



Case Study

ANTIMICROBIAL AND ANALGESIC EFFECT OF *DHOOPANA* WITH *SRIVESHTAKADI CHOORNA* IN NON-HEALING ULCER - A CASE STUDY

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ABSTRACT
A chronic ulcer may be defined as one that fails to heal in the expected time for a ulcer of that type, which is usually less than 3 weeks. Chronic ulcers usually respond slowly to conventional treatments. In Ayurveda classics, ulcers its types and management has been explained. Signs and symptoms of non-healing ulcers can be compared with features of *Dushtavrana*. In spite of the modern advances that have been made; the management of Chronic ulcer is still a challenge for the clinician. Sushruta was quite aware of the importance of ulcer management. 60 methods of treatment of *Vrana* have been explained in *Susruta Samhita Chikitsa stana Dvivraneeya adhyaya* and one among them is *Dhoopana*. *Dhoopana* is indicated in ulcers which have predominance of *Vata*, severe pain and exudation. In *Susruta Samhitha suthrasthana Misraka adhyaya*, *Dhoopana* with *Sriveshtaka*, *Sarjarasa*, *Sarala*, *Devadaru* and other *Sara-vrikshas* are explained. In the present case study, 60 year old male patient who visited OPD with non-healing ulcer over left side of left lower limb with pain and purulent discharge from the ulcer was subjected to *Dhoopana* for 7 days twice daily for 10 minutes with *Sriveshtakadi dhoopa choorna*. Assessment of pain was done with VAS and VRS scale, discharge was assessed with grading scale and microbial content was assessed with Pus culture. After the study period there was considerable relief of pain and discharge. The organism *Staphylococcus aureus* present in initial swab was absent after 7 days of *Dhoopana*.

INTRODUCTION

Ulcer healing is a major problem in surgical practice and its main reason is infection. Due to infection ulcer become complicated. Microbial factors that influence the establishment of infection of ulcer are the bacterium inoculum, virulence and the effect of microbial environment. Prolonged exposure to bacteria within an ulcer, results in release of free radicals and numerous lytic enzymes which could have a detrimental effect on cellular processes involved in ulcer healing leading to prolonged inflammatory phase. Patients with a non- healing or chronic ulcer may experience chronic pain, loss of function and mobility.

According to *Susruta Samhita Chikitsa stana* 1st chapter, *Ruk* (pain) is the *Samanya lakshana* of *Vrana*^[1]. *Susruta Samhita sutra stana* 22nd chapter *Vranasravavijyaneeya* explains the features of *Dushtavrana*. Among them features like *Puthipooyasravi*, *Athyardha vedana* and *Deerghakalanubandhi* can be correlated to that of non-healing ulcers^[2]. The presence of micro-organisms may result in *Deerghakalanubandhi* feature of an ulcer as it delays the process of ulcer-healing. While explaining *Yapya vrana lakshana*, *Susruta Acharya* has mentioned presence of *Krimi* or micro organisms which prolongs ulcer healing process^[3]. In this case study analgesic and anti-bicrobial effect of *Dhoopana* with *Sriveshtakadi dhoopa choorna* in non-healing ulcer was assessed.

Case Report

A 60 year old male patient who is working as a lottery agent came to OPD with a non-healing ulcer of 10 year duration with pain and purulent discharge over the left side of left lower limb. Both allopathic and

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Ayurvedic treatment had been taken the patient during the past 10 years but the ulcer remains non healing

Past History: No history of hypertension, hyperglycemia, dyslipidemia.

General Examinations

General condition: Worried facies

Built: Moderate

Blood pressure: 130/80mmHg

Pulse rate: 72/min

Respiratory rate: 18/min

Heart rate: 72/min

Investigations Done

CBC, FBS, PPBS, ESR within normal limits

Examination of Ulcer

Size and shape: 5.9x5x0.2cm, irregularly oval

Number: 1

Position: Lateral aspect of left ankle

Edge: Slopping

Floor: Reddish, Slough present.

Base: Muscle

Discharge: Purulent

Surrounding skin: Blackish discoloration present

Tenderness: Grade 1

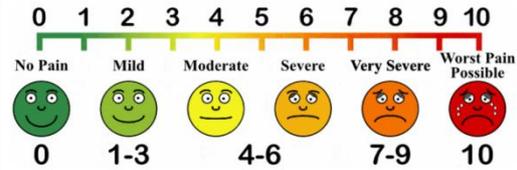
Bleeding: Absent

Methodology

Using *Sriveshtakadi choorna dhoopana* was done in a non-healing ulcer of leg twice daily for 10 minutes for 7 days after obtaining consent of the patient. Effect of *Dhoopana* with *Sriveshtakadi choorna* in reducing pain was assessed by Visual analogue scale, Verbal Rating Scale pain scale, reducing discharge was assessed by grading of discharge and microbial flora was assessed with Pus culture.

VRS rating	Symptoms	Score
No pain	No complaints of pain	0
Mild pain	Bearable pain requires no treatment	1
Moderate pain	Pain bearable upto some extend	2
Severe pain	Unbearable pain (disturbed sleep)	3

•Visual analogue scale (VAS):



1. Discharge

Amount

Grade 0: No discharge.

Grade 1: Mild-If *Vrana* wets 1 sterile pad of 4x4cm size.

Grade 2: Moderate-If *Vrana* wets 2 sterile pads of 4x4cm size.

Grade 3: Profuse discharge-If *Vrana* wets more than 2 sterile pads.

Type

Bloody-Thin, bright red

Serosanguineous-Thin, watery, pale red to pink

Serous-Thin, watery, clear

Purulent-Thin or thick, opaque tan to yellow

Foul purulent-thick, opaque yellow to green with offensive odour.

Sriveshtakadi Choorna

Sriveshtakadi yoga is mentioned by Acharya Susruta in *Misrakadhyaya of Sutrastana*.^[4] The Yoga has been indicated for *Vrana dhoopana*. *Sriveshtaka*, *Sarjarasa*, *Sarala*, *Devadaru* and *Sara vrikshas* are the contents of the yoga. Among the *Sara vrikshas* *Khadira* and *Asana* are taken for the preparation of *Yoga*

Drug	Botanical Name	Rasa	Guna	Virya	Vipaka	Karma
<i>Sriveshtaka</i> ^[5]	<i>Pinus roxburghii</i> (resin)	Madhura Tikta Kashaya	Snigda	Ushna	Katu	Kanduhara, Vranahara, Dourgandhyahara
<i>Sarjarasa</i> ^[6]	<i>Vateria indica</i>	Kashaya Tikta	Snigda	Seeta	Katu	Vranajantujit, Krimihara
<i>Sarala</i> ^[7]	<i>Pinus roxburghii</i>	Madhura, Tikta, Katu	Laghu, Snigda, Theekshna	Ushna	Katu	Kaphavata samana, Vranasodhana
<i>Devadaru</i> ^[8]	<i>Cedrus deodara</i>	Katu, Tikta Kashaya	Laghu, Rooksha	Ushna	Katu	Dushtavrana vishodana Kanduhara
<i>Khadira</i> ^[9]	<i>Acacia catechu</i>	Tikta, Kashaya	Laghu, Rooksha	Seeta	Katu	Krimihara, Vranahara, Raktasodhana
<i>Asana</i> ^[10]	<i>Pterocarpus marsupium</i>	Katu, Tikta, Kashaya	Laghu Rooksha	Usna	Katu	Krimihara, Vranahara, Raktasodhana



Sriveshtaka



Sarjarasa



Sarala



Devadaru



Asana



Khadira

Preparation of trial drug

- Equal quantity of useful parts of *Sriveshtaka* (resin), *Sarjarasa* (resin), *Sarala* (heartwood), *Devadaru* (heartwood) and *Sara vrikshas* (heartwood) were collected, cut into pieces, cleaned in water dried in shade and powdered.
- It was made into a paste by mixing with *Saara-vriksha Kashaya* and applied over plain gauze, dried and rolled to make into the form of *Varti*.

Before burning, tip of *Varti* was dipped in plain *Grita* and *Dhoopana* was done.

Intervention

Non-healing ulcer of the patient was subjected to *Vrana dhoopana* using *Varti* prepared out of *Sriveshtakadi Dhoopa choorna* twice a day, 10 minutes each, for 7 days continuously.

a) *Poorvakarma*

Procedure was explained to the participant in detail and his consent was taken.

Patient was made to lie comfortably.

Ulcer and its surrounding area were exposed and cleaned using sterile distilled water.

b) *Pradhanakarma*

Prepared *Varti* is taken, dipped in plain *Grita* and lighted to produce fumes (*Dhoopa*) and is directed to the ulcer.

Dhoopana was done for a duration of 10 minutes.

c) *Paschatkarma*

Ulcer was covered with a sterile pad. Gauze bandaging was done to prevent contamination of ulcer.

Assessment

The *Vranadhooopana* was done for 7 days continuously, twice a day for 10 minutes each and the outcome measures were:

1. Pain (VAS, VRS Scale)
2. Discharge

These were assessed during 0th, 3rd, 5th, 7th day

3. Pus culture

Was assessed on 0th and 8th day.

After the assessment period, participant was given standard treatment until healing of ulcer.



Day 0



Day 1



Day 2



Day 3



RESULTS

Day	Pain-vas	Pain-vrs	Discharge Grade	Discharge type	Pus culture
0	2	1	1	Thin purulent	1-2 pus cells Heavy growth of Staphylococcus aureus
1	2	1	1	Thin purulent	
2	2	1	1	Serous	
3	2	1	1	Serous	
4	2	1	1	Serous	
5	0	1	1	Serous	
6	0	0	1	Serous	
7		0	1	Serous	
8					1-2 pus cells No organism seen No growth after 2 days of incubation

DISCUSSION

Dhoopana with *Sriveshtakadi choorna* has been found to be effective in reducing pain and discharge of the non-healing ulcer. Without the use of any antibiotics, the gram-positive organism, *Staphylococcus aureus*, which was found in the first pus culture, was not seen in the pus culture taken after 7 days of *Dhoopana*. *Dhoopana* with *Sriveshtakadi choorna* removed the microbial load and prevented the ulcer from further contamination of microorganisms during the study period. The *Ushna virya* and *Snigdha guna* of the drugs used might contribute to reducing the pain. *Katu rasa* helps in the removal of *Krimi* or microorganisms and promotes *Vrana sodhana*, *Tikta rasa* helps in *Pooya upashoshana* or reducing discharge, *Kashaya rasa* by its properties like *Ropana*, *Sodhana*, *Sthambhana*, *Lekhana* and *Kledopashoshana* helps in reducing the purulent discharge and keeping the ulcer clean and thereby aiding proper healing.

CONCLUSION

The current treatment used to treat non-healing ulcers is the use of antibiotics, anti-inflammatory drugs, wound debridement, irrigation, hyperbaric

oxygenation, vacuum-assisted closure, maggot therapy etc. Many of such techniques are much expensive and are not successful in many cases.

Dhoopana with *Sriveshtakadi choorna* is less expensive compared to these treatments and found to be effective in reducing pain, discharge, and microbial load in non-healing ulcers with 7 days of *Dhoopana*. While treatment of non-healing ulcers along with other procedures and internal medications, *Dhoopana* with *Sriveshtakadi choorna* can be also done for a longer duration which may help in fastening the process of wound healing.

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