



## **Effect of pichudharan and lepa chikitsa in arterial ulcer: A Case Report**

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### **ABSTRACT**

Arterial ulcers also referred to as ischemic ulcers, are caused due to insufficient arterial blood supply to the lower extremities. This condition causes due to narrowing of arterial lumen due to various reasons. The overlying skin and tissues are then deprived of oxygen, killing these tissues and causing the area to form an open wound. The ulcers are often on the tips of the toes, on the heels, on the outer ankle, or where there is pressure from walking or footwear. This case study is about a 75 years old Hypertensive male with diagnosed with arterial ulcer on his right leg for one year. The ulcer was not healing with conventional allopathy medicines. The patient approached for Ayurvedic treatment at *Shalyatantra OPD*, APM' *Ayurved Mahavidyalaya & Seth R V Charitable Ayurvedic Hospital*, Sion on 14/08/2023 with complaint of extreme pain and itching over wound on right leg. The patient was admitted and put on with daily application *Triphala kwatha pichu* over ulcers followed by application *Lepa* (powdered Ayurvedic drugs + lukewarm water) around ulcer margins over the right foot and leg region below knee and Oral Ayurvedic medications was given. The wound showed significant healing in 5 weeks and satisfied the patient.

### **KEYWORDS**

Arterial Ulcer, *Lepa karma*, *Triphala kwath*, *Pichudharna*, *Vrana*

### **INTRODUCTION**

Arterial ulcers, also referred to as ischemic ulcers, are caused by inadequate skin circulation in the lower extremities especially when subjected to repeated pressure or trauma. The overlying skin and tissues are then deprived of oxygen, killing these tissues and causing the area to form an open wound. In addition, the lack of blood supply can result in minor scrapes or cuts failing to heal and eventually developing into ulcers. The ulcers are mostly due to peripheral arterial diseases and poor peripheral circulation. This condition more often seen in old people. The reduced blood flow then in turn leads to tissue necrosis and/or ulceration. These occur on anterior and lateral aspects of the leg, on toes, dorsum of foot or the heel (parts exposed to trauma). Pain is the main complaint. They are characterized by a punched-out look, usually round in shape, with well-defined, even wound margins and destroy whole skin and the deep fascia (unlike Venous ulcer) and may expose the underlying tendons at its floor. The base of the wound typically does not bleed, and is yellow, brown, grey or black in colour. Often the limb will feel cool or cold to the touch, and the extremity will have little to no distinguishable pulse. The skin and the nails on the extremity

will also appear atrophic, with hair loss on the affected extremity, while also taking on a shiny, thin, dry, and taut appearance. In addition, the base colour of the extremity may turn red when dangled and pale when elevated. An additional sign of an arterial ulcer is delayed capillary return in the affected extremity. Arterial ulcers are distinguishable from Venous ulcers in that the latter presents with redness and oedema (swelling) at the site of the ulcer, and may be painless.

The most common causes of arterial ulcers are: Peripheral vascular disease, Chronic vascular insufficiency, Vasculitis, Diabetes mellitus, Renal failure, Uncontrolled HTN, Arteriosclerosis, Atherosclerosis Trauma, Limited joint mobility and Increased age. Other attributable risk factors found are Foot deformity, callus formation resulting in focal areas of high pressure, Poor footwear that inadequately protects against high pressure, Obesity, peripheral neuropathy.

Untreated arterial ulcers can lead to serious complications, including infection, tissue necrosis, and in extreme cases amputation of the affected limb.

#### CASE STUDY

A 75 years old Hypertensive male diagnosed with Arterial ulcer on his right leg for 1 year. The patient was taking conventional allopathic medical management for arterial ulcer with regular sterile dressing. The wound was not healing after conventional medical management and dressing. With no satisfactory results with modern management, he came to *Shalyatantra OPD, APM' Ayurved Mahavidyalaya & Seth V M Charitable Dispensary & Seth R V Charitable Ayurvedic Hospital* on 25/08/2023 with c/o extreme pain and itching over wound on right leg, increased since 2 months. Patient had h/o trivial trauma >1 year ago over shaft region of right leg followed by formation of wound which not only failed to heal but lead to new ulcers formation. Patient is K/C/O Hypertension since 25-30 years and was chronic smoker. He has had a

sedentary lifestyle and runs a shop for 45-50 years. No other past medical or surgical history.

**Local examination-** 4 Ulcers noted over Rt Leg Shaft region, largest ulcer near lateral malleolus and shaft being 3.5cm x 2.5 cm, slough and necrosed tissue, serosanguineous discharge, erythema and tenderness noted.



Fig. 1. Images before treatment

**Investigation done-** The patient was advised to do CBC, BSL- F & PP, Urine- R&M, PT, INR, BT, CT, X-ray Rt Leg- AP & Lat, Colour doppler (Arterial + Venous) Study of Right Leg and reviewed with a Physician too. His blood investigations were all in normal range. X-ray also normal. Venous Colour Doppler of both LL was Normal whereas the Arterial study s/o mild

atherosclerotic changes in B/L External Iliac A, Common Femoral A and Profunda Femoral Arteries. Mild to Moderate atherosclerotic changes in both the Sup. Femoral Arteries. Moderate to Severe atherosclerotic changes in both Anterior and Posterior Tibial Arteries and also in the Dorsalis pedis arteries and dampened velocity. Monophasic waveform in Rt Dorsalis Artery.

**Current Medication** Tab Prolomet XL 12.5mg 1OD, Tab Telma 40 mg, Tab Clopivas A 1OD.

**Treatment given** The patient was admitted for Ayurvedic management of the non-healing Arterial ulcer in the IPD at *Seth R V Charitable Ayurvedic Hospital, Sion, Mumbai*.

Oral treatment- *Chandrakala ras* 1TDS, *Sanshamani vati* 2TDS

Local treatment- *Triphala Kwath Pichudharan* over the Ulcers for 20 mins.

Lepa made from mixing lukewarm water with powders *Daruharidra +Manjistha +Sariva* (until completely dries) and then removed.



Fig2: Images of *Triphala kwath pichu* & *Lepa* application

**Result** Above mentioned regime reduced the local erythema, discharge, pain, itching and accelerated wound healing process over a period of 4 weeks. The ulcers previously had slough, necrosed edges with no healthy granulation but after 4 weeks of implementation of this regime healthy granulation tissue formation and epithelialization started from wound margins. The *triphala kwath pichudharana* promoted natural debridement action later aided the initiation of healthy granulation. The *Lepa* Application of *Daruharidra +Manjistha+Sariva* with lukewarm water around the ulcer margins and

skin led to vasodilatation, improved circulation and neo-vascularization thereby promoting wound healing. The wound healing began and shows significant acceleration and as a result largest ulcer reduced to 2.5cm x 2cm in 4 weeks



Fig3: Post treatment images (>4 weeks of Treatment)

### **Discussion**

*Sushrutaacharya* has advocated use of *Shashti upkrama*<sup>1,2</sup> in the management of wound, of which *Alepan / Lepakarma*<sup>3</sup> and *pichudharna* (in *Lekhanakarma*)<sup>4</sup> have been implemented in the above said case study.

*Triphala kwath pichudharan*<sup>5</sup> over the arterial ulcer-

*Triphala* is a combination of the dried fruits of three plants *Haritaki* (*Terminalia chebula*), *Bibhitaki* (*Terminalia belerica*) and *Amalaki* (*Phyllanthus emblica*).

*Triphala Kwatha* is a decoction prepared from *Triphala bharad*. It alleviates the vitiated *Doshas*, is *Vranashodhak* and *Vranaropak*, *Kushtaghma*, *Rasayana*, *Stravahar* and *Vednashamak*<sup>6</sup> It is said to have an effective antimicrobial, antifungal activities.<sup>7</sup>

### **Lepa dravya**

*Sariva*: As per the Ayurvedic texts *Sariva (H. Indicus)* due to its attributes of *Madhur*, *Tikta Rasa*; *Madhur Vipak*, *Sheet Veerya* and *Guru*, *Snigdha gunas*; it performs actions such as *Tridoshshamak* but mainly *Pittashamak* and *Varnya*<sup>8</sup>. An extract of *H. Indicus* had antioxidant<sup>9</sup> and antiulcer activities.<sup>10</sup> Free radicals are generated at the site of injury, which impair the healing progress.<sup>11</sup> The herb used in the formulation has free radical scavenging properties and anti-inflammatory effects, and hence the wound healing property.

*Manjistha* (*Rubia cordifolia*) is grouped under the *Vishaghana Mahakashya*, *Varnya Dashemani*, *Jwaraghna Gana* in *Charak Samhita*.<sup>12</sup> The *Sushruta Samhita* has categorised it under the *Priyangvadi Gana*, *Ambasthadi Gana*, *Pitta Sanshaman*.<sup>13</sup> It has *Kashya Tikta and Madhur rasa*, *Katu Viphaki*, *Guru* and *Ruksha Guna*, *Ushna virya* as per Ayurvedic texts. *Manjistha* on account of its *Varnya*, *Raktaprasadka*, *Rakta shodhak*, *vishaghna*, *kaphashamaka* etc. properties pacify the vitiated *Pitta* and *Rakta Dosha* and play a significant role in healing the skin tissues, which gets damaged due to wounds or infections, *Manjistha* is able to remove toxins causing inflammation<sup>14</sup>. Its wound-healing actions are a result of the presence of tannins and anthraquinones<sup>15</sup> which can notably facilitate the contraction and closure of wounds, as well as the regeneration of tissues.

*Daruharidra*: (Berberis aristata) stands as a notable medicinal plant in the treatment of *Twakroga*. On account of its *Lekhaniya*, *Swedal* and *Kandughna Guna* and the *Stravahar*, *Shothohar*, *Vedana Sthapan*, *Raktashodhak*, *VranaShodhaka* action it promotes wound healing<sup>16</sup> Clinical and experimental studies have shed light on the plant's chemical constituents, particularly berberine, showcasing a spectrum of pharmacological properties.

### **Lepa karma on skin surrounding the arterial ulcer**

The rationale for the mode of action of the Lepa can be analyzed in three steps.

**Step 1** - *Lepa* comes in contact with the *Roma* and *Romakupa* which in turn are connected to the *Tiryak Gata Dhamanis*<sup>17</sup> which perform the function of *Sweda Vahana* that is how active drug enters the sweat ducts and hair follicles. Hair follicles represent a reservoir that may store topically applied substance. Differences in the follicular penetration are observed in different ethnic groups. Hair follicles provide an important pathway for percutaneous absorption in skin. Even solid particles may enter deep into the follicular orifice, a phenomenon that lends itself to the concept of follicular targeting of drugs. It was found that nanoparticles were stored 10 times longer in the hair follicles than in the stratum corneum; it should be noted that when topically applied substances penetrate into the hair follicles, they do not necessarily penetrate through the skin barrier into the living tissue because hair follicles also have barrier properties.<sup>18</sup>

**Step 2** - After the contact of the drug, there is *Paka* (metabolism) of *Dravya* (external application) in *Twacha* (skin). *Paka* refers to the action of *Bhrajaka Agni* and *Rasa Dhatwagni*. It occurs by virtue of *Ushna Guna* (warmth) of *Bhrajaka Pitta*, i.e. it takes up and metabolizes the *Kriya Dravya* (externally applied drug). This *Ushma* (warmth) present

in *Lasika*, *Rasa*, *Rakta*, *Twacha*, maintains the *Dravatva* in *Rasa* and *Rakta*, which in turn are responsible for *Varna Utkarsha* (improvement in *Varna*)<sup>19</sup> These two steps correspond to the pathway across stratum corneum and viable tissue.

**Step 3** - These steps finally lead to *Rasa Tarpana* (nourishment of the *Rasa Dhatus*) which is mainly achieved by *Udana* and *Vyana Vata* that supplies *Anna Rasa* (nutrition) to the concerned *Shareera*

*Ghataka* or *Avayava* (tissues of the body) and *Varna Utkarsha* (improvement in *Varna*) is thus achieved. Hence, it is quoted that *Varnasampannah Rasapurnatvat*<sup>20</sup> It corresponds to the process of metabolism in skin. Metabolism in skin compartments plays a significant role in determining the fate of a topically applied active compound. Metabolic activity is found in the skin surface, appendages, the stratum corneum, and viable epidermis. The level of many enzymes is highest in the epidermis. The relatively large size of the dermal component may result in a significant role in the metabolism of topically applied substances.

### **Scope of study**

It is recommended that the same study can be carried out for extended intervention period, with different media (according to the *Dosha* predominance) for mixing the drugs for better accuracy in results and the same formulation can be tried in other skin diseases to evaluate its effect on the parameters such as skin hydration, skin pigmentation, skin sensitivity, and skin wrinkling.

### **Conflict of interest** None

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