

## Clinical efficacy of *Thumari* gel (*Securinega leucopyrus* [Willd.] Muell) in the management of superficial non-healing leg ulcers- A rare case report

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### Abstract:

Ulcers in lower extremity are generally caused by venous insufficiency, arterial insufficiency, and diabetic neuropathy. Inflammatory ulcers are also difficult to diagnose because of underlying pathophysiology rests on inflammation and immunologic phenomena. Definitive diagnosis and multidisciplinary treatment approach are needed to manage lower extremity ulcers. These ulcers may hamper the quality of life of patient. Here we reported a new case of post fracture of shaft of right tibia bone, presented with painful, hypertrophied, irregular shaped ulcer on anterior aspect of tibia gradually developing since 3 months. A male patient of 45 years old consulted to OPD with above complaint that was unable to bear weight on the effected leg (right lower limb). This case was managed with a local application of *Thumari* Gel and ulcers were almost healed within 6 weeks of wound care along with internal use of Ayurveda medicines. This case concluded that regular local application of *Thumari* Gel helpful in healing of chronic ulcer.

**Key words:** Leg ulcer, Non-healing ulcer, *Thumari* Gel, *Securinega leucopyrus*.

### Introduction:

Ulceration is a result of discontinuity or erosion of underlying subcutaneous tissue of the skin.<sup>[1]</sup> It represents a difficult problem which significantly affects the quality of life of patient by pain, localized infection, and systemic symptoms.<sup>[2]</sup> Venous insufficiency,<sup>[3]</sup> arterial insufficiency, and diabetic neuropathy are major conditions for developing ulceration in lower extremity.<sup>[4]</sup> In Ayurveda, these types of etiology can be considered under *Dusta-Vrana* in which there is localization of *Tridosha* and are associated with foul smell, continuously flowing putrefied pus

along with blood, with cavity and having chronic in nature. These lower extremity ulcers have tendency to delay in healing or non-healing.

Multidisciplinary treatment approach might be providing earlier healing of ulcer with minimal complications. *Securinega leucopyrus*; a known herb for treatment of diabetic foot care, was formulated for management of delayed or non-healing ulcers. In this case the *Thumari*,<sup>[5]</sup> a herb from Jamnagar region in the form of gel has been tried and found very effective in healing of multiple superficial ulcers. Previous case studies reported wound

healing potential of *Thumari* (*Securinega leucopyrus* [Willd.] Muell) in powder and *taila* forms in the management of Beurger's Ulcer and infected wound respectively.<sup>[6-7]</sup> Hence considering the wound healing activity the drug has been tried in gel form in this case and found effective in non-healing multiple ulcers.

### Case Report:

A 45 year male patient, consulted to outpatient department of IPGT&RA, hospital Jamnagar; was presented with painful, hypertrophied, irregular shaped ulcer over anterior aspect of tibia gradually developed since 3 months after of tibia fracture (6 months ago) which was earlier managed with external fixation. Ulcers were also presented with oozing. Patient was unable to bear weight on his affected lower limb. Patient had no previous history of HTN and DM. According to patient history superficial ulceration were progressively developed after the successful management of tibial fracture with MIPPO technique. Patient was advised to complete bed rest till recovery. During that period he observed that small ulceration were developing on anterior aspect of tibia which were progressively increasing and are not healing after proper medication. These ulcers were not healed with all attempts of modern medicine so patient approached to Ayurveda hospital. Patient was examined and found multiple superficial ulcerations with tendency of oozing, severe pain and on touch bleeding. The diagnosis was made as non-healing superficial multiple leg ulcers. This case

was planned with aim to evaluate the effect of *Thumari* Gel (*Securinega leucopyrus* [Willd.] Muell).

### **Vrana Pariksha (Local examination):**

During the local examinations following findings were noted.

**Site:** On anterior aspect of tibia

**Number:** Multiple

**Edge and margin:** Irregular

**Floor:** hyper granulation tissue

**Base:** Indurated

**Discharge:** Sanguineous.

**Surrounding skin:** normal pigmentation

**Tenderness:** Present.

**Regional Lymph node:** Not enlarged and palpable.

### **Preparation of *Thumari* gel:**

For *Thumari* gel preparation; *Thumari* oil was prepared on the basis of *sneha-paka kalpana* adopting classical method in ratio of *Sneha* (Sesame oil), *Kalka* (prepared from leaves of *Thumari*) and *Kwatha* (prepared from leaves and stem of *Thumari*) in 1:4:16 respectively. Then Aerosil (15% w/w) was added in prepared *Thumari* oil and triturated. Prepared Gel was packed in air tight container.

### **Methodology or application of drug:**

Superficial ulcerations were cleaned daily with *Triphala kashaya*.<sup>[8]</sup> After cleaning of ulcer, topically *Thumari* Gel was applied and covered with sterile gauze pieces and bandaged daily once in the morning hours. The assessment was done on the basis of relief in symptoms i.e. pain, size of ulcers and oozing.

**Weekly observations:***Fig. 1: On Day 1<sup>st</sup>**Fig. 1.1: Close-up view**Fig. 2: After 1<sup>st</sup> Week**Fig. 3: After 2<sup>nd</sup> Week**Fig. 4: After 3<sup>rd</sup> Week**Fig. 5: After 4<sup>th</sup> Week**Fig. 6: After 5<sup>th</sup> Week**Fig. 7: After 6<sup>th</sup> Week***Result and discussion:**

In this case the prognosis of the disease was explained to the patient and consent has been taken that if condition is bad or any septicemia occurs then he will be shifted to civil hospital. The daily dressing was started and observed for improvement in sanguineous discharge, granulation tissue, and ulcer size contractions were observed weekly. On the 1<sup>st</sup> day, ulcers were associated with hyper granulated tissue, irregular edge and sanguineous discharge. Peripheral skin was observed healthy with normal pigmentation [Figure-1]. After 1<sup>st</sup> week, ulcer margins were

present with healthy epithelialization with reduced discharge. [Figure-2]. After 2<sup>nd</sup> week, ulcers were inherited into smaller sized [Figure-3]. During this treatment ulcer healing was progressively favorable. After 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> week; ulcer sized was remarkably reduced with healthy contraction of ulcer margins [Fig. 4, 5, 6].

Healing of superficial ulcer with good strengthening of tissue represents acceleration of the phases of healing with promoting vascularity and collagen deposition, which is achieved by local application of *Thumari* Gel. *Thumari* leaves possess antibacterial, <sup>[9]</sup> anti-

inflammatory and immune-modulatory activities.<sup>[10]</sup> These properties are responsible for proper disinfection of ulcer and promote healthy granulations tissues. *Thumari* leaves have antioxidant activities which scavenge off and inhibit generation of the free radicals.<sup>[11]</sup> These properties of the drug regulate healing sequence which results in signs of healing. Topical application of *Thumari* Gel provides equivalent dispersion of molecules, maintains adequate moisture balance on the lesions (ulcers) and results in remarkable acceptability and earlier healing. *Triphala Kashaya* had also promoted in reducing hyper granulations and helpful in healing.

### Conclusion:

This single case concluded that regular cleaning with *Triphala Kashaya* and dressing (local application) of *Thumari* Gel have healing activity in non-healing chronic leg ulcers. The gel formulation is safe, easy to apply and tolerable to the patient without any side effect. This formulation need to be tried in more number of cases.

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