

# Management of post-COVID non-healing ulceration and gangrene through Ayurveda -a case report

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## ABSTRACT

**Introduction:** Non-healing or chronic ulcers are spontaneous or traumatic lesions, usually in the lower extremities. that are non-responsive towards healing even on appropriate care. The underlying etiology may be related to systemic or local disorders. The etiological factors include poor blood circulation, comorbid conditions, age, emotional stress, etc. In Ayurveda, the non-healing wound can be correlated with Dushtavrana.

**Patient history:** 86-year-old male patient came to OPD with complaints of a wound on the dorsum of the right leg, and black discoloration of the third toe of the same leg. He had a history of COVID, two months back for which he was admitted to the covid care center for 15 days. On the 10th day of admission, a small boil was found on the dorsum of the right leg which was converted to a wound. He had no history of Diabetes mellitus. he had taken treatment from a private hospital where he was advised partial amputation of the 3rd toe and grafting of a wound.

**Intervention:** He has been treated with internal and external medications considering dosh and dhatu involvement.

**Outcome:** It resulted in complete wound healing and regaining of third toe necrosis.

**Conclusion:** This study demonstrated that non-healing wound can be well managed by Ayurveda interventions

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## INTRODUCTION

Non-healing or chronic ulcers are spontaneous or traumatic lesions, usually in lower extremities that are non-responsive towards healing even on appropriate care. The underlying etiology may be related to systemic or local disorders. <sup>[1]</sup> The non-healing ulcers include many types like diabetic, venous, arterial, traumatic, and pressure ulcers. It is a major health problem having a world prevalence ranging from 1.9 to 13.1%. <sup>[2]</sup> The incidence of it is found in the aged population and the risk factors are smoking, obesity and diabetes. It affects the quality of life and financial burden for the patient and healthcare system

The standard management of ulcers includes wound cleansing, debridement of necrotic tissue, dressing, treatment of infection, using antibiotics, antiseptics, and topical antibacterial agents, ischemia management, and medical management of comorbidities are also important measures. <sup>[3]</sup>

The advanced treatment for non-healing ulcers includes hyperbaric oxygen therapy, skin grafting, VAC (vacuum-assisted closure), and surgical management like angioplasty and reconstructive surgery as per need. <sup>[4]</sup>

Gangrene is a type of tissue death caused by a lack of blood supply. Symptoms may include a change in skin color to red or black, numbness, swelling, pain, skin breakdown, and coolness. Dry gangrene is one of the types of Gangrene. It is a form of coagulative necrosis that develops in ischemic tissue, where the blood supply is inadequate to keep tissue viable. It is not a disease itself, but a symptom of other diseases. <sup>[5]</sup>

## KEYWORDS:

Non-healing ulcer,  
dry gangrene,  
Dushtavrana,  
Ayurveda intervention

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This Case is treated by considering it as Dushtavrana described in SushrutSamhita.<sup>[6]</sup>The involvement of Dosha(biological humor-Vata-pitta-kapha), Dhatu(tissues)and strotas(macro and microchannels)was assessed because, it is mentioned in Ayurveda that evaluation of involved Dosha,Dhatuand strotasis the only necessityfor appropriate treatment. <sup>[7]</sup>

**Case history**

A 85-year-old male patient came to OPDon 30/5/21 with complaints of a wound onthe dorsumof the rightfoot, foul-smelling discharge along with pain and blackish discoloration of thethird toe of the rightfoot(signs of dry gangrene). The patient had a history of COVID, two months back for which he was admitted toa covid care centerfrom 22/2/21 to 5/3/21.On the 5<sup>th</sup> day of discharge, a small boil was found on the dorsum of the right foot which was converted to an ulcer. He took treatment from a general practitioner where he had been given antibiotics and anti-inflammatory medication for 5 days. He had no improvement in the wound but he didn't approach any doctor and continued dressing at home. As days passed, the wound size was enlarged and blackish discoloration of the tip of the right foot was found. With these features, he also felt febrile and lack of appetite. Then his son took him to the surgeon on 25/5/21.He was investigated with CBC,Urine examination, and colour Doppler of the right foot. He advised debridement in general anesthesia, VAC (vacuum-assisted closure), and split skin graft (SSG). His son was not willing for surgery at this age, hence he approached for Ayurveda treatment.

He had no history of diabetes or hypertension. On general examination, he was pallor, anicteric, tachycardic (pulse rate-100/min.)He had constipation and multiple mouth ulcers. Local examination revealeda reddish yellowish wound with swelling around the wound. Local tenderness was present. The black tip of the third toehadno sensation. (Fig 1& Fig. 2) The temperature of both lower limbs was less in comparison with upper limbs.Dorsalis pedis was felt on both sides.



Fig. 1

Fig.2

**Laboratory Findings**

His hemogram showed hemoglobin 10.9gm/dl and WBC was 12400/cumm. Urine examination showed epithelial cells and calcium oxalate crystals 15-20/hpf and 15-20/hpf respectively. Other investigations like LFT, KFT, HIV were non-significant



Doppler study of right lower limb showed significant occlusion of right mid and distal PTA (posterior tibial artery) with the reformation of distal PTA, dampening of flow at right distal PTA at the ankle.

**Treatment plan**

Treatment was decided on the basis of involvement of Kapha and Pittadoshaand rakta, mamsa&medadhatu(body tissues) and strotorodha(obstruction in macro and microchannel of blood)The treatment was given from 1/6/21 to 28/8/21. Oral medication was given to equilibratedosha and dhatu and topical treatment was given to improve local blood circulation, clean the wound, and heal the wound. (Table 1)

**Table 1: Duration and type of treatment given**

Sr.No	Date	Abhyantarchikitsa (oral medication)	Bahyachikitsa (external application)
1	1/6/21-15/6/21	Kaishorguggul 500mg twice a day after meal with water Mahamanjisthadikwath 20 ml twice a day after meal with water Gandhakrasayan 500 mg thrice a day after meal with water.	Dhavan (cleaning of a wound) with the decoction of Triphala once a day Snehanswedan (gentle massage and sudation) of the right lower limbwith dashmulataila once a day Dressing of wound by jatyaditaila and panchavalkal gel.once a day
2	16/6/21-31/7/21	Kaishorguggul 500mg twice a day after meal with water. Mahamanjisthadikwath 20 ml twice a day after meal with water. Gomutraarka 10 ml in half cup of water once a day in the morning. Yashadbhasma 250 mg twice a day with water Tab. Amalaki500mg twice a day.	Continued Dhavan, dressing and snehan-swedan as above And Jalaukavcharan(bloodletting through leech) on 16/6/21 and 22/6/21 Two sitting on an interval of seven days (Fig 3&4)

			 
3	1/8/21-28/8/21	Sukshmatriphalavati 500mg twice a day after meal with water. Tab Amalaki500 mg once a day in the morning	Local application of Panchavalkal gel once a day

### Observation and Result

Gradual improvement was observed in the swelling and discharge of the wound in the first 15 days. The shallowness of the wound was found indicating healing. (Fig. 5 to Fig. 8) The necrosed tip of the third toe was shed itself on the 30th day. The hemoglobin was increased to 11.8gm/dl. WBC count was reduced to 10500/cumm. The epithelial cells and calcium



Fig. 5



Fig. 8

oxalate crystals in urine were also decreased to 4-6/hpf and nil respectively. The wound was completely healed in 9 weeks of treatment. (Fig. 9 to fig.12)



Fig. 9

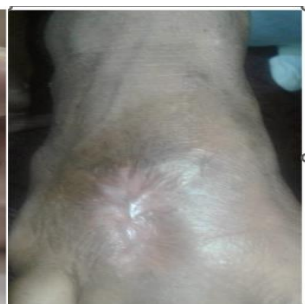


Fig. 12

With this, there was a significant improvement in appetite and mouth ulcers.

### DISCUSSION

Dushtavran is described in Ayurveda which clinical features are

similar to a non-healing wound. This patient was managed, keeping in mind the vitiation of kapha and pitta dosha, Rasa, rakta, mamsa&medadhatu, and strotorodh.

Kaishorguggul was given for 60 days. It contains guduchi(Tinisporacordifolia), triphala (fruits of Embelicoofficinalis, Terminaliachebula and Terminalia bellerica), trikatu (combination of black pepper, Ginger and long pepper, dantimula (roots of Baliospermum montanum), trivrutmula (roots of Operculinaturpethum), vidanga (Embeliaribes), guggul (commiphoramukul) and goghruta (cow ghee). It is specifically indicated in Vrana (all types of ulcers), Vatarakta (Gouty arthritis) and Kushtha (Dermatological disorders). It has antimicrobial, blood purifier, and anti-inflammatory properties. [8]

Gandhaka Rasayana is a Sulphur based preparation. It is considered as a Rasayana (rejuvenator) which promotes positive health and vigor, retards aging process and increases longevity in individuals by increasing immunity in the body, thus increasing resistance against the factors causing ailments. It is indicated in kuṣṭha (skin disorders). [9]

Mahamanjishthadiquathis used for 60 days because of its Raktashodhak (- remover of blood impurity), and viṣahara (detoxifier) properties.

Gomutraarka was given for its lekhanīya (scrapping) and strotoshodhak (cleaning of macro & microchannels) property. Patient had significant occlusion of right mid and distal PTA. It might help in removing the occlusion. Yashadbhasma contains zinc which has a role in wound healing. [10]

Amalaki is a rich source of vitamin C. It is helpful in wound healing by assisting the formation of collagen, the most important protein of connective tissue. [11] Sukshmatriphala was given because of its antimicrobial action. It was advised to prevent further infection.

Externally wound cleaning, dressing, snehan-svedan (gentle massage and sudation) of right lower limb and leech therapy was done for the following reasons

Wound and the necrosed area were cleaned with the decoction of Triphala to remove local debris. Triphala was selected for its Vranashodhak (wound cleaning) and Vranaropak (wound healing) properties. It is reported to be an effective antimicrobial activity. [12]

After cleaning the wound, the dressing was done with Panchavalkal gel and Jatyaditaila. Panchavalkal is the bark of

five plants i.e Vata (Ficus bengalensis), Udumbara (Ficus racemosa Linn.), Ashwatha (Ficus religiosa Linn.), Parish (Thespiapopulnea) and Plaksha (Ficus lacor). It has an action like vranaprakshalan (debris cleaning), vranaropan (wound healing) and shothahara (anti-inflammatory).<sup>[13]</sup>

Panchavalkala is a drug with Kashaya Rasa (astringent taste) and by the action of the Rasa; it helped in reducing the Srava (discharge)

The five drugs of Panchavalkala are found to have anti-inflammatory, analgesic, antimicrobial, and wound healing properties. The chemical constituents like Tannins and phytosterols promote the healing process by wound contraction with increased capillary formation. Tannins have been reported to possess ability to increase collagen content, which is one of the factors for the promotion of wound healing.<sup>[14]</sup>

Jatyadi Tailais used as Shothahara, Vedanasthapaka (analgesic) and Vrana Ropak property.<sup>[15]</sup> It contains Lodhra, Neem, Haridra, Daruharidra, and Abhaya which are having antimicrobial activity. The ingredients like Manjistha, Sariva, and Karanja are vranashodhaka (wound cleansing) properties.<sup>[16]</sup> Katuka improves re-epithelialization, neo-vascularization, and migration of endothelial cells, dermal fibroblasts into the wound bed.

The gentle massage and sudation of the right lower limb helped in enhancing blood circulation. Because poor blood circulation is one of the causes of non-healing wounds. Acharya Sushruta has advised snehan and Swedan in the management of Vrana (ulcer).<sup>[17]</sup> Raktamokshan (blood letting) was done with the help of Jalauka (leech). It is known to improve the microcirculation within the wound and surrounding tissue.<sup>[18]</sup>

While doing the treatment, we did not find any side effects from any medicine.

## CONCLUSION

As per the treatment guidelines of Dushtavran, this case was treated successfully. Internal medication along with the external application showed complete healing of a wound in a short duration. This case encourages the researcher to conduct further research on the non-healing wound.

## Ethical Approval

Not needed for the study

## Funding details

No funding body is associated with this study

## CONFLICTS OF INTEREST

No conflicts of interest between the authors

## Informed Consent

Written informed consent was obtained from the patient for publication and associated images.

## Authorship Contributions

All the authors contributed well for the conduction of this study.

## REFERENCES

- Greer, N., Foman, N., Dorrian, J. et al. (2012). Advanced wound care therapies for non-healing diabetic, venous, and arterial ulcers: A systematic review.
- Rayner, R., Carville, K., Keaton, J. et al. (2009). Leg ulcers: Atypical presentations and associated co-morbidities. *Wound Practice and Research*, 17(4), 168-185.
- Anderson, I. (2006). Aetiology, assessment and management of leg ulcers. *Wound Essent.*, 1, 20-36.
- Damir, A. (2011). Recent advances in management of chronic non-healing diabetic foot ulcers. *Journal of the Indian Medical Association*, 24(4), 219-223.
- Smith, T. (2015). *Gangrene management: Today and tomorrow*. Hayle medical. ISBN 978-1632412232
- Sushruta, S.S. (2008). *Sushrutavimarshini commentary*, edited Sharma, Anantaram, Chaukhambha Surabharati Publication, Varanasi, 1(5): 189, 191.
- Tripathi, B. (Ed.). (2015) (Chapter 12, verse 64&67. *Ashtang Hridayam, Sutrasthan*; doshabhedhiyaadhyaya, 180 p. 181. Chaukhambavidyabhavan.
- Sharangadhara, & Samhita, S. (1984). Shlok no. 70-81 (2nd ed). *Vatkalpana Chaukhamba Publications*.
- Laxmipathi Sashtri Rasayanadhikara. *Yogaratanakara*. (1983) (3rd ed) p. 501. Chaukhambha Sanskrit Sansthan Publication.
- Clayton, R. J. (1972). Double blind trial of oral zinc sulphate in patient with leg ulcer. *British Journal of Clinical Practice*, 26(8), 368-370.
- Ter Riet, G., Kessels, A. G., & Knipschild, P. G. (1995). Randomized clinical trial of ascorbic acid in the treatment of pressure ulcers. *Journal of Clinical Epidemiology*, 48(12), 1453-1460.
- Susruta, B. K. K. (1907). An English translation of the *Sushruta Samhita*, based on original Sanskrit Text. *Susruta*, 2, 344.
- Charaka Samhita, C., with Dipika, A. (2001). English commentary *Ram Karan Sharma, Vd. Bhagwan Das, Chaukhambha Sanskrit Series* (2nd ed). Varanasi, India.
- Kiran, K. Y., & Mir, K. A. (2011). Element content analysis of plants of genus *Ficus* using atomic absorption spectrometer. *African Journal of Pharmacy and Pharmacology*, 5, 317-321.
- Shastri, Ambikadutta, & Chikitsa Sthana, S. S. (2007); page no. 52. *Chaukhambha Sanskrit Sansthan Varanasi publication*, I.
- Samantaray, Sanghamitra, Bishwal, R., Singhai, & Swapnil. (2017). Clinical efficacy of Jatyadi taila in Parikartika (fissure-in-anowjpmr, 3(8), 250-254 16.
- Ambikadatt Shastri, S. S. -2, Varanasi Chaukhambha Sanskrit Sansthan, reprint 2005, sutrasthan.6/159.
- Asutkar Sheetal. Leech therapy: Coherent Review of History, Functional Components in Saliva and Therapeutic Application in Surgical Disease; *JAR*. 2019;9(4).