



TOPICAL AYURVEDA TREATMENT FOR KLEBSIELLA PNEUMONIAE INDUCED ULCER W.S.R.TO DUSHTA VRANA – A CASE STUDY

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ABSTRACT

The infected ulcer's healing depends on the complex interplay of many factors. Lower limb ulcers are always of great concern since *vedic* period. Present population is highly prone to non-healing ulcer due to trauma, varicose veins, haematological Disorders, life style changes, Diabetes, Adverse drug reactions, malignancy, surgical infections, burns, wound infections etc. Hence appropriate timely intervention and effective management of ulcer is necessary. In this case, A patient aged 60 years female presented with ulcer in medial aspect of right thigh region. The patient was treated in two phases. Initially *Panchavalkala Kashaya Parisheka* followed by dressing with *kshara taila* for 21 days. Following which the ulcer was then treated by *Panchavalkala Kashaya Parisheka* followed by dressing *Ropana Taila*. The treatment gave completely healed scar within 79 days and no recurrence in the 2 months of follow up. Local *Parisheka* by *Panchavalkala Kashaya* has showed antimicrobial effect which augmented the healing process, while *Kshara Taila* application enhanced tissue debridement and *Ropana taila* helped in formation of healthy granulation tissue. Internal *Ayurveda* medications like *Cap Grab*, *Cap Cruel Plus*, *Amrithadi guggulu* helped in rejuvenation and repair by their pharmacological properties.

KEYWORD: *Dushta Vrana*, *Infective Ulcer*, *Panchavalkala Kashaya*, *Kshara taila*, *Ropana taila*, Case Study, *Klebsiella pneumoniae*.

INTRODUCTION

Treating the ulcer and wound is a great challenge to medical profession ever since *vedic* era. *Dushta Vrana* is a commonly encountered problem faced in clinical practice even in present era. The destruction/ break/ discontinuity of body tissue/ part of body is called *vrana*. Detailed description about *vrana* is mentioned in *sushruta samhita*.^[1] *Vrana* is generally classified into two groups i.e. *Sharira* are due to vitiated *dosha* & *aagantuja/ sadhyo vrana* which caused due to trauma. The scar of the wound never completely fades away, even after healing and stays as long as the person is alive.^[2] Wound healing is a natural mechanism of the body to attempt to restore the integrity of the injured body part. This wound may get infected or not heal for a long time and turn into *Dushta Vrana* (non-healing ulcer). Presence of *Dushta Vrana* can damage the condition of the patient with different complication and may even turn fatal. Ulcer in the lower limb is quite common among middle aged population where symptoms include pain, oedema, oozing and bleeding. In

the course of lifetime, almost 10% of the population will develop a chronic wound with a wound related mortality rate of 2.5%. Chronic leg ulcers affect 0.6-3% of those aged over 60 years, increasing to over 5% of those aged over 80 years.^[3] Wound infection occurs when there is the presence of replicating microorganisms within a wound with a subsequent host response that eventually delays wound healing. The potential for wound infection depends on patient's condition such as state of hydration, nutrition and existing medical conditions as well as extrinsic factors.^[4] The signs and symptoms of local infection are redness (erythema), warmth, swelling, pain and loss of function. Eventually, the local bacteria burden will increase further and become systematically disseminated resulting in sepsis which if not actively treated could progress to septicaemia and multi organ failure.^[5] even after recent advancements in medical science, the management of infective ulcer is a challenge because of prolonged healing and recurrence. Non healing ulcers can take a heavy toll on patient's physical, mental health & social health. Our *Acharyas* knew about

the severity of this condition and also had a good knowledge about its treatment. *Acharya Sushruta* mentioned 60 *Upakramas* for the treatment of *Vrana*.^[6] Among these *Upakramas*, *Kashaya*, *kshara*, *Varti*, *Kalka*, *Sarpi*, *Taila*, *Rasakriya*, *Avachoorana* are used for *Vrana Shodana and Ropana*.^[7] he mentioned various formulations to treat various types of *dushta vrana*. One among them includes *Panchavalkala* of *Nyagrodhadhi Varga* which is mentioned in *Vrana Ropana kashaya*.^[8] *Kashaya* prepared with *Panchavalkala* drugs when used topically found to be effective in treating an infective ulcer located on the leg.^[9] To treat any case of *Vrana*, *Sthanika Shodhana* and *Ropana* plays a very important role. Hence present case study focuses on the local application of *Kshara taila* for *Shodhana & Ropana Taila* for *Ropana* of the *vrana*. Application of *Kshara* is clearly Indicated by *Acharya Sushruta* in *Dushta vrana*.^[10] *Ropana taila* also mentioned by *Acharya Sushruta* in *Vrana Chikitsa*.^[11]

CASE REPORT

A 60-year female patient came to SKAMC & H Shalya tantra OPD with complains of pain and foul-smelling discharge from an ulcer at the medial aspect of right thigh for the past 15 days. She gave a history of noticing a small boil at the same site around 30 days ago which was painful. She later complained of swelling with redness, burning and foul discharge. By the end of the week the small boil turned into huge ulcer. Day by day the ulcer increased in size with distal scaling of the skin. She expressed intense Pain, constant burning sensation at ulcer site and itching around the ulcer. She took treatment at the nearby clinic which was not effective and the ulcer spread. Her systemic examinations were not significant for any major systemic disease. She had no history of DM, HTN or Thyroid disorder.

Her vitals were stable with BP - 130/80mmhg, respiratory rate - 21/min, pulse rate - 80 bpm, temperature - 98.6°F.

Associated Complains

c/o Burning Micturition in the last 15 days

H/o Past Illness

N/H/O DM, HTN, Thyroid disorder.

Family History

Not significant to present condition

Personal History

- Appetite: Good
- Diet: Vegetarian
- Sleep: Disturbed,
- Bowel: Regular
- Micturition: burning micturition in the last 15 days
- Habits: Tea 3-4 times/day
- Exercise – nil, she had sedentary lifestyle.

General physical examination

- Built and nourishment: obese

- Pulse: 80b/ min,
- B. P: 130/80 mm of Hg
- Temperature: 98.6 °F
- Respiratory rate: 21/ min
- Height: 170 cm
- Weight: 84 kg
- Pallor: Absent
- Icterus: Absent
- Cyanosis: Absent
- Clubbing: Absent
- Edema: Absent
- Lymphadenopathy: Absent
- Gait: mild limping gait due to Ulcer.

Systemic examination

- **Central nervous system:** Higher mental functions, Sensory, Motor, reflexes and Coordination intact.
- **Cardiovascular system:** S1 S2 heard, no added sounds.
- **Respiratory system:** Normal vesicular breathing sound heard, no added sounds.
- **Per abdomen:** Soft, non- tender

Vrana pareeksha

- Vrana Varna - Peeta, Rakta
- Vrana Gandha – Amanojnagandha
- Vrana Vedana - Toda, Bheda, daha, kandu
- Vrana Akriti - Vikruta, ativivruta
- Vrana Srava - Picchilapuyasrava

Examination of ulcer

Inspection (Darshana - pareeksha)

- Shape: Irregular shape
- Number: one
- Position (Site): Medial aspect of right thigh
- Ulcer Size:
 - Length: 15 cm
 - Width: 12 cm
 - Depth 1.5 cm
- Discharge: Purulent
- Edge of the ulcer: Punched out edge with irregular border
- Floor: pale to yellow with slough and necrotic tissue
- Surrounding area of ulcer: edematous with pinkish discoloration
- Tenderness: Present
- Local Temperature: Raised
- Margin: ill-defined

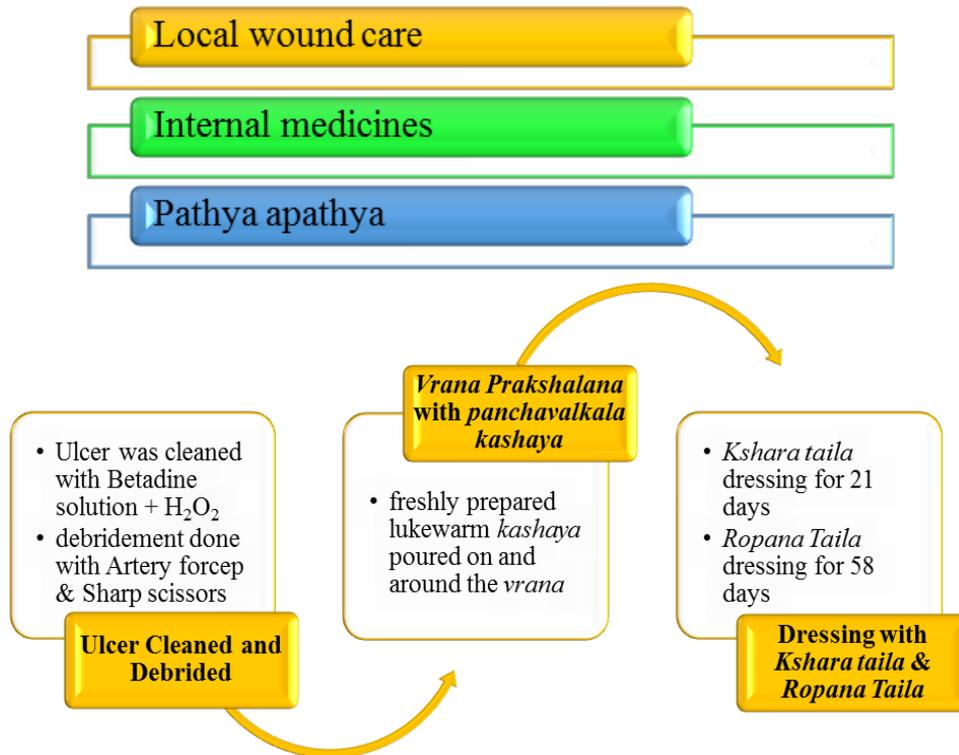
Examination of vascularity

- Inspection: Visible Color changes - Absent
- Palpation:
 - A. Dorsalis pedis pulse: Normal
 - B. Tibialis anterior Pulse: Normal
 - C. Tibialis posterior pulse: Normal
 - D. Popliteal Pulse: Normal
- Varicosity: Absent

Investigations

- Swab culture of Ulcer –Klebsiella pneumoniae growth in culture
- Haematology –
 - ESR – 97mm
 - Hb % - 11.7 gm %
 - Total count – 7900 cells/cumm
 - RBS – 123.0 mg/dl
 - B. Urea – 32.0
 - Sr. Cr – 1.1

- Urine Routine –
 - Colour – Pale yellow
 - Appearance – turbid
 - Reaction – 8.0
 - Protein – Present (+)
 - Epithelial Cells – 6-8 /h pf
 - Pus cells – 8-9/ hpf
 - Bacteria – Present
 - Other – Amorphous Deposit Present

Intervention

- On the first day, the ulcer was cleaned thoroughly with betadine solution + H₂O₂ solution. Under aseptic precaution Wound was debrided with the artery Forceps and Sharp Scissors.
- *Prakshalana* with lukewarm *Panchavalkala Kashaya* on and around the ulcer was done. Dressing was done with *Kshara taila* soaked sterile Gauze for the first 21 days until the slough, necrotic tissue, Purulent puss discharge was reduced.
- From 22nd day, after *Prakshalana*, dressing was carried out with *Ropana Taila* soaked sterile Gauze for about 58 days until a healthy scar tissue was formed.
- Suitable Antibiotics Sensitive to *Klebsiella pneumoniae* for 5 days.
- Cap Grab (2-0-2)
- Cap Cruel Plus (1-0-1)
- Tab Amrithadi Guggulu (2-0-2)
- Rest for few days
- Avoid contamination of dressing

- Pathya Ahara –Yava, Godhuma, Yusha, Karavellaka, Patola, ghrita, Dadima
- Apanya Ahara –Avoid Ruksha, amla, dadhi, vidhahi ahara

RESULTS

With the step wise management of this case, wound successfully healed completely within 79 days.

Wound healing progress: On first consultation the patient was having non healing Infective ulcer in the Medial Aspect of Right Thigh [Fig 1]. One the Same day the wound was Debrided with the help of Artery Forceps and Sharp Scissors [Fig 2-3] and with regular dressing with *Kshara Taila* after *Panchavalkala Prakshalana* there was Almost Complete Absence of exudates, Slough and Necrotic tissue [Fig 4] by day 21. Local symptoms like pain, itching, burning sensation, and swelling were significantly reduced. Later Dressing with *Ropana Taila* showed remarkable primary granulation by day 35 [Fig 5]. By the 48th day of regular treatment, she achieved the features of *Shuddha Vrana* (clean wounds) like

Jihvatalabh (red coloured wound floor due to healthy granulation), *Mridu* (soft) [Fig 6]. On day 68th the size was almost 1cm. [Fig 7] Complete wound healed by 79th day [Fig 8].

The Scar was healthy even on 2 months follow up without Any Recurrence or complications [Fig 9].

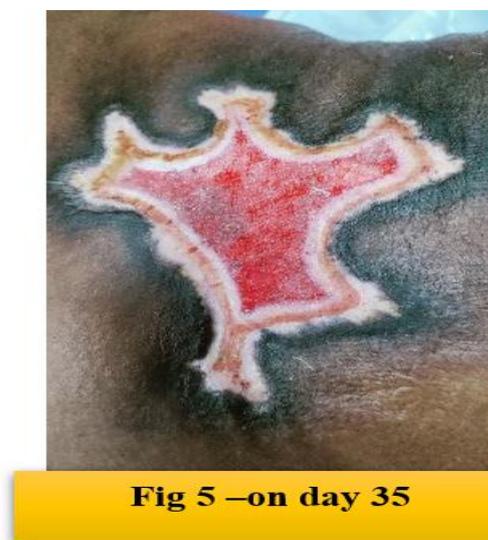
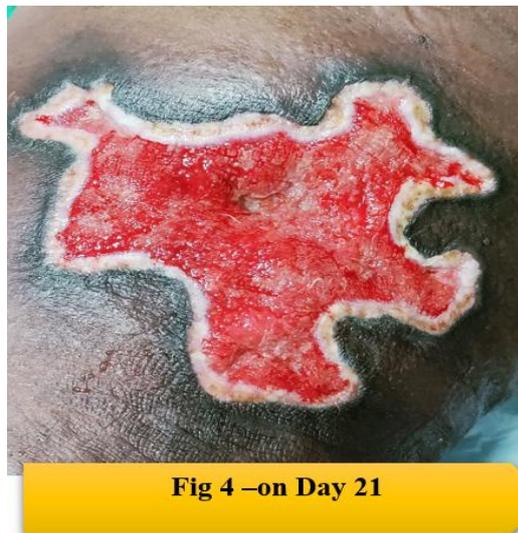




Fig 7 –on day 68



Fig 8 –on day 79

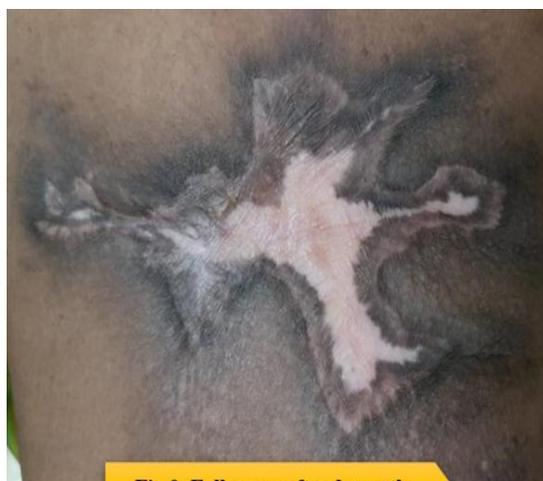


Fig 9–Follow up after 2 months

DISCUSSION

Acharya Susrutha dedicated a whole Chapter in *Chikitsa sthana* for Treatment of *Dushta Vrana*. He advocated *Shasti Upakrama*, among which appropriate treatment needs to be selected based on the condition of the *Vrana*. In this case, *Vrana Praksalana* with *Panchavalkala Kashaya* was carried out. This *prakshalana* helped in mechanical debridement as it washes away the exudates, slough and unhealthy tissue from the ulcer with least pain. It also helped in relieving pain and swelling. Its proven management which increases circulation and permeability by tactile stimulation and histamine release; resulting in absorption of drug and local nourishment of the affected part.^[12] this can also be compared to pulsed lavage of modern method. Pulsed lavage, a modern method is found to be quite efficient in removing bacteria in a wound.^[13] many Studies are done on efficacy of *Panchavalkala kashaya* and the Results revealed that *Panchavalkala* water extract showed great antibacterial activity on both gram - negative and gram-positive bacteria.^[14]

Sushruta indicated application of *Kshara* for wound debridement in the management of *Dushtavrana* (non healing ulcer).^[15] The *ushna guna* of *Kshara* helped in *Vedanasthapana* (Reduced pain) by pacifying the *vata*. The *chedya, bhedyo and lekhyo* properties of *kshara taila* helped in completely removing the slough and necrosed tissue. The *shodano* property of *kshara taila* helped transform the *dushta vrana* to *shudha vrana*. *Kshara* also possess properties like *krimighna, vishaghna, kushtaghna* which helped to remove infection and foul smell from the ulcer. Application of alkaline preparation like *Kshara Taila* has provided the autolytic debridement of wound. also, pus is an acidic compound. *Kshara Taila* neutralizes it and helps in tissue Debridement.^[16] *Ropana taila* which is mentioned by Acharya Sushruta is specifically indicated for *Ropana karma* (healing) has helped in speeding up the healthy granulation and forming a healthy Scar.

These careful interventions have not only controlled the spreading of ulcer but helped in complete healing. However, antibiotics were prescribed owing to the systemic manifestation of the infection like fever

associated with burning Micturition for a period of 5 days. Internal medications were prescribed considering the *Vyadhi*. Patient complied and followed all the interventions without any discontinuity and no adverse reactions were noted during the treatment.

CONCLUSION

The case study showed that even a highly infective ulcers can be best treated with holistic approach of *Ayurveda*. This single case study shows that phase wise treatment by local application of *Kshara Taila* and *Ropana Taila* have definite role in healing of Infective Ulcer. Further, it is need of the hour to treat more cases of Infective Ulcer adopting the similar treatment protocol for its scientific recognition.

A management of an infective ulcer with *Panchavalkala Kashaya Parisheka*, *Kshara Taila* & *Ropana Taila* as topical application with internal medications was found to be highly effective in controlling the inflammation and completely healing of the ulcer.

REFERENCE

1. Acharya Yadavji Trivikramji. Sushruta Sahmita of Sushruta with Nibandhasangraha commentary of Dalhanacharya and Nyayachandrika Panjika of Gayadasacharya on Nidana Sthana. Sutrasthana Vranaasravavijnanyaniyam verse. Varanasi: Choukambha Orientalia, 2019; 7.
2. Acharya Yadavji Trivikramji. Sushruta Sahmita of Sushruta with Nibandhasangraha commentary of Dalhanacharya and Nyayachandrika Panjika of Gayadasacharya on Sutra Sthana. Varanasi: Choukambha Orientalia, 2019; 40: 21.
3. Shubhangi Vinayak Agale, "Chronic Leg Ulcers: Epidemiology, Aetiopathogenesis, and Management", *Ulcers*, 2013; 9. Article ID 413604. <https://doi.org/10.1155/2013/413604>.
4. Vijayakumar, A comparative study of Kasesadi Avachurnana and Jatyadi Ghrita application in the management of Dushta Vrana, Ph.D thesis, Bengaluru: Rajiv Gandhi University of Health Sciences, 2015.
5. Bhat KS, Vishwesh BN, Sahu M, Shukla VK. A clinical study on the efficacy of Panchavalkala cream in Vrana Shodhana w.s.r to its action on microbial load and wound infection. *Ayu*, 2014; 35(2): 135-40. doi:10.4103/0974-8520.146216. PMID: 25558157; PMCID: PMC4279318
6. Acharya Yadavji Trivikramji. Sushruta Sahmita of Sushruta with Nibandhasangraha commentary of Dalhanacharya and Nyayachandrika Panjika of Gayadasacharya on Chikitsa Sthana. Chapter 1. Varanasi: Choukambha Orientalia; Reprint, 2019.
7. Acharya Sushruta, Sushruta Samhitha, Dalhana, Nibandhasangraha Commentary, Edited by Jadavji Trikamji Acharya and Naarayana Ram Acharya; Varanasi: Chaukhambha Sanskrit Sansthan, Chikitsa Sthana, 2012; 820, 397: 1 – 7.
8. Acharya Sushruta, Sushruta Samhita, Dalhana, Nibandhasangraha Commentary, Edited by Jadavji Trikamji Acharya and Narayana Ram Acharya; Varanasi: Chaukhambha Sanskrit Sansthan, 2012; 820, 162: 37 – 22.
9. Prashanth K, Annet Thomas. Management of an Infective Ulcer : A Case Study. *J Ayurveda Integr Med Sci*, 2022; 7: 155-158.
10. Acharya Sushruta, Sushruta Samhita, Dalhana, Nibandhasangraha Commentary, Edited by Jadavji Trikamji Acharya and Narayana Ram Acharya; Varanasi: Chaukhambha Sanskrit Sansthan; Sutrasthana, 2012; 11 – 7.
11. Acharya Sushruta, Sushruta Samhita, Dalhana, Nibandhasangraha Commentary, Edited by Jadavji Trikamji Acharya and Narayana Ram Acharya; Varanasi: Chaukhambha Sanskrit Sansthan, Sutrasthana, 2012; 37 – 26.
12. Tripathy, Otta SP, Siddram. *Indian Journal of Traditional Knowledge*, 2011; 10 (4): 643-650.
13. Svoboda SJ, Bice TG, Gooden HA, Brooks DE, Thomas DB, and Wenke JC: Comparison of bulb syringe and pulsed lavage irrigation with use of a bioluminescent musculoskeletal wound model. *J Bone Joint*, 2006; 88: 2167.
14. Ashish Pareek. A Study of Anti Microbial Activity of Panchvalkal Kwath. *International Journal of Ayurveda and Pharma Research*, 2022; 10(5): 55-57. <https://doi.org/10.47070/ijapr.v10i5.2380>
15. Acharya Sushruta, Sushruta Samhita, Dalhana, Nibandhasangraha Commentary, Edited by Jadavji Trikamji Acharya and Narayana Ram Acharya; Varanasi: Chaukhambha Sanskrit Sansthan, Sutrasthana, 2012; 11 – 7.
16. (Joshi, Foram, and T. S. Dudhamal. "Wound healing effect of Apamarga Kshara Taila and adjuvant drugs in the management of Diabetic Foot Ulcer-A Case Report." *Annals of Ayurvedic Medicine*, 2021; 9.4: 320-320.