



## Case Study

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### A CASE STUDY ON THE ROLE OF NIMBA KALKA LEPA IN THE MANAGEMENT OF DUSHTA VRANA

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#### ABSTRACT

Acharya Sushruta mentioned various types of Vrana (wound) and their management, which is vital in any surgical practice/ procedure. There has been progress in surgery in various fields, which reduces the incidence of wound infection by decreasing impediments associated with wound healing to certain limits. Still, wound management continues to be a matter of speculation. Healing of Vrana is a natural process, but due to interference with causatives becoming dushta (non-healing) and the normal healing process delayed, the prime motto of the surgeon is effective wound healing with a minimum scar and control of pain effectively. Treatment methods for Vrana are mentioned in Ayurvedic treatises. Dushta Vrana is an issue that is frequently seen in surgical practice. The presence of Dushta Vrana (non-healing ulcer) can harm the patient's state, causing various complications. Wound management of any post-surgical lesion should follow the principle of moist wound therapy and avoid agents that may impede the normal healing process. The aim of the present study is that when diagnosed early, the majority are readily treated with office-based therapy, which is curative with regard to treatment. In the present study, Vrana lepa (topical application) is the therapy for Vrana shodhana action (wound cleansing). This study reports a 60-year-old female patient with Dushta Vrana who presented with a blackish lesion (non-healing ulcer) behind the right ear for two years. The treatment protocol was sthanika (topical). The patient had significant results with this treatment, which is presented here. The study is carried out as per ICH-GCP Guidelines.

**Keywords:** Dushta Vrana, Shodhana, Ropana, Vrana Lepa, Kalka, Nimba Kalka, Neem.

#### INTRODUCTION

The Vrana (wound) means tissue damage, which leaves a scar after healing<sup>1</sup>. In ancient Indian literature, many references related to the Vrana (wound) and Vrana ropana (wound healing)<sup>1,2</sup>. Treatment methods for Vrana are mentioned in Ayurvedic treatises: patient care and research of newer techniques and drugs for more accessible and effective management. Dushta Vrana<sup>3</sup> is an issue that is frequently seen in surgical practice. The presence of Dushta Vrana (non-healing ulcer) can harm the patient's state, causing various complications. Wound management of any post-surgical lesion should follow the principle of moist wound therapy and avoid agents that may impede the normal healing process. Management of wounds is described in Sushruta Samhita in a very detailed manner<sup>4</sup>. He advised sixty upakrama (method) of treating wounds in many different conditions, known as shashti upakrama in Chikitsa sthanam<sup>4</sup>. Acharya Sushruta mentioned various types of Vrana (wound) and their management, which is important in any surgical practice/ procedure. There has been progress in surgery in multiple fields, which reduces the incidence of wound infection by decreasing impediments associated with wound healing to certain limits. Still, wound management continues to be a matter of speculation. Healing of Vrana is a natural process, but due to interference with causatives, it becomes dushta, and the normal healing process is delayed; the prime motto of the surgeon is effective wound healing with a minimum scar and control of pain effectively.

**Aims and Objective:** To assess the clinical efficacy of Nimba Kalka (trial drug) for wound healing.

#### MATERIALS AND METHODS

##### Drug content

An innovative preparation with healing properties, described in Sushruta Samhita, was prepared with kalka kalpana<sup>9</sup> in the pharmacy of our institute.

In the preparation, Nimba Patra (*Azadirachta Indica*) was taken.

**Drug preparation:** After the identification of raw herbal drugs, authentication was obtained from the Dravya Guna department, and kalka was prepared as per the classical reference of kalka kalpana<sup>9</sup>.

##### Criteria for Assessment

- The subjective parameters of pain and tenderness.
- Objective parameters of size, colour, floor, margin, discharge, and granulation tissue were recorded based on the score adopted with grading (0, 1, 2 and 3).
- After treatment, the scar was assessed based on gradation (0, 1, 2 and 3).
- Criteria for assessing the total effect of therapy are given in Table 2.

**CASE REPORT**

A 60-year-old female presented with a blackish lesion (non-healing ulcer) behind her right ear for two years. The lesion increased in size day by day, and the wound got infected and progressed deeply. She consulted a general surgeon, who advised debridement and correction of the wound by closing; there was no history of Diabetes mellitus or hypertension. The family history was also not significant with the patient's disorder.

**METHODOLOGY**

Preparation of Nimba Kalka (Neem Paste)

**Table 1: Pharmacodynamic properties of drug<sup>5,8</sup>**

Drug	Rasa	Guna	Virya	Vipaka	Karma
Nimba	Tikta, Kashaya	Laghu	Sheeta	Katu	Vata Kaphaghna

Nimba Patra (*Azadirachta Indica*) was washed thoroughly, and kalka (paste) was prepared out of Nimba Patra in the pharmacy.

About 20 gm of kalka was prepared, and 10 gm was used for local application twice daily.

**Application**

- Chedana (excision) of Lesion done under all aseptic measures,
- The post-excision wound was cleaned with Panchavalkala kashaya. After drying with sterile gauze, Nimba Kalka lepa was topically applied over the wound, followed by an appropriate size sterile pad placed and dressing secured with bandage without compressing circulation, a method done twice daily.

**Local examination of lesion**

Site: Post auricular right ear  
 Size: 2 X 3 cm  
 Colour of Lesion: Blackish  
 Number: One  
 Discharge: Absent  
 Margin: Irregular  
 Mobility: Movable  
 Tenderness: Absent

**Table 2: Criteria for Assessment of total effect of therapy**

Result	Criteria
Markedly improved	100% Relief in Lakshana (signs and symptoms) along with complete healing of wound within 21 days
Marked	Responded for any 2-3 Lakshana (signs and symptoms) along with complete healing of wound within 21-30 days
Improvement	26-75% relief in Lakshana signs and symptoms along with complete healing of wound within 21-30 days
No improvement	No response.



**Image 1: Blackish lesion on Right post**



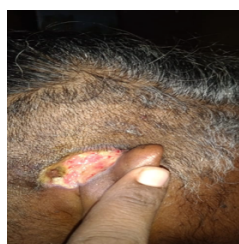
**Image 2: Post excision site of lesion**



**Image 3: Wound on 2nd day**



**Image 4: Nimba Kalka applied over the site of the wound**



**Image 5: Wound on the 15th day**



**Image 6: Wound on the 21st day**



**Image 7: Wound on the 30th day**

**RESULT AND DISCUSSION**

The wound started healing within 30 days with good results in normal colour formation without any complication, which proved the vaikritapaham (remove residual sequels of ulcer) property of preparation. Local application of Nimba Kalka provided good results by reducing wound size and promoting healing, and it proved to be cosmetically effective with the least scar formation.

The clinical features of Dusta Vrana (non-healing ulcer) improved around 4<sup>th</sup> week, and the wound completely healed at the end of 5<sup>th</sup> week.

On the concept of wound management, all efforts have been made to keep it clean during treatment, i.e. shodhana. An ideal debridement agent should not damage the surrounding healthy tissue of Dusta Vrana (contaminated wound) and must be capable of performing debridement effectively.

Lepana and bandhana (topical agent and bandage) are among the therapies chosen for shasti upakrama. A different form of external application is described for the convenience of treatment of wounds.

Lepa is a herbo mineral preparation used for external applications. The main basic concept of lepa is that wet drugs are pounded into

fine paste form, and dry drugs are pounded into fine powder form and mixed with any liquid media according to the demand of a particular disease condition.

Lepa does shodhana (cleansing of ulcer), utsadana (elevation of ulcer), ropana (healing of ulcer) and shophagna (anti-inflammatory); hence is chosen therapy.

**Wound healing phases:** Inflammatory, proliferative and remodelling, granulation, collagen maturation and scar formation are phases which run concurrently and are independent of each other. Dusta vrana is managed based on the involvement of dosha, site and inflammatory changes<sup>2,3</sup>. Management given by Acharya Sushruta is mainly two, i.e. Vrana (wound) and vrani (wounded) among sixty procedures told it includes measures to control vitiated dosha, controlling inflammation, surgical measures and measures of non-healing wounds<sup>4</sup>.

**Nimba (Neem):** Neem trees contain pharmacological constituents offering impressive therapeutic qualities, such as anti-viral, anti-fungal, antibacterial, anti-inflammatory, analgesic, and anti-carcinogenic. It has a complex of various constituents, including nimbin, nimbidin, nimbolide, quercetin, and sitosterol polyphenolic flavonoids from fresh leaves known to have anti-fungal, antibacterial activities. Therefore, we can see that Neem boosts the immune system on all levels while helping the body fight infections. Nimba does not destroy beneficial bacteria and other microorganisms needed to maintain optimum health.<sup>10-14</sup>

Neem has an almost magical effect on chronic skin conditions that often fail to respond to classical treatments. Psoriasis, eczema, fungal infections, skin ulcers. Neem product is utilized. Synthetic chemicals used to treat these conditions can produce adverse side effects such as allergic reactions and skin redness. Studies are currently underway to try to understand the skin-rejuvenating properties of Neem.

## CONCLUSION

To conclude, we can say that with the external application of Nimba Kalka lepa, the repair process was not complicated by infection, so there was no interference with the general health of the patient.

All the systemic functions were undisturbed; at the local site of the wound, the part was at an average temperature, had a natural colour, had granulation tissue, and was free from pain. It can be concluded that the drug effect of Nimba Kalka lepa possesses significant efficacy in Vrana ropana (healing) with fine scarring without producing any adverse effect. So, it can be recommended as a cost-effective, easy to prepare and effective therapy for wound healing.

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