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### ***Papaya*-based Ayurvedic dressing in the management of a chronic venous ulcer: A Case Report**

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#### **Abstract**

Chronic ulcers constitute a major challenge in clinical practice due to their recurrent and non-healing nature in which venous ulcer becomes the most prevalent one. Conventional management often requires long-term treatment with limited outcomes. In Ayurveda several herbal formulations are used for management of ulcers externally. *Papaya* (*Carica Papaya*) has been used for its wound-healing potential owing to the proteolytic enzymes papain and chymopapain, which promote debridement and tissue regeneration [1]. This is a case report of a 49-year-old female with a five-year history of a non-healing varicose ulcer above the lateral malleolus, treated with *Papaya*-based dressing along with supportive Ayurvedic medications. Dressing consisted of grated unripe *Papaya* fruit mixed with *Haridra Churna* and rice flour, applied daily after cleansing with *Triphala Kwatha*. Within one week, reduction in discharge was observed, and healthy granulation tissue

appeared by 1.5 weeks. This case highlights *Papaya*-based dressing as a simple, cost-effective, and effective Ayurvedic modality in the management of chronic varicose ulcers.

**Keywords:** *Papaya*, Venous ulcer, Varicose vein, Ayurvedic dressing, Wound healing, *Carica Papaya*

#### **Introduction**

Venous ulcers are chronic wounds associated with venous insufficiency, often presenting with pain, discharge, pigmentation, and delayed healing. Varicose veins are being one of the major reason, post phlebotic limb due to previous DVT also accounts for the same. Venous doppler study can be used as a diagnostic tool along with proper clinical examination. Modern approaches such as compression therapy, debridement, skin grafting and specific treatment for varicose vein can be done for the management. The management offer partial relief, but recurrence rates remain high through out the

life, which affect the quality of life of the patients.

Ayurveda describes such ulcers under *Dushta Vrana*, managed with *Vrana Vishodhana* and *Vrana Ropana* measures [7,8]. Several herbs with proven antioxidant, antimicrobial, and wound-healing actions, such as *Triphala*, *Haridra*, and *Papaya*, have been documented [2,3,9] for the cleaning and dressing of the ulcer in daily basis. Drugs with *vranasodhana* and *vranaropana* effect can be selected according to the condition of patient. cleaning of the ulcer with herbal decoctions followed by dressing with *kalka*, *varthi*, *ghritha* etc. are the common management protocol in daily practice.

*Papaya* (*Carica Papaya*) has long been used in folk medicine for ulcers due to its enzymatic debridement and antimicrobial effects<sup>[1]</sup>. The main content curcumin in *haridra choorna* is an antioxidant, antibacterial, antifungal and has excellent effect in wound healing (*vrana ropaka*). The combination of the two drugs offer a cost-effective alternative to chemical wound cleansing and debriding agents. This case report presents the successful outcome of *Papaya*-based dressing in a chronic varicose ulcer case.

### Case report

A 49-year-old female presented with a non-healing ulcer above the lateral malleolus of the right leg persisting for five years is admitted in *salyatantra* department, Government Ayurveda college, *Tripunithura*, Kerala on 31/10/2024. The ulcer developed following varicose vein associated with blackish discoloration of the lower limb followed after her delivery. Initially there were only engorged and tortuous veins in

lower limb with discoloration and itching. Patient started to notice an ulcer over the area got prescribed with antibiotics and dressing after allopathic consultation. After getting a temporary relief, symptoms got aggravated during the daily routine works which she needs to stand for a long time as a part of her job. She reported pain and frequent discharge recurrently along with the non healing ulcer. Patient consulted in *Salyatantra* OPD and got admitted for better management.

She had a normal appetite, regular bowel habits, micturition within normal limit and reduced sleep pattern due to pain. She had been assessed with a BP -110/70mmhg, pulse rate-62bpm and respiratory rate-12/min.

### Investigations

#### Blood report

- BT: 2 min
- CT: 4 min 30 sec
- Total WBC: 9,200 cells/mm<sup>3</sup>
- HIV, HBsAg: Negative
- FBS: 91 mg/dL, PPBS: 129 mg/dL
- Hb: 10.2 g/dL

#### Clinical Findings on examination of ulcer

- **Ulcer size:** 10 cm \*10cm
- **Shape :** irregularly oval
- **Position :** above lateral malleolus of right lower limb
- **Edge:** Sloping with irregular margins
- **Floor:** Slough with pale granulation tissue
- **Discharge:** Yellowish, purulent, moderate amount
- **Surrounding skin:** Blackish discoloration
- **Tenderness:** Grade 1
- **Base:** Muscle exposed
- **Peripheral pulses:** Palpable

#### Treatment

- **External treatment**

- From 31-10-2024 to 20-11-2024  
Daily wound cleansing with *Triphala Kwatha* followed by dressing with grated unripe *Carica Papaya* fruit mixed with *Haridra Churna* and rice flour, for 21 days under aseptic precautions.

- From 21-11-2024 to 14-12-2024  
Daily wound cleansing with *Triphala Kwatha* followed by dressing with *jathyadi ghritha* under aseptic precautions.

- **Internal medicines**

**RESULT:**

From 31-10-2024 to 20-11-2024

- 1) *Gugguluthiktakam kwatha*-90 ml bd/bf
- 2) *Kanchanara Guggulu*-1bd with kwatha
- 3) *Kaisora Guggulu* -2 bd/ af
- 4) *Lohasava* 20ml bd/ af

From 21-11-2024 to 14-12-2024

- 1) *Punarnavadi kwatha*-90 ml bd bf
- 2) *Kanchanara with kwatha*
- 3) *Kaisoragugulu* 2bd/af

Day / Week	Ulcer Floor	Discharge	Granulation Tissue	Pain/ Tenderness	Other Notes	Photograph
0 (Before Rx)	Covered with slough, pale	Yellowish, purulent, moderate	Absent / poor	Present (Grade 1)	Surrounding skin blackish, muscle exposed	Fig. 1
7th day	Slough reduced	Reduced considerably	Initial granulation visible	Mild	Ulcer margins clearer	Fig. 2
10–15th day	Slough markedly reduced, floor more cleaner	Minimal discharge	Healthy red granulation tissue	Minimal	Signs of epithelialization beginning	Fig. 3
21th day	Healthy granulation tissue	Scanty discharge	Well-formed, vascularized	Absent	Wound contracting	Fig. 4
30th day	Epithelialized	No discharge	Mature granulation, healing edge	Absent	Marked healing, skin colour improving	

After 21 days ulcer managed as conventional method with *triphala kwatha* cleansing and *jathyadi ghritha* dressing up to complete healing of ulcer.

FIG-1



FIG-2



FIG-3



FIG-4



FIG-5

Healed ulcer after 45 days



FIG-6

**Main ingredients-grated Papaya and haridrachurna:**



FIG-7

**MATERIALS FOR DRESSING**



### Discussion

Chronic varicose ulcers are difficult to heal due to persistent venous stasis and microbial

contamination [10]. In Ayurveda, they are described under *Dushta Vrana*, requiring debridement and purification before healing [7,8]. *Vranasodhana* is a must needed step for the healing of *vrana*.

*Papaya* (*Carica Papaya*) is rich in papain and chymopapain, which facilitate enzymatic debridement of necrotic tissue and slough without harming viable cells [1]. It contains lysozymes which has antibacterial activity, helps to reduce microbial colonization during the early stages of wound healing. These enzymes, along with flavonoids and alkaloids, contribute to its antimicrobial and wound-healing effects [6]. It contains vitamin C and some anti-oxidants which promote collagen synthesis. Previous reports support *Papaya*'s efficacy in chronic skin ulcers [1].

In this case, *Papaya*-based dressing accelerated healing by reducing slough markedly and promoting granulation. *Haridra* contributed its antibacterial and anti-inflammatory actions [3], while rice flour acted as a binding agent in dressing. Together, this combination acted synergistically to control infection, removal of slough, stimulate tissue regeneration, and restore wound health.

Thereafter the conventional protocol with *triphala kwatha* as a cleaning agent [2] and followed by dressing with *jathyadi ghritha* which is known for its *vranaropana* property was used systematically.

Thus, *Papaya*-based Ayurvedic dressing emerges as a safe, inexpensive, and effective wound management modality, particularly useful in resource-limited settings.

### Conclusion:

This case demonstrates that *Papaya*-based Ayurvedic dressing can significantly improve

healing in chronic venous ulcers by reducing slough with accelerated wound cleansing. The outcome suggests its potential as a simple, affordable, and effective intervention, warranting further clinical studies.

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