

# The Effect of *Ashwaganda Ghrita* in the Management of Non-Healing Wound - A Case Study

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**Abstract:** Wound can be defined as a break in the continuity of skin or tissue often, which may be associated with disruption of the structure and function. The most important thing around which the entire science of surgery revolves is tissue restoration. The Wound healing (*Vrana-Ropana*) is the process of repairing damaged tissue. Presence of infection or prolonged inflammatory phase, plays a prime role in delayed wound healing. Acharya Sushruta describe the *Vrana*, its types, its management along with the process of wound healing. Acharya Sushruta elaborated 6 types of *Dushta Vrana*, and their treatment includes various therapeutic approaches categorized mainly as *Vrana-Shodhana* (wound cleansing) and *Vrana-Ropana* (wound healing). Additionally, Sushruta described sixty different techniques (*Shashti Upakrama*) for managing wounds. It also elaborated on six types of *Dushta Vrana*, and their treatment. In the current study, a topical formulation known as *Ashwagandha Gruta* has been selected for its wound-cleansing (*Vrana-Shodhana*) and wound healing (*Vrana-Ropana*) properties. *Ashwagandha* (*Withania Somnifera*) is one of the herbal Drug. It is used as a wound healer. Studies done on *Ashwagandha* shows that it is an Antioxidant, Anti-microbial and Anti-inflammatory drug which has great role in wound healing. Hence this case study is undertaken to evaluate the effect of *Ashwagandha* (*Withania Somnifera*) in the form of *Ghrita* in wound healing.

**Keywords:** Ashwaganda, Vrana, Ropana, Shodhana, Shasti-Upkrama, Utsadana

## 1. Introduction

*Ayurveda* has 8 branches which is known as *Ashtanga ayurveda*, in which *shalyatantra* is one of the branches which deals with *vrana* and its managements. A "Wound" is defined as a rupture of the physiological continuity of the skin and normal anatomical structures by external factors, but more critically a disturbance of function. It is the most common problem that surgeons faced on a daily basis. We cannot avoid suffering injuries in our lives. Different kinds of wounds need different kinds of care. The human body has a natural self-healing system. However, in certain conditions like as microbial infection, inadequate blood flow, the wound healing can be delayed. *Shalyatantra* is one of the distinct branches of *Ashtanga Ayurveda*, *Shalyatantra* explains and demonstrates surgical knowledge and procedure that were performed and used since thousands of years and useful even today. *Vrana* is a basic subject of *Shalyatantra*. 'Acharya Sushruta' has mentioned details of *Vrana* in his *samhita*; If proper management to the primary stage of *Vrana* is not provided it may lead to *Dushtavrana*.

The *Vrana* which characterized by *Puti* (Foul smell), *Puya* (Pus), *Strav* (Discharge), Chronicity and cannot healing within expected healing time can be known as *Dushtavrana* which can be correlated with non-healing wound.

An Infected wound is defined as a localized defect of the skin or underlying soft tissue in which pathogenic organisms have invaded into viable tissue surrounding the wound. Inflammation and tissue damage are caused by the immune system being activated by a wound infection, which also slows the healing process.

The wound healing process involves 3 phases i. e Inflammatory phase, Proliferative phase and Remodeling/Maturation phase.

- 1) **Inflammatory phase**-It begins immediately after formation and lasts for 72 hours. There is initial arteriolar vasoconstriction, thrombus formation, platelet aggregation due to endothelial damage and release of adenosine diphosphate (ADP). Later vasodilatation and increased vascular permeability develop. Here haemostasis, coagulation and chemotaxis occur.
- 2) **Proliferative phase**-It begins from 3rd day and lasts for 3-6 weeks. There will be formation of granulation tissue and repair of the wound. Granulation tissue contains fibroblasts, neocapillaries, collagen, fibronectin and hyaluronic acid.
- 3) **Remodeling/Maturation phase**-It begins at 6 weeks and lasts for 6 months to 1 or 2 years. There is maturation of collagen by cross linking and realignment of collagen fibres along the line of tension, which is responsible for tensile strength of the scar. There is reduced wound vascularity. Fibroblast and myofibroblast activity causes wound contraction. Type III collagen is replaced by type I collagen causing maturation of the collagen. Ratio of type I collagen to type III collagen becomes 4: 1.

## Objectives

- 1) To evaluate the effect of *Ashwagandha Ghrita* in Wound Healing.
- 2) To review the literature through the ayurvedic and modern classical text about disease and drug.

## 2. Literature Review

### SAMHITA KALA

- a) **Charaka Samhita:** *Dvivraniya Adhyaya in Chikitsasthan* contains full description of *Vrana* and its management. In these chapter, there is detailed description about Classification of *Vrana*, Signs and symptoms, 36 *Upkramas* have been mentioned for management of *Vrana*.
- b) **Sushruta Samhita:** *Sushruta*, Father of Indian Surgery, has precisely described *Vrana*. *Sushruta* has explained *Satkriyakala*, two types of *Vrana* (*Nija & Aaguntuja*), their sub types, *Shasti upakrama* (60 procedures for *Vrana* management), *Vrana upadrava* (Complications), *Sadhya-Asadhatya* (Prognosis) and its management with dietetic discipline. Classical references of *Ashwagandha* in *Vrana*-
  - *Acharya Sushruta* explains *Ashwagandha Kalka* for *Palivardhana*.
  - *Ropana* property is explained by *Acharya Sushruta* in *Mishraka Adhayaya*.
  - *Utshadana* property is explained when it is applied locally.
- c) **Astanga Sangraha:** The knowledge of wound and its healing was edited and classified on stage basis by *Vagbhata*. He advocated preparation and application of *ghee-based ointment* for local use.
- d) **Astanga Hridaya:** *Acharya Vagbhata* has described 15 types of *Nija Vrana*, there signs and symptoms. He has described 8 types of *Sadyo-Vrana*, which is different from that stated by *Sushruta* to some extent. On the basis of prognosis, he has classified *Vrana* into 3 types-1) *Sukhsadhya Vrana* 2) *Kasthasadhya Vrana* 3) *Asadhya Vrana* (*A. H. UTT 26*)

## 3. Methods and Material

### Application

The wound is cleaned with normal saline. After drying with sterile gauze, *Ashwagandha Gruta* is applied over the wound followed by sterile pads as absorbent layer. The dressing is secured with bandages without compromising the circulation. The dressing is removed in the evening and the wound is cleaned again with normal saline.

### Case Report

A 48 yrs old male patient presented with a non-healing wound over lateral aspect of foot below left ankle joint associated with pain, pus discharge, swelling, and itching for 3 months. The wound became infected with pus discharge.

- There was No H/O-Diabetes Mellitus, Hypertension or any other major disorder.
- The family history was also not significant with the patient disorder.

### Local examination

Location: lateral aspect of left foot below the left ankle joint.

Size: 4 × 3 × 2 cm

Discharge: Purulent discharge present

Floor: Covered with slough

Margin: Irregular

Edges: Inflamed

Tenderness: Mild tender

Local temperature: Slightly raised

### Approach

Preparation of *Ashwagandha Ghrita*

- 1) Collection of *Ashwagandha*-The roots of *Ashwagandha* were collected from authorised place.
- 2) Preparation of *Ashwagandha Ghrita*
  - a) Preparation of *Kwath*: Collected *Ashwagandha* roots was cleaned well and then cut into small pieces. It was taken in a iron pan and mixed with water. It was heated and stirred continuously so that water got evaporated and one fourth of it remained as *Kwath* in the vessel. It is allowed to cool. *Ashwagandha Kwath* is prepared.
  - b) Preparation of *Ashwagandha Kalka*-*Ashwagandha Churna* is mixed with water and *Ashwagandha Kalka* is prepared.
  - c) Preparation of *Ashwagandha Ghrita*-

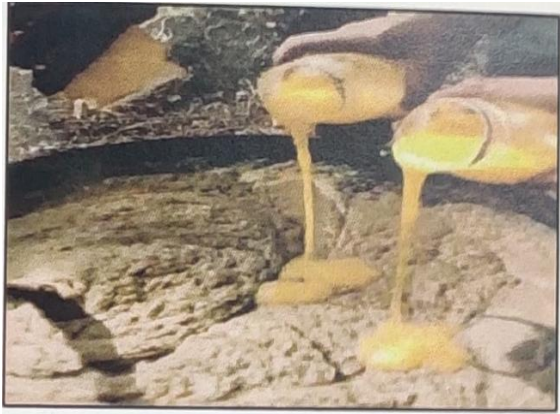
*Gaughrita* taken mixed with *Ashwagandha kalka* and *Ashwagandha Kwath* and heated on slow heat. It is stirred with spatula till the volume of the ghrita reduced. *Kalka varti* test is done to assess the Paak of the *Ashwagandha Ghrita*. When *Kalka varti* started to form, *Samyak Paak* is completed and *Ashwagandha Ghrita* is prepared. It is allowed to *Swanga-sheeta* then collected in air tight container.



Roots of Ashwagandha



Ashwagandha Kwath



Gogrita Mixed with Ashwagandha Kalka

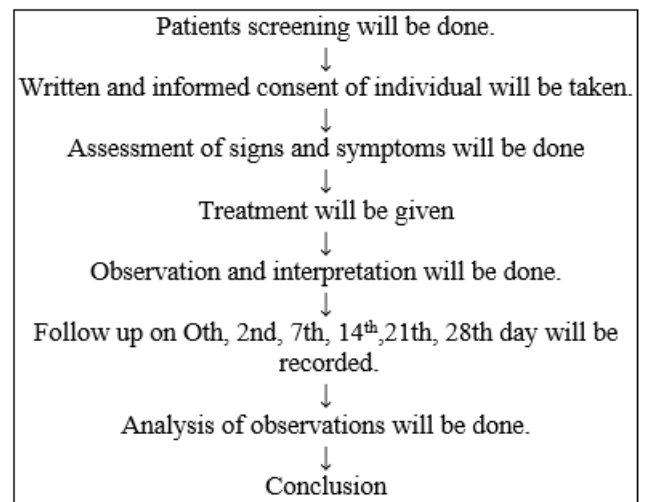


Ashwagandha Grita



Ashwagandha Kalka and Gogrita Mixed Kwath

#### Plan of Work



#### Result

The clinical feature of non-healing wound was improved around 2<sup>nd</sup> week and completely healed at the end of 5<sup>th</sup> week.

**Photographs Showing Ashwagandha Ghrita Dressing**



#### 4. Discussion

- The Treatment approaches on Ayurveda such as life style modification, management of underlying disease & systemic drug administration.
- There is no any specific scale applied for the assessment criteria for the case only the following points were observed-
- Change in pain over 1 month.
- Reduced pus discharge, swelling, and itching over 15 days.
- Effect on *Vrana Vedana*, Pain and tenderness was gradually reduced by the end of 3rd week of treatment.
- Effect on *Vrana Aakriti*: By 30th day, Vrana was completely healed, this may be due to the *Vrana Shodhana* and *Vrana Ropana* properties present in *Ashwagandha ghrita*.

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## 5. Observations

- There was improvement in the symptoms of the Patient.
- Pain and Redness reduced.
- Overall improvement in the quality of life was observed in the patient.

## 6. Conclusion

- 1) *Ashwagandha* is easily available and being used as a wound healing herb. This herbal drug is a good alternative for management of wound.
- 2) *Ashwagandha Ghrita* is found effective in wound healing as it helps in reducing the size of wound by its *Tikta, Katu Rasa*.
- 3) *Ashwagandha Ghrita* by virtue of its *Laghu Guna and Katu, Tikta rasa* do the *Shodhana* of the wound reducing the slough and discharge and thereby reducing the smell and pain of wound.
- 4) *Ashwagandha Ghrita* promotes wound healing as it increases the formation of granulation tissue by Collagen synthesis. New collagen fibres are formed, newer tissues regenerated, Angiogenesis is increased resulting in granulation formation.
- 5) By its *Snigdha Laghu guna* and *Katu, Tikta, Madhur rasa*, there is *Utsadana* of the wound resulting in increased epithelization and faster wound healing by wound contraction. Thus, *Ashwagandha ghrita* does role in wound healing.

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