

## Varicose Ulcer Management with Topical Application of Katupilla paste (Securinega leucopyrus): A Single Case Study

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### Abstract

Venous ulcer develops at around and above the medial malleoli of foot and occurs as a result of recanalization of DVT (deep vein thrombosis). These ulcers are often large in size, non-healing, tender and recurrent with secondary infection. In this case report a 73 years old male patient of varicose ulcer at medial malleolus of right foot was visited in OPD. Patient had complaints of severe throbbing pain, watery discharge, swelling in right foot and large ulcer (12cm x 10cm) at medial malleolus. The pus culture report showed absence of microorganism (Bacteria and fungus). So this case was diagnosed as non infected varicose ulcer and was successfully treated with herbal paste of *Katupilla* (*Securinega leucopyrus*). Wound was cleaned with normal saline and then applied paste of *S. leucopyrus* leaves powder mixed with sesame oil daily once in the morning. Along with this crepe bandage applied at affected part above ankle joint and Rasayan powder (Ayurved medicine) 5gm orally two times a day was given. Wound healed completely within two months of treatment without any complication. Hence this case highlighted that varicose ulcer can be treated with local application of *S. leucopyrus* paste.

**Keywords:** Ayurveda; Katupilla; Non Healing Ulcer; Rasayan Powder; *Securinega Leucopyrus*; Thumari; Varicose Ulcer; Wound.

### Introduction

In Ayurveda Sushruta mentioned 60 measures for management of *Vrana* (wounds/ulcers) which have been dealt since the period of *Veda* to current era. Non-healing wounds present serious problems for patients, family and clinicians. Most of wounds are associated with a small number of underlying disorders such as Diabetes mellitus (DM), leprosy and peripheral vascular diseases.

A non-healing ulcer or chronic wound is defined as a wound that does not improve after four weeks or does not heal in eight weeks. These wounds includes diabetic foot ulcers, venous-related ulcers (varicose ulcers), pressure ulcers, wounds related to metabolic diseases, wounds that repeatedly break down and non-healing surgical wounds.

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In this regard, Sushruta, a father of surgery also mentioned the non-healing wounds in similar manner in Ayurved classical text Sushruta Samhita [1]. The vast majority of chronic wounds can be classified into three categories i.e. venous ulcers, diabetic ulcers and pressure ulcers [2].

In developed countries, the most common chronic wounds are leg ulcers. The prevalence of varicose veins increases with age which is in age group 55-64 (55.7%) [3]. Venous ulcers commonly develop at around and above the medial malleoli because of presence of large number of perforators which transmit pressure changes directly into superficial system. Ulcer is often large, non-healing, tender and recurrent with secondary infection. Venous ulcer occurs as a result of recanalization of DVT (deep vein thrombosis) and the leg is commonly called as postphlebotic limb. It presents with complications of venous diseases like eczema, ulceration, lipodermato sclerosis and venous ulcers [4].

*Securinega leucopyrus* is a desert climatic plant found in nearby Jamnagar district of Gujarat state of India called as "Spinous fluggea" in English (Fig. 6) [5]. It consists of quasintrin, albumin, resins and coloring agents. *S. leucopyrus* leaves are said

to be an antiseptic and its paste is used in folklore to extract any extraneous materials from body. In vitro antimicrobial activity of *S. leucopyrus* has been evaluated which showed a good potential [6].

#### Presenting concerns

A male patient of age 73 years visited outpatient department IPGT&RA Ayurved Research Hospital, Jamnagar with large ulcer at medial malleolus of right foot. Patient had complaints of severe throbbing pain, watery discharge, swelling in right foot and large ulcer at medial malleolus. In history patient had severe cellulitis in right foot which open spontaneous and leads to large superficial wound at medial malleolus one month back. He had taken treatment for his complaints from local doctor but did not have relief so he consulted to Ayurved hospital.

#### Clinical Findings

Local examination revealed wound at medial malleolus of size 12cm x 10cm, swelling at surrounding area, discharge and slough. (Figure 1) Prominent varicosity at medial side of both lower limbs was observed. In past history patient had history of severe cellulitis at right lower leg so pus drainage and then skin grafting was performed at Shrikishna mission hospital Haridwar in 1999. He had history of ligation of varicose veins of left lower leg in 2000 at the same hospital. He had no any history of cardiac diseases, diabetic mellitus, tuberculosis, venereal diseases, bronchial asthma, anemia and any other major illness. Patient did not have any kind of addiction. So this case was diagnosed as varicose ulcer and admitted for Ayurved management in Shalya male ward. The informed consent for the treatment and to publish the images has been taken from the patient after admission.

#### Timeline

Patient's occupation was standing job in industries as boiler assistant for six to eight hours daily from 1965-1985 (20 years) in Kerala. Patient lived in Haridwar (UP) during 1991-2006 and Dwarika (Gujarat) since 2006 to till date doing *pooja* in standing position.

#### Diagnostic Focus and Assessment

Routine blood investigation for complete blood count (CBC), blood sugar level and serum creatinine were normal except increased white blood

corpuscles (WBC) and neutrophils. The pus culture report was negative for micro-organism both gram positive and gram negative and for fungal also (Table 1). X-ray of affected foot revealed no any bony involvement except local soft tissue odema.

**Table 1:** Investigations at baseline:

Investigations	Baseline
TLC	17400/cu mm
DLC	N-83, L-10, E- 3, M-4
Hb%	12.3 gm%
ESR Westergreen	60 mm per hour
Platelet	188 mil/cu mm
BT	1 min 25sec
CT	3 min 55sec
FBS	73 mg/dl
Serum creatinine	1.2 mg/dl
HIV, VDRL, HBSAg	Non-reactive
Aerobic culture report	No bacterial pathogen isolated after 48 hours of incubation at 37°C under aerobic atmosphere.
Fungal culture report	No fungal pathogen isolated after 7 days of incubation at 37°C under aerobic atmosphere.

#### Therapeutic Focus and Assessment:

Wound cleaned with normal saline and *S. leucopyrus* leaves powder mixed with sesame oil was applied on wound. As wound was big the leaves powder 15 gm and sesame oil 10 ml was required in initial days. The symptoms like pain, swelling and discharge were markedly reduced and wound became clean with mild slough after 7 days (Figure 2). Treatment continued daily and wound base became clean due to increased circulation and neo-vascularisation after 15 days (Figure 3). Day by day wound size reduced due to wound contraction and epithelisation which remained half of the size (approx 6cm x 5cm) after one month. Along with wound contraction the healed scar changes to normal skin colour and reduced in size which one fourth of initial size (Figure 4). Lastly a big non healing varicose ulcer at medial malleolus of right foot healed completely after two months without complication (Figure 5).



**Fig. 1:** Large varicose ulcer at medial malleolus of right foot (size 12cm x 10cm)



Fig. 2: Improvement in pain, swelling and discharge after 7 days



Fig. 6: Katupila/Thumari (*Securinega leucopyrus*) Plant with fruits



Fig. 3: Status of ulcer after 15 days



Fig. 4: Wound contraction and fresh wound after one and half month (size 2cm x 3cm)



Fig. 5: Ulcer healed with white scar within 2 months.

#### Follow-up and Outcomes

The patient was treated as IPD (in-patient department) up to complete wound healing that is for two months as patient was saint and stay in the Dwarika so it is not possible to treat on OPD basis. After discharge patient asked to follow up after every one month to see any recurrence and there was no any recurrence or complaints up to six months.

#### Discussion

According to Sushruta, among the 60 measures of comprehensive wound management, *Kalka* (paste) is indicated in cases of chronic wounds which are reluctant to heal [7]. The paste performs both the functions of cleansing as well as healing in non healing wounds. A Traditional Ayurved formulation Rasayan powder [*Amalaki* (*Emblica officinalis*), *Guduchi* (*Tinospora cordifolia*), [8] *Gokshur* (*Tribulus terrestris*)] orally helped to maintain general health of the patient. These individual ingredients and in combination have antioxidant effects explained in traditional use as one of the best rejuvenative tonics. Sushruta has mentioned that *Tila Taila* (sesame oil) is best herbal oil and useful in bulk promoting, subtle, endows satiety, aphrodisiac, skin tonic and enhances retention power [9]. The similar property herb *Katupila* (*Securinega leucopyrus*) from Sri Lanka which has shown wound healing activity in cases of diabetic wound, chronic wound and other non healing wounds [10-14]. *S. leucopyrus* has wound debridement activity and it is essential in initial stage as wound has slough, oedema and discharge. Drug has neo-vascularisation property (improve circulation) which plays important role in cases of varicose ulcer as there is hampered blood circulation. Wound was quite big so in surgery the skin grafting is advisable which is expensive and sometimes

not acceptable due to old age. Another positive finding from this case is normal pigmentation were takes place after healing of wound. This is nothing but the Sushruta's concept of *Savarnikarna* (normal coloration of healed wound) among seven procedures of wound management. The take-away message from this case report is non-healing varicose ulcer can be treated with Ayurveda herbal paste of *S. leucopyrus* without skin grafting.

### Conclusion

This single case study highlighted that paste of *Securinega leucopyrus* mixed with sesame oil has healing potential in varicose ulcer and further research is needed in more cases of non healing ulcers for its validation.

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