Management of *Dushtavrana* (Non-Healing Ulcer) through Ayurveda - A Case Report

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**ABSTRACT**

*Shalyatantra* is one among the *Astang Ayurveda*, the branch of *Shalyatantra* refers to surgical and parasurgical procedures in *Ayurveda*. *Dushtavrana* (non healing ulcer) are a frequently encountered problem in present era produced commonly as a complication of trauma or pathologic insult and it causes long term agony to the patient. The issue of non-healing ulcers management with *Ayurvedic* remedy is one of the major areas of the research and has come under increased study. This is a case report of 40-year-old female, who had an episode of *Dushtavrana* (non healing ulcer) and presented to the outpatient department with complaints of severe pain, itching and ulcer over right ankle region. The first line of management for *Dushtavrana* is *Shodhana*. *Kalka* is the specific treatment for *Dushtavrana* which is mentioned under *Shodhana* and *Ropana Kriya* of *Saptopakrama*. *Yavadi Kalka* is one of the formulations mentioned in *Dwivraniya Chikitsa Adhyaya*. *Yavadi Kalka* is simple, very cost-effective procedure. In the present case, *Yavadi Kalka* after *Jaloukavacharana* has shown assuring results in the management of *Dushtavrana*.

**Key words:** Yavadi Kalka, Jaloukavacharana, Dushtavrana, Non healing ulcer

**INTRODUCTION**

The break/loss/rupture of continuity of body tissue or part of body is called *Vrana* (Wound). The scar of the wound never disappears even after healing and remains till the body survives is called *Vrana*. Normally wounds are healed by it if kept clean. So *Vrana* (wound) and its *Shodhana* (cleaning) are the two sides of surgical coin on which an expert surgeon has to play his role sincerely. Contamination of wound by bacteria, insufficient blood supply, tissue tension and radiation are the local factors for delay in wound healing. Whereas general factors include malnutrition, malignant disease, diabetes and long-term consumption of steroids and cytotoxic drugs.[¹]

*Acharya* Sushruta given detailed description about *Vrana*. Generally, *Vrana* classified into two types i.e., *Sharira* are due to vitiated *Dosha* and *Agantuja* i.e., *Sadhyovrana* (wound) which is caused by trauma. If the *Vrana* (wound) gets infected and take long time to heal then it is called *Dusthavrana* (Infected wound or non-healing ulcer).[²]

Surgeons deal with Non healing ulcer with debridement and use Betadine, silver nitrate, H₂O₂, Eusol to cleansing purpose and internally antibiotics, and at last lifesaving procedure like amputation these have their own limitations.[³] *Acharya* Sushruta...
elaboratively mentioned Shasti Upakrama to treat all kinds of Vrana. The principal of management runs through- Vedana Shamaka, Shothahara, Rakta Stambhak, Aushadi Prayoga, Shodhana and Ropana Karma with Pathy Apathya Prayoga. So to prove these treatment modalities as evidence-based medicine, we adopted Kalka application in the management of Dushtavrana (Non healing ulcer) healing delayed with anemia-A case report on basis of OPD level.

**Patient Information**

A 40-years-old female patient came to outpatient department No.31298 of BLDEA’s AVS Ayurveda Mahavidyalaya Hospital and Research Centre, with the complaints of Painful wound at lateral malleolus of right leg since 1year [Figure 1]. An interrogation with the patient revealed the history of trauma and repeated ulcer since 2-3years. The history of sickle cell anemia was revealed 4yrs back when she had ulcer over the same site and she took treatment for the same in Sri Sri Ayurvedic medical college and hospital Bangalore in the year of 2019.

**Clinical findings**

On examination the wound was 2x1x1 cm (Length x Width x Depth) situated on lateral malleolus of right leg involving skin and muscle with everted, inflamed edges, purulent discharge, floor was covered with slough, tenderness, itching, burning sensation were present, which is oval shape, pale margin with mild foul smell. Patient was k/c/o sickle cell anemia.

**Investigations**

WBC count - 25700/L, RBC count - 2.75 million/c.mm, HB - 7.9 gm/dl, PCV - 22.4%, MCV - 81.5 fl, MCH - 28.7pg, MCHC - 35.3 g/dL, Platelet count - 42,10,000/c.mm, RDW - 20.2, Random blood sugar - 87.8 mg/dl, Serum creatinine - 0.86 mg/dl. CT - 3min 40sec, BT - 1min 33sec. Patient was non diabetic, non hypertensive, no vascular changes on Doppler study. USG findings - No appearance of spleen (Auto spleenectomy).

**Diagnostic assessment**

The diagnosis was made on the basis of clinical features like Atee Samvrutta, Atee Vedana, Atee Ushna, Utsadana, Deergha Kaleen, Dushtarakta Srava, Raga, Paaka, Vividha Varna and Vividha Srava.

**Therapeutic intervention**

The patient was treated with Kalka application externally and internally with medications.

**Table 1: Timeline**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>28/12/2022 (1st day)</td>
<td>The symptoms like pain, itching, burning sensation, foul smell, discharge, tenderness, size and floor of the ulcer all are present.</td>
<td>Raktamokshana by Jalouka over ulcer for 45mins, Haridra and Yashtimadhu churna sprinkled over site of leech bite, pressure bandage applied for 24hrs to avoid further bleeding from the bite site.</td>
</tr>
<tr>
<td>30/12/2022 (3rd day)</td>
<td>Pain bit reduced &amp; itching, moderate in discharge, foul smell, size and floor of ulcer, mild in itching and tenderness around ulcer.</td>
<td>On 3rd day Bandage removed, wound washed with normal saline, Yavadi Kalka application, with a thickness of approx. 0.5 cm started daily once along with internal medications.</td>
</tr>
<tr>
<td>06/01/2023 (10th day)</td>
<td>Pain, burning sensation, discharge, foul smell, size of ulcer are remained same, reduction in severity of itching, tenderness and floor of ulcer.</td>
<td>Yavadi Kalka application continued with internal medications.</td>
</tr>
<tr>
<td>13/01/2023 (17th day)</td>
<td>Reduction in severity of pain, size and discharge, foul smell became absent, itching, burning sensation and floor of the ulcer remain as on 10th day.</td>
<td>Yavadi Kalka application continued with internal medications.</td>
</tr>
</tbody>
</table>
Follow-up and outcome

After 1 month [Fig. 8] the patient had a noticeable improvement in the symptoms such as size and floor of the ulcer. She was advised to continue with the Dhatri Loha for anemia other all medicines were stopped. The last visit of patient was on Jan 28, 2023 and her wound was completely healed with less scar mark and no any recurrence. After 6 months also there was no recurrence of wound and scar mark was reduced [Fig. 9].

Method of preparation: Nimba Patras pounded in Khalva Yantra along with Madhu and Ghrita after Kalka formed Yava powder mixed in Kalka.[5]

Table 2: Showing the internal medicines

<table>
<thead>
<tr>
<th>SN</th>
<th>Medicines</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dhatri Loha</td>
<td>1-0-1 x 2 months</td>
</tr>
<tr>
<td>2</td>
<td>Manjistadi Kashaya</td>
<td>10ml-0-10ml x 1 month</td>
</tr>
<tr>
<td>3</td>
<td>Arogyavardhini Vati</td>
<td>1-0-1 x 1 month</td>
</tr>
<tr>
<td>4</td>
<td>Triphala Guggulu</td>
<td>1-0-1 x 1 month</td>
</tr>
</tbody>
</table>

Table 3: Showing ingredients of Yavadi Kalka

<table>
<thead>
<tr>
<th>Drug</th>
<th>Botanical name</th>
<th>Part used</th>
<th>Quantity in parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yava</td>
<td>Hordeum vulgare Linn</td>
<td>Fruit</td>
<td>1</td>
</tr>
<tr>
<td>Nimba</td>
<td>Azadirachta indica</td>
<td>Leave</td>
<td>1</td>
</tr>
<tr>
<td>Ghrita</td>
<td>Ghrita</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Madhu</td>
<td>Madhu</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
DISCUSSION

The one-year-old Dushtavrana which was reluctant to heal even after proper management of anemia and the wound by contemporary science, shown encouraging result by the Ayurvedic medicines within 28days. Sickle cell anemia is hereditary haemolytic anemia seen commonly in blacks where in HbA is replaced by HbS leading to formation of crescent shaped red cells which is deformed and more prone for trapping in spleen and destruction. HbS undergoes crystallization causing elongated and deformed red cells. It increases the blood viscosity and causes stasis in circulation. It causes anemia, pain in abdomen, leg ulcers are usual features. The probable mode of action the internal medication as well as external application can be drawn as below. 1st day Jaloukavcharana was done as Sthanika shodana. Leech saliva contains Hirudin, Fibrin, Hirustatin, Bdellins, Hyaluronidase, Tryptase inhibitor, Eglins, Factor- X a inhibitor, Carboxypeptidase A-inhibitor, Histamine and Acetylcholine. Bdellin B-3 is found to have anti-inflammatory action at the wound site. Hyaluronidase is found to have antimicrobial
property over the tissues. Carboxy peptidase A-inhibitors increase the blood flow at the wound site. Histamin and Acetylcholine like substances present in saliva of Jalouka are found to act as Vasodilatation on the smaller vessels over the site of application. All the properties like anti-inflammatory, antimicrobial, vasodilatation increase blood flow and are very much helpful to heal a wound. All these properties are present in the saliva of leech which helps in proper nourishment, oxygen supply and removing the toxic substances from the site of wound. Neem leaves (Azadirachta indica) have active ingredients such as nimbicin and sodium nimbinate which processes anti-inflammatory, antibacterial, antifungal and antiviral properties that help in healing process and also contain an excellent nutrition which plays vital role in formation of collagen and new capillaries. So, it is clear that it might be helpful in the phases of wound healing process.[7] Yava powder (Hordeum vulgare) is rich fibres and vitamins. Hence it acts as a natural antioxidant. It also contains carbohydrates, proteins, calories, Niacin, Vit B6, Thiamine riboflavin, flavanoids, manganese, phosphorous, polyphenols, caffeic acid, ferculic acid etc. these all vitamins are highly helpful in wound healing by giving the vitamins at the phases of wound. Yava has Kapha Pitta Hara properties and acts as Lekhana Karma. Barley contains component called beta glucan that helps in increase cell migration and promotes wound closer. It also has anti-inflammatory, antibacterial, anti-hypertensive, anti-diabetic, lowering cholesterol level and reduces blood sugar also.[8] Ghrita forms a thin film over them and that allows early epithelization of wound. It also protects wound from invasion of any microbe. Good emulsifier effect of ghee which facilitate penetration of drug into tissue. It acts as anti-oxidant, anti-infective, anti-inflammatory, blood purifier these all helps in reduction of wound size and scar mark. Madhu is Vrana Shodhaka, does dislouging of the wound by Lekhana property. It has antibacterial effect, anti-oxidant, promotes healing by promoting epithelization, reducing inflammation by eliminating Tikshna Guna of Pitta and relieving pain, reducing wound contracture, by keeping the edges soft by reducing Rukshata of Vayu, it reduces the risk of secondary infection and Kapha is counteracted by Madhu.

Internally

Arogyavardhini Vati 1BD for 2months given as it does Yakritpleeha Vikara, Tridoshahara properties, Shothahara, Rakashodhaka, reduces body weight by reducing Ama due to its Deepana and Pachana effect, improves Agni, pacifies Pitta and Kapha and also helps to manage anemia due to its balancing properties.[9] along that Mahamanjistadi Kashaya 10ml BD as it has Vata Kapha Shamaka properties, does the Rakta Shodana, anti-inflammatory, obesity, hypercholesterolemia[10] and also given Dhatri Loha does Pandughna, Prerana, Raktraprasadana properties as patient had sickle cell anemia since so many years. Dhatri Loha having Tridoshahara, Rasayana and Rasa Poshaka properties may considered as best to maintain the aggreivated Pitta.[11] Triphala Guggulu helps in wound healing and also reduces Paaka, Kleda, Shotha along with remarkable reduction of pain in the wound. It acts as anti-inflammatory, anti-oxidant and immunomodulatory activity which aids in the healing and pain reduction. Hypolipidemic activity of Guggulu makes it useful in the treatment of obesity.[12] All medicines were given with warm water. On 7th day (from the day of application of Kalka Vrana was changed into Ruhiyamanavrana (healing wound), which has the colour of pigeon inside, with moderate discharge has minimally covered with slough was to be considered Shuddha Vrana. So, within this less time above mentioned drugs showed progressive results in wound cleaning. On 17th day edges of Vrana were in blue color, which has developed eruptions having mild pain and exudation said to be wound was being in Shuddha Vrana which means healthy wound. On 24th day & 31st day Vrana Lakshanas were almost subsided, which has no eruptions, swelling or pain, itching, discharge, burning sensation, floor was filled with sloping edge, almost reduction in size of ulcer considered as healing wound. On follow up there were no any symptoms, the wound was completely healed, has the same color as of the skin and which is even of one level considered it as healed wound.
CONCLUSION

Even though there is explanation in relation to Dushtavrana in the classics, the cause does not directly attribute to the anemia, it is one of the factors for delay in wound healing. The sequel of Dushtavrana is similar to Non healing ulcer. Most of the Dushtavrana are the result of vitiation of all the 3 Doshas with one of the dosha dominance. The indication of Jalouka is also there in Shashti Upakramas as Raktamokshana. It does the Sthanik Shodhana and improves the blood circulation which helps to heal the wound earlier. The Kalka of Yava, Nimba Patra Kalka with Madhu and Ghrita mentioned for Shodhana and Ropana whereas this Yavadi Kalka mentioned in Vrana Chikitsa both by Acharya Sушruta and Charak. The internal medications with Arogavardhini Vati, Maha Manjistadi Kashaya, Dhatri Loha helped for the wound healing by systemic control of the vitiated Doshas and anemia. Jatyadi Taila helped in closure of wound as Ropana. The Tridoshashamaka effect of this Kalka can be used in all types of Dushtavrana even secondary to any systemic disorders also. So, this was the case of Non healing ulcer with underlined disease sickle cell anemia caused by the trauma. Here Yavadi Kalka has shown very good Vrana Shodhana effect.

Declaration of patient consent

Authors certify that they have obtained patient consent form, where the patient has given her consent for reporting the case along with the images and other clinical information in the journal. The patient has understood that her name and initials will not publish and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

REFERENCES


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