

Impending Benefit of *Vimlapana Karma* in *Vrana Chikitsa* (Wound Healing) – an *Ayurveda* & Modern Outlook

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Abstract: Wounds are said to be non-healing when does not improve after four weeks or does not heal within eight weeks. The causes of delay healing are many that are local causes and systemic diseases but the root causes are reduced tissue regeneration, angiogenesis, and neurological problem. *Sushruta* classical text of *Ayurveda* has elaborately explained sixty types of procedures for the management of wounds to achieve good early healing without complication. His techniques are broadly classified as *Vrana Shodhana* (wound cleaning) and *Vrana Ropana* (wound healing). *Vimlapana* is the upakrama advocated in the management of *Vrana* at the site of *sopha* that may work by dispersing the accumulated *Doshas* in the corresponding *srotas* so that *srotosangha* may be released and pathology may break. the utility of *Vimlapana karma* is still a question thus in the present study the review has been done to understand the possible mechanism of *Vimlapana karma* in the management of *Vrana* (wound).

Keywords: Massage, Saptopakrama, Shotha, *Vrana*, *Vimlapana karma*, wound healing.

INTRODUCTION

Wounds are said to be non-healing when does not improve after four weeks or does not heal within eight weeks. The causes of delay healing are many that are local causes and systemic diseases but the root causes are reduced tissue regeneration, angiogenesis, and neurological problem [1]. *Sushruta* classical text of *Ayurveda* has elaborately explained sixty types of procedures for the management of wounds to achieve good early healing without complication.

He advocated numerous herbal drugs for local application as well as systemic use. His techniques are broadly classified as *Vrana Shodhana* (wound cleaning) and *Vrana Ropana* (wound healing). The concepts and principles of *Vrana* such as causes, classification, examination, treatment, bandaging, complications etc. are well explained in *Ayurvedic* classic [2]. In classics, various treatments are still not authenticated within new diagnosed modern diseases. This review helps to the new researcher to select new research work that not conducted. Many experimental studies were carried out on the single and compound herbal and herbal-mineral formulations for wound healing but the utility of *Vimlapana karma* is still a question thus in the present study the review has been done to understand the possible mechanism of *Vimlapana karma* in the management of *Vrana* (wound).

AIM AND OBJECTIVES

- To study & analyze *Vimlapana Karma* in the treatment of *Vrana* (wound healing) from different classical texts of *Ayurveda*.
- To compare, interoperate & evaluate the possible mechanism in wound healing

MATERIALS AND METHODS

Literary data was collected from different sources-Library, Classical texts of *Ayurveda* and modern texts including digital media, relevant articles and internet. The materials and methods used and the modifications made was based on available literature, traditional experiences and expert opinions.

What Is Vimlapana Karma?

Vimlapana karma is nothing but gentle massage around the swelling & wound with help of Vata hara taila (vata pacifying oil). When we look in to the classical text, *Acharya Charak* doesn't explain it by *Vimlapana* but he gives it as kneading the wound for softening in *kathina Vrana Shotha* [3, 4]. *Acharya Sushruta* has mentioned *Vimlapana karma* under the heading of *Saptopakrama* for *Vrana shopha* (inflammations) as well as among the *Shashti Upakramas* for *vrana* (ulcers) [5, 6]. *Acharya Vagbhata* explained *Vimlapana karma* as procedure indicated for *Sthira* associated with *mandaruja* (mild pain). Having given *snehana* (oileation) and *swedana* (sudation therapies), a surgeon should carry out gentle local massage with bamboo reeds, the palm or the thumb [7, 8]. According to *Bhaishajya Ratnavali*, *Vimlapana karma* is explained in the *Vrana Shothadhikara* chapter under the context of *kathina Shotha kriyakrama*; where he explains it as the procedure for *manda vedanayukta* (mild pain), *stira/ kathina Shotha* where it should be first *snehana* (oiled) with *Vatahara Taila* (oil) and *swedana* is to be carried out. And then with help of bamboo reeds and pulp of the thumb (*angusta*) slowly *Mardana* is to be carried out for *Shotha Vilayanartha*[9] (*removing out the exudation*) *Vimlapana Karma* in *Gada Nigraha* is explained as the procedure of rubbing with the bamboo reeds, stones & *shalakha* for *kathina vrana shopha*. Where *vimlapana* refers to *pralepa*, *parisheka*, *abhyangadi karma* which does the *bahyashodana* of the *Vrana Shotha* (purifying the wound). *Vimlapana karma* also refers to *mrudvikarana* or *shuddikarana* [10, 11]. According to *Acharya Yoga Ratnakara* also opines same as *Sushrutacharya* and explains it as a procedure practiced in *kathina vrana Shotha* [12, 13].

Indication – After reviewing all the classical text, in the following condition it should be applied

- In *Vranashotha* (Inflammatory swelling) as it's the first line of treatment
- In *Ama avastha* of *vrana* – (acute stage of wound).
- *kathina vrana* (hard or chronic wounds)
- *Mandaruja* (mild pain)
- For *Shuddikarana* (cleaning the wound.)

Procedure

- **Vrana Shodhana**

The affected part should be cleaned with Normal saline, removal of slough should be done where ever necessary and again ulcer is to be cleaned with normal saline and part is dried. Here we can even use *kshaya* & *tikta pradhana kashaya* for cleaning like *Panchavalakala Prakshalana*

- **Snehana**

Any *Vata hara Taila* (or *Jatyadi taila*) to be applied all around the ulcer

- **Vimlapana karma**

Vimlapana karma is to be done in rhythmic circular rotation around the wound, initially it should be slow and later with applying pressure so that the surrounding area becomes warm by an increase in the local temperature by friction with the pulp of the fingers depending upon the size of the wound, gentle circular movements should be continued around the edges of wounds for a period of 10-15 mins. (see figure 1)

- **Lepa (medicated paste)**

Any *vrana ropana lepa* can be applied

- **Bandhana -Paschyata karma**

(Post procedure) - The affected part should be dressed with *Jatyadi Taila* in a sterile pad and bandaging is to be done. All precautions are to be taken as per standard wound care.



Fig-1: Method of Vimlapana Karma with Jatyadi Taila. Massaging in rhythmic circular rotation around the wound

Chronic wound- Factors Affecting Wound Healing

Wound healing is a complex, evolutionarily conserved; a multi-cellular process aimed toward epithelium restoration after injury thus need multi approaches. The wound-healing process consists of four highly integrated and overlapping phases: hemostasis, inflammation, proliferation, and tissue remodeling or resolution [14]. Common features shared in these include a prolonged or excessive inflammatory phase, persistent infections, formation of drug-resistant microbial biofilms, and the inability of dermal and/or epidermal cells to respond to reparative stimuli etc. In aggregate, these pathophysiologic phenomena result in the failure of these wounds to heal¹⁵. Oxidative Stress together with proinflammatory cytokines induce production of serine proteinases that degrade and inactivate components of the ECM and growth factors necessary for normal cell function [16].

Pressure ulcers develop as a result of prolonged unrelieved pressure and shearing force

applied to the skin and the underlying muscle tissue leading to a decrease in oxygen tension, ischemic perfusion injury, and tissue necrosis. In chronic venous ulcers, it is seen that there are profound pathological changes that arise secondary to venous valvular incompetence in the deep and superficial veins. This, in turn, leads to a constant blood backflow resulting in an increase in venous pressure. Pressure-induced changes in blood vessel wall permeability then lead to leakage of fibrin and other plasma components into the perivascular space. Accumulation of fibrin has direct and negative effects on wound healing. It down-regulates collagen synthesis, leads to the formation of pericapillary fibrin cuffs that create a barrier for normal vessel function, and traps blood-derived growth factors [17]. Cuffs were considered as continuous obstructions preventing free blood-dermis oxygen exchange [18]. Any of these factors can affect wound healing which interferes with one or more phases of the wound healing process, thus causing improper or impaired tissue repair (Fig no. 2).

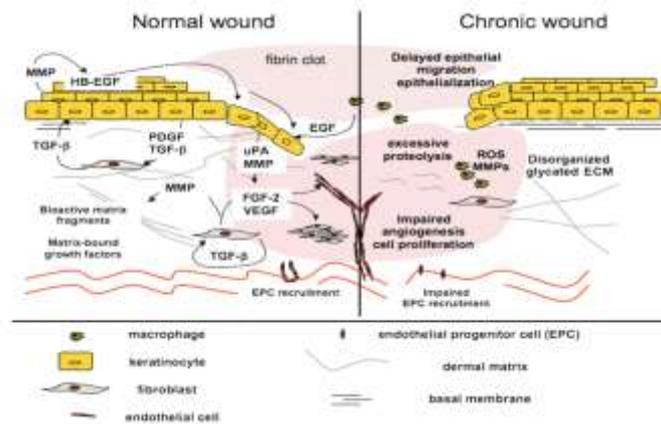


Fig-2: Factors affecting Normal Versus Chronic Wound Healing

Microenvironment within a normal wound bed (left) is characterized by the presence of numerous growth factors, a well-organized ECM, and responsive cell populations. Matrix synthesis, here, exceeds its degradation, and MMP activity is regulated by the presence of MMP inhibitors (TIMPs). Angiogenesis and neovascularization of normal wounds proceed in a timely manner via well-regulated Chronic wounds (right) often have a high incidence of bacterial biofilms, leading to persistent inflammation, excessive proteolysis, and degradation of critical growth factors, receptors, and/or ECM. Cells residing within these wounds are unable to proliferate and/or migrate effectively perhaps because of the absence of functional receptors or appropriate promigratory matrix substrates.

DISCUSSIONS

In Vrana shotha (swelling condition) & Ama Avastha (acute stage of the wound) Vimlapana is the upakrama advocated in the management of sopha that

may work by dispersing the accumulated Doshas in the corresponding srotas so that srotasangha may be released and pathology may break. Vimlapana is described for both aam and pakva sopha which means it includes Nija and Agantuja both type of Vrana (wound). As in nija vrana dosha is involved from initial and in Agantuja vrana involvement of Dosha occur later on. Vimlapana karma can be considered with Mechanotransduction which is defined as the transformation of a mechanical stimulus into a chemical signal or the resulting cellular signaling cascade after an external mechanical deformation of tissue¹⁹. Studies suggest that Massage acts as an immune modulator. It influences apoptotic signaling of neutrophils, results in the decreased release of proinflammatory cytokines [20]. Thus it promotes tissue repair.

In **Kathina vrana and Dusta vrana** (hard or chronic wounds) Vimlapana karma is helpful to break down the pathophysiology of chronic ulcer thus

enhances early healing as there is delayed wound healing because of many metabolic & systemic local factors. By applying Vimlapana Karma with Jatyaditaila, it will raise the local temperature, due to which vasoconstriction might be relieved and necessary nutrients, oxygen, etc. are carried to the wound site, thereby improving the condition of the wound. This will increase Angiogenesis and neovascularization in the wound which helps in early healing. Mechanical forces induce changes in enzymatic expression, and these enzymes degrade fibrotic tissue, which results in increased softness around the wound bed. By compression, it may have induced apoptosis of fibroblasts, which would modulate cytokine, reduce inflammation & aid wound healing [21].

In Mandaruja (mild pain)

One important study, published in the June 2000 edition of the *Journal of Burn Care & Rehabilitation*, noted that massage can help in other profound ways. Specifically, massage not only reduced patients' pain and itching but also made them feel better emotionally about scars and the recovery process. The mechanical forces result in the release of beta-endorphins, which aids in pain relief [22]. *Jatyadi taila* has a property of antibacterial & anti-inflammatory properties and previous studies have shown its wound healing property [23] thus it further promotes wound healing process. Thus the unique concept i.e. *Vimlapana Karma* is beneficial in the management of all types of wound and has to study on a micro level further.

CONCLUSION

Vimlapana karma is beneficial in all types of wound and helps removes the local vasoconstriction thereby aiding the micro & macro circulation to the wound site thus improves the anoxic state of the tissue. It further increases Angiogenesis and neovascularization in the wound which helps in early healing. It further reduces pain by removing the local toxins and makes the patient more comfortable.

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