in 15 days for next 1 ½ month.



RESULT AND DISCUSSION

Leech therapy is one of the most promising therapies in the management of non- healing ulcers.

The case which we have taken was a case of pressure sore formed due to prolonged immobilization of the patient due to surgical intervention. Generally these kind of ulcers starts with callosity under which

suppuration takes place, the pus comes out and the central hole form the ulcer which gradually burrows deep down through the muscles, tendons and to the bones^[10] and so with our case, the ulcer formed at dependent part that is heel of the right foot. The factors which made this ulcer non healing was CAD and chronic smoking and immobilization which ultimately causes venous insufficiency and poor blood supply to the part as good blood flow is important for the ulcer to heal.

Here the leech therapy gave us phenomenon results in healing of such ulcer, as the various constituents in saliva of the leech were helpful in healing by increasing blood flow to the area by vasodilatation and reduced platelet aggregation thereby reducing the thrombogenic effects and have immuno-stimulant as well as immuno-modulatory effects. In the mean time, Hyaluronidase acts to clear the path for the active and healing substances to penetrate. These substances allow continued bleeding for upto 24 hours after leech has been detached and clearing the morbid matters out through the ulcer^[11]. The ulcer started showing signs of healing within three sittings and blood supply to the ulcer was also improved. Healthy granulation tissue starts to appear. Size of the ulcer reduced gradually and completely healed in 4 months by use of leech therapy along with antiseptic dressings daily.

CONCLUSION

The conclusion of the study is that Leech therapy is very effective in non -healing ulcers as the ulcer of the patient was not improving inspite of antiseptic dressing daily with various ointments and with the use of leech therapy ulcer started improving. There was enormous improvement in the ulcer and have fast recovery rate. It took total duration of 4 months to completely heal the wound. So, the leech therapy is proved to be a choice of intervention in non healing ulcers.

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