



# Katupila (*Securinega leucopyrus*) A Boon for Bedsores- A Case Report

Snehal Sonani<sup>1\*</sup>, Vivekanand Kullolli<sup>1</sup> and Krishna Thorat<sup>2</sup>

<sup>1</sup>Shalya Tantra Department, Parul Institute of Ayurveda, Parul University, Vadodara – 391760, Gujarat, India; snehalsonani@gmail.com

<sup>2</sup>Department of Roga Nidan, Parul Institute of Ayurveda, Parul University, Vadodara – 391760, Gujarat, India

## Abstract

Pressure ulcer is a sequel of tissue necrosis and ulceration due to prolonged pressure. External pressure of more than 30 mmHg on the skin leads to ischemia (reduced blood flow) causing ischeohypoxia, necrosis and ulceration. It is more common between bony prominence and an external surface. It may be due to impaired blood supply, defective nutrition and neurological deficit. Ayurveda describes this type of non-healing ulcer in terms of *Dusta vrana*, in that context *Acharya Sushruta* had also mentioned it as "*Dirghakalanubandhi*" which suggests that these kind of ulcers take longer time to heal due to underlying reasons. This article is about the single case report of a 51-year-old male patient with a stage 3 decubitus ulcer over the right heel since 2 months. As decubitus ulcers especially of stage 3 is difficult to cure, ayurvedic management with internal medication and external therapy was performed in this reported case. For Internal medication, Tablet septilin (A Patent medicine of Himalaya pharmacy, India) and *Punarnavadi kashay* (A Patent medicine of Vaidhyaratnam pharmacy, India) was used for enhancement of better wound healing. For external application Paste *Katupila* and honey was applied for 30 days. According to the assessment, wound showed good response within 10 days and was completely healed in 30 days.

**Keywords:** Decubitus ulcer, *Dusta vrana*, *Katupilla*, *Punarnavadi kashay*, Tablet Septilin, Varicose Ulcer

## 1. Introduction

As per the healing stages of *Vrana* (*Dusta vrana*, *Shudhhavrana*, *Ruhyamanvrana* and *Rudhavrana*)<sup>2</sup>, *Dustavrana* is the stage in which normal healing process of the body is impaired due to disturbance in its basic prerequisites. Classical texts also comment on prognosis of different ulcers according to its clinical condition. In that context, *Dusta vrana* is described as difficult to cure (*Kastasadhya*). Specifically, it is mentioned that *Vrana* over bony area is more difficult to treat<sup>3</sup>.

This case report is of a 51-year-old male patient from Panchna, Gujarat, India reported to Parul Ayurveda Hospital, Vadodara, Gujarat, the case was presented as a complaint of non-healing ulcer of size 3.5×2.5 cm on right heel since 2 months

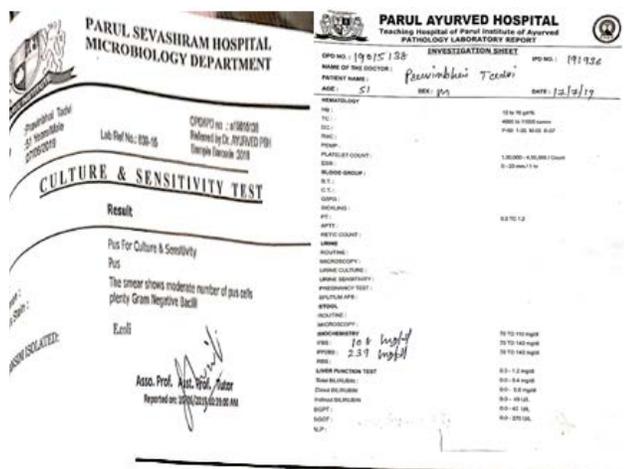
## 2. Present Illness and Past History

As per the history by the patient, he had a fall 1 year prior and had a spinal injury leading to paraplegia (Paralysis of lower limbs). He underwent surgery to treat this condition (details of previous treatment was not available with the patient at the time of admission). Even after surgery there was no marked improvement in the paraplegia of lower limbs. He was bedridden since last 6 months. Because of improper patient care in the bed, he developed pressure ulcer on the right heel, so patient was brought to Parul Institute of Ayurveda for further health care.

There was no history of diabetes mellitus, hypertension or any other systemic disease. There was

\*Author for correspondence





**Figure 2.** Investigation reports of the patient.

### 3.3 Diagnosis

*Dusta Vrana* (Pressure ulcer-stage 3)

## 4. Treatment Protocol

### 4.1 External Medication/Management

Cleansing of wound (*Vrana Prakshalana*) with distilled water followed by local application of *Katupila Churna* with honey once in a day for 30 days.

### 4.2 Internal Medication/Management

1. Tablet Septillin, 2 tablets after food twice in a day (Himalaya pharmacy)
2. *Punarnavadi kashay* 30 ml two times a day with equal quantity of water (Vaidhyaratnam pharmacy)

All the internal medicines were administered for a period of 30 days along with dressing of *Katupilla* and honey.

**Table 2.** Grading for assessment criteria

Sr. num.	Criteria	00	01	02	03
01	<i>Akruti</i> (Wound measurement in cm <sup>2</sup> )	≤ 2 cm <sup>2</sup>	> 2 cm <sup>2</sup> but <4 cm <sup>2</sup>	>4 cm <sup>2</sup> but <6 cm <sup>2</sup>	>6 cm <sup>2</sup>
02	<i>Jihvatalabhavat</i> (Granulation)	No granulation	Up to 25% covered with granulation tissue	25 to 50 % covered with granulation tissue	More than 50 % covered with granulation tissue
03	<i>Puti-puyamamsa</i> (Slough tissue)	No slough	Up to 25% covered with slough	25-50% covered with slough	More than 50% covered with slough

For prevention of further worsening of the present bed sore and to avoid formation of new pressure ulcer, an air bed was provided to the patient during the hospital stay.

## 5. Material and Method

### Materials

#### • *Katupila*:

It is a folklore medicine found in some regions of *Saurashtra* and *Srilanka*. Drug identification and authentication was done by *Dravya guna* department of Parul institute of Ayurveda, Vadodara, Gujarat.

#### • Honey:

For proper base for paste formation and to enhance the wound healing activity, honey was procured from Sandu pharmacy.

### Methods

- Every day wound was cleaned by distilled water prior to dressing
- Paste formulation made from *Katupilla churna* and honey were applied at ulcer site. Ulcer was covered with sterile bandaging.

## 6. Assessment Criteria (Table 2)

- Measurement of wound (*Akruti*): Wound size was measured by outlining the wound margins over a transparent paper; the same outlined figure was transferred to 1x1 cm graph paper to measure wound size by Picks formula.
- Picks formula:  $A=(C+1)/2P$ , where C is completely full squares and P is peripheral squares

## 7. Observation

Assessment was done on every 10<sup>th</sup> day. (10<sup>th</sup>, 20<sup>th</sup>, 30<sup>th</sup> day of first assessment). 1<sup>st</sup> day wound was almost 80% covered with slough. Desloughing was observed along with pale pink granulation devoid of discharge by 10<sup>th</sup> day. Ulcer healed completely by 30<sup>th</sup> day with minimal scar (Table 3, Figures 3, 4).

## 8. Results

## 9. Discussion

Case report suggests that *Ayurvedic* classical management for bed sore which can be compared to *Dustavrana* as detailed in *Ayurvedic* texts. *Dustavrana* is a broad term which covers all types of non-healing or infected ulcers. Considering bed sore, mostly it is

caused by impaired nutrition or blood supply which is indicative of “*Shosh*” or “*Dhatu kshay*”, so step by step *Dhatuvrudhhi* is needed for this wound healing. There may also be neurological deficit which causes hurdle in wound healing, so we need a drug or a therapy which will do neuroangiogenesis. *Kasthsadhyata* of *Asthigatvrana* also can be decoded under the contexts of more possibility of bed sore over bony prominence. In the condition of bed sore the main problem is the pressure over bony area, which finally leads to *Dhatukshayaavastha*. So in the case of bed sore *Dhatu purana* is as much important as *Vranashodhanand ropan*, because balancing of *Dhatu* is of prime importance for the *vranaropan*. That is the only reason that *Acharya* has mentioned that *Vrana* is *Sukhsadhya* in the *Vayastha purusha*<sup>4</sup>.

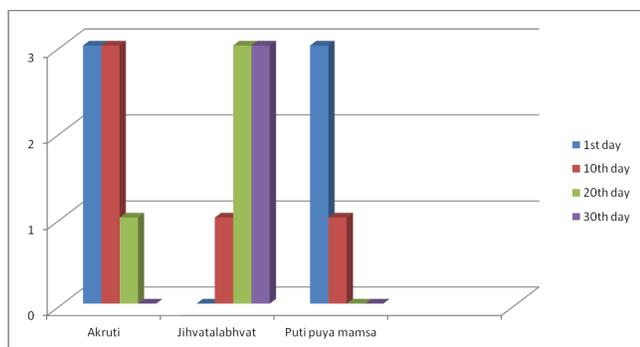
As discussed in the previous section *Nidana* in this type of *Vrana* is immobilization and pressure over bony

**Table 3.** 10-day interval observations of wound

Sr. num.	Criteria	0 day	10 day	20 day	30 day
01	<i>Akruti</i> (Wound measurement in cm <sup>2</sup> )	3(7.5 cm <sup>2</sup> )	3(6 cm <sup>2</sup> )	2(3.75 cm <sup>2</sup> )	(completely epithelized)
02	<i>Jihvatalabhavat</i> (Granulation)	0(no granulation)	1 (Up to 25% covered with granulation tissue )	3 (More than 50% covered with granulation tissue)	Completely epithelized
03	<i>Puti-puyamamsa</i> (Slough tissue)	3 ( More than 50% covered with slough)	2 (25-50% covered with slough)	0 ( No slough)	Completely epithelized



**Figure 3.** Healing of wound from day one to 30<sup>th</sup> day.



**Figure 4.** Graph showing the difference between the 03 criteria from day one to 30<sup>th</sup> day.

prominence which can be considered as a *Stabdhata*, which ultimately leads to *Chal* and *laghugunakshay* of *Vatadosha*, so there will be sang of *Vatadoshas* due to *Vrudhha* (Increased) *Kaphadosh*. As per reference given by *Acharya*, *Vata* is the only carrier of body elements i.e. *Dosha*, *Dhatu*, *Mala*<sup>5</sup>. so necessary nutritional element can't reach the *Vrana*. And also *Puranprakriya* of body will be disturbed as *Vatadoha* is important for *Purana*<sup>6</sup>. Even though *Prakrutkapha* is required for *vrana* *ropana*, on contrary *Dushitkapaha* is obstructer to wound healing<sup>7</sup>. As there is a normal tendency of the body to heal but in stage 3 pressure ulcer, it will take several months to heal or may not heal at all. Several months of immobility (*Stabdhata*) will induce *Kaphavrudhhi*, it will result in more debris formation (*Puya*)<sup>8</sup>. By combined effect of low nutrition to body tissue and formation of excessive debris, the bed sore healing will be delayed.

Shape of the wound is also important to validate the prognosis of wound. *Acharya* has mentioned that *Vruttaavranaakruti* is *prakrut*<sup>9</sup>. It indicates that *Vruttaakruti* wound can be easily contracted and epithelized comparative to other wound shapes. But prognosis cannot be decided based upon only the *Akruti* of *Vrana*. Other factor i.e. *Vyadhi* (*Vrana*) *Avstha*, *Rugnaavstha* or *Rutubala* also should be considered for making ideal prognosis. Consideration of *Visarga kala*, *Rugnabala* will be increased so it will also enhance *Vrana ropana*<sup>10</sup>.

So, we can say that protocol for the management of bed sore can be *Nidanaparivarjan* (relief in pressure over ulcer site), *Vranashodhana* and *Vranaropana* with *Dhatupuran*.

According to this management protocol, first is to avoid causative factors (*Nidanaparivarjan*) for this purpose the air bed was used and position was altered. This resulted in proper channelization of *Vata dosha* (*Vataanuman*) and also diluted the excessive *Kapha* (*Kaphavilayan*). So finally by doing this, *strotas sang* will be cleared out. So *Uttarottardhatupuran* will occur. For *Vranashodhana* purpose local application of *Katupila* and honey was carried out. *Katupila* contains tannins and flavonoids; it increases the availability of nitric oxide in hypoxic tissue and warded off the endothelial dysfunction. This triggers neogenesis (regeneration of biological tissue) and vasculogenesis forming neovascularization and resulting in fresh epithelialization, assisting in wound healing<sup>11</sup>. Honey is a hyperosmolar medium, preventing bacterial growth. Because of its high viscosity it forms a physical barrier, and the presence of the enzyme catalase gives honey antioxidant properties<sup>12</sup>. We used *Punarnavadi Kashay* as its name suggests it rejuvenates the tissues to facilitate neoangiogenesis and improves microcirculation because of the proper channelization of *Vata dosha* (*Vatanuloman karma*). Tablet Septilin played the role of an antibacterial drug and immunity boosting drug assisting in early pathway to healthy wound.

## 10. Conclusion

This case of stage 3 bed sore was healed within 30 days, against all odd situations, i.e.

1. Old age
2. Paralyzed limb and delayed or non-healing nature of the stage 3 bed sore, with the use of air bed, change of position, internal and external application of Ayurveda medicine.

*Katupila* claimed to have *Tikta* and *Kashay* rasa is expected to possess *Laghuguna* which helps in wound healing by *Lekhana* and *Ropana* properties<sup>13</sup>. Further the regenerative properties of *Punarnavadi Kashay* and Tablet Septilin may have accelerated the wound healing and thereby reduced healing duration

This single case study is expected to ignite optimism to use *Katupilla* for stage 3 bed sore wound healing as observed.

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