



# A STORY OF A NON-HEALING BURN WOUND TREATED WITH AYURVEDA – CASE REPORT

\*Dr. Ajith Kumar \*\*Dr. P.G. Jadar M.D. Ph.D(Ayu). \*\*\*Dr. G Pratyusha\*\*\*\*Dr. Ranjith kumar

\*Final year PG Scholar, Department of Rasashastra & Bhaishajya Kalpana, KLE Shri B. M. K Ayurveda Mahavidyalaya, Belagavi, Karnataka.

\*Professor, Department of Rasashastra & Bhaishajya Kalpana, KLE Shri B. M. K Ayurveda Mahavidyalaya, Belagavi, Karnataka.

\*Second year PG Scholar, Department of Rasashastra & Bhaishajya Kalpana, KLE Shri B. M. K Ayurveda Mahavidyalaya, Belagavi, Karnataka.

\* Final Year Pg Scholar Department of Orthopaedics, Sawai Mansingh Medical college and Hospital Jaipur Rajasthan.

## CORRESPONDING AUTHOR:

**Dr. AJITH KUMAR**

FINAL YEAR PG SCHOLAR, DEPT OF RASASHASTRA AND BHAISHAJYA KALPANA

KLE SHRI BMK AYURVEDA MAHAVIDYALAYA, SHAHPUR, BELAGAVI - 590003

## **ABSTRACT:**

Burn wound management and burn scar prevention was already told in ancient ayurveda local and systemic medication for burn wound are most effective. Normal re-epithelialization of the partial-thickness burn doesn't take longer than two to three weeks. If not, the problem can be that the wounds have become worsened over the course of time. A 28-year-old male patient presented to my emergency department with a history of a non-healing burn wound caused by hot oil, which was followed by significant pain, burning sensation, itching, and discharge. On local examination we have noticed an unhealed wound in the left leg above and below the ankle joint. Before visiting my OPD the patient had twice completed Antibiotics and analgesics course but no lasting recovery was achieved even after 15 days of conventional drugs. The patient's caretaker brought him to my outpatient department in the hopes that he would receive further treatment. Significant wound healing was accomplished in a time frame of 20 days while the patient was being treated with both internal and external medications. This case study provides an illustration of the advantages of Ayurvedic treatment for persistent wounds when conventional treatments are ineffective or unavailable.

**KEY WORDS:** Burn wound, Dushta vrana, Rasapushpa ointment, Panchavalkala Kashaya

## INTRODUCTION

A burn is an injury to the skin or other organic tissue that is primarily brought on by heat, radiation, electricity, radioactivity, friction, or contact with chemicals.<sup>1</sup> The number of burn cases in India is estimated to be between 6-7 million annually. The high frequency is ascribed to the population's lack of safety awareness, poverty, and illiteracy.<sup>2</sup> The post-healing nature of burn wounds makes them one of the most concerning wounds. Burn injuries are the most common and serious wounds in terms of their recovery. Long-term exposure to hot temperatures during burn injury causes tissue damage through thermal denaturation of proteins and degradation of plasma membrane integrity. These lesions result in cell death and a number of molecular structural changes that emit toxic compounds in addition to antigens and immunomodulatory substances.<sup>3</sup> Following the initial tissue damage, an inflammatory reaction occurs with a significant local inflow of inflammatory cells that produce a variety of chemicals that regulate the activity of immunocompetent cells. Localised oedema, altered perfusion, and a systemic inflammatory response are symptoms of these cells' activity.<sup>4</sup> The management of burn wounds has been the subject of extensive research and continues to remain so. The goal of these studies is to reduce healing time and produce better post-healing scars, or better cosmetic effects.<sup>5</sup> Acharyas described burn injuries under the heading of dagdha vrana in ayurveda. The terms Plushta (first-degree burn), Durdagdha (second-degree partial thickness burn), Samyakdagdha (second-degree full thickness burns), and Atidagdha (third-degree burn, involving muscle and joints) are all closely related to the degree of burn in modern science.<sup>6</sup> Fluid resuscitation, airway preservation, analgesics, broad-spectrum antibiotics, nutritional support, escharotomy, fasciotomy, skin grafting, and tetanus prophylaxis are all recommended standard protocol for treating burns.<sup>7</sup> The core concept of burn wound care is topical applications like silver sulfadiazine, silver nitrate gel/solution, and fusidic acid. Scarring and contractures are late challenges, while dermatitis, renal failure, wound infection, and pneumonia are early complications.<sup>8</sup> The late adverse effects of burns persist even after treating the early issues with the best emergency treatment. The most severe conditions of treating a burn treatment are septicaemia and acute respiratory distress syndrome.<sup>9</sup> Whereas in ayurveda, shasti upakrama has been mentioned for treatment of dagdha vrana. Important procedures mentioned as part of local wound care includes dressing the burn wound with medicated ghee preparations, bandaging it with *Tinospora cordifolia* leaves, and wound fumigation with drugs.<sup>10</sup> For the treatment of various burn wound symptoms, oral medications such as triphala guggulu, punernava mandoor, punernavadi kashaya, etc. also been advised. Here, we present a case of accidental burn that was successfully treated using an integrated approach that included both Ayurvedic and Modern medical treatment principles.

## PATIENT INFORMATION

A 28-year-old male patient presented to my emergency department with a history of a non-healing burn wound caused by hot oil, which was followed by significant pain, burning sensation, itching, and discharge in the left leg above and below the ankle joint. A treating physician informed the patient that the wound was infected and instructed him to take antibiotics and analgesics in addition to standard topical treatment, but no lasting recovery

was achieved even after 15 days of conventional drugs. The patient did not receive adequate alleviation after that he came to my OPD. The patient has Pitta vata prakriti, Madhyama bala (moderate physical endurance), and Satva (moderate psychological strength). On March 14, 2023, at his residence, the patient was burned across his left leg and foot with boiling oil. The patient received emergency care at a village hospital until April 30, 2023. The patient improved significantly, but some of the wound became infected and refused to heal despite all conventional treatment. On April 1, 2023, the patient came to my OPD and started taking prescribed Ayurvedic medicines in the expectation of recovery. There was no major prior history of diabetes mellitus, varicosity, or any other condition.

## CLINICAL FINDINGS

Local examination indicated an open unhealed wound over the left leg's foot (about 14 cm × 7 cm × 2 cm burn wound of second degree), discharge, slough, and brownish discoloration of the skin. There was soreness associated with an increase in local temperature. The afflicted limb showed no signs of varicosity.

## THERAPEUTIC INTERVENTIONS

Internal and topical interventions were prescribed after obtaining written consent from the patient. The patient was instructed to take adequate care and to prevent contact with water and further harm to the affected spot.

**Table 1: Internal and external Ayurvedic formulations prescribed**

Duration	Medicine
April 1 <sup>st</sup> 2023	<ul style="list-style-type: none"> <li>• Khadirarishta 15ml with 100ml of warm water twice a day after food.</li> <li>• Ushirasava 15ml with 1 glass of warm water twice a day</li> <li>• Kaishora guggulu 2 bd after food</li> <li>• Panchavalka Kashaya prakshalana daily 2 times (500 ml of water + 10 gm coarse Kwatha powder is to be boiled and reduced to 1/4<sup>th</sup>).</li> <li>• Rasapushpa ointment for local application</li> </ul>
April 15 <sup>th</sup> 2023	<ul style="list-style-type: none"> <li>• Only Rasapushpa ointment was continued as Local application.</li> </ul>

## FOLLOW-UP AND OUTCOME

On the first day, the patient reported severe pain, and after 15 days of management, pain was completely reduced and no required analgesics. The other complaints were reduced from severe to no symptoms as I mentioned in Table 2. Marked improvement in healing of the wound was noticed after administration of Ayurvedic formulations [Figures 1-4]. The wound was completely healed in 20 days of treatment, and there were no associated complaints. There was normal pigmentation appreciated over the healed skin afterward.

**Table 2: Effect of interventions on presenting symptoms**

FEATURES ASSESSED	BEFORE TREATMENT	DURING TREATMENT			AFTER TREATMENT 20 <sup>TH</sup> DAY
		0 <sup>th</sup> Day	10 <sup>th</sup> Day	15 <sup>th</sup> Day	
<b>Daha</b>	++++++	++++++	++++	+	-
<b>Raga</b>	+++++	+++++	+++	-	-
<b>Kandu</b>	++	++	+	-	-
<b>Shoola</b>	+++++	+++++	++	-	-
<b>Srava</b>	+++	+++	++	-	-



**Figure 1:**  
Unhealed burn wound (Day 0)



**Figure 2:**  
Wound in reparative phase (Day 8)



**Figure 3:**  
Re-epithelization of wound (Day 15)



**Figure 4:**  
Complete wound healing (Day 20)

## DISCUSSION

Management of burn injuries is challenging since the victims experience severe pain and impairment. These wounds need to be well cared for because they are more prone to infection. The production of toxic metabolites that cause localised oedema and a systemic inflammatory response is due to prolonged heat/temperature exposure, which damages tissue and denatures the proteins. The characteristics of burns and their resulting effects have been in-depth discussed in classical literature. When blisters form and are accompanied by intense agony, burning, redness, inflammation, and pain that takes a very long time to subside, this is referred to as Durdagdha (blister formation.)<sup>11</sup> According to Acharya Sushruta, if proper care or treatment is not provided, Vrana (a wound) would

become vitiated. This in turn causes the Doshas to become more vitiated and is referred to as Dushta Vrana (an infected wound). Dushta Vrana is characterised by pus, a deep base, an unsightly appearance, an offensive odour, intense pain, redness, swelling, and the discharge of tainted blood.<sup>12</sup> The primary concern in managing burn injuries is late complications, such as scarring, pigmentation, contractures, and keloid formation, therefore how burns are managed at each stage of healing will determine how well they recover in the end.<sup>9</sup> In this present case, the internal medications given were intended to improve the vitiated doshas, primarily Pitta and Rakta which will further help in the rapid healing of wound. Khadirarishta is an ayurvedic formula made up of 18 ingredients, including Khadira, Devdaru, Bakuchi, Daruharidra, Haritaki, Bibhitaka, Amalaki, Dhataki, Kankola, Nagakeshar, Jatiphala, Lavanga, Ela, Tvak & Twakpatra, Pippali, sharkara, and jala. It's anti-inflammatory and antibacterial properties are already well-established.<sup>13</sup> Due to its Prabhav (extraordinary activity), it balances the Kapha and Pitta doshas and is beneficial for skin-related conditions such as allergies, itching, rashes, acne, atopic dermatitis, psoriasis, and urticaria etc.<sup>14</sup> Ushirasava is a combination of 27 contents specially known for its raktapitta shamak property and sheeta veerya nature which helps in pacifying the burning sensations in the body. It also acts as diuretic, cooling, tranquilizer and blood purifier.<sup>15</sup> Kaishora guggulu, a combination of 9 ingredient by balancing Pitta and Kapha, Kaishora Guggulu produces a Samsodhana (detoxifying) and Rasayana (rejuvenation) combination that principally aims to eliminate deeply ingrained Pitta from the tissues and regulate vitiated blood.<sup>16</sup> Guggulu gum contains a substance that is active and has been shown to have high antibacterial action against Gram-positive bacteria and moderate activity against Gram-negative bacteria. This substance is 5 (1-methyl, 1-aminoethyl)-5-methyl-2-octanone.<sup>17</sup> Panchavalkala Kashaya is utilised in the management of wound wash and possesses both Shodhana and Ropana properties.<sup>18,19</sup> It accelerates wound recovery. It consists of 5 drugs in the form of Kashaya used as a prakshalana for wounds. In terms of assessment metrics such wound contraction rate, epithelialization time, wound infection, wound closure day, and histo-pathological alteration, it has shown a considerable improvement.<sup>20</sup> Classical literature provides a clear explanation of Rasapushpa's topical applicability in the form of Rasapushpa malahara.<sup>21</sup> Rasapushpa (Calomel-Mercurous chloride  $Hg_2Cl_2$ ) is one of the Kantastha bahirdhuma kupipakwa preparations that serves as a pittahara, mutrala, vranadosha hrit, virechaka, krimihara, and bhootha vishapaha.<sup>22</sup> Significant wound healing was achieved by implementing the internal and external Ayurvedic treatments. No negative effects were observed both during and after the management period. After the initial follow-up, no conventional medications were required. Only Rasapushpa ointment was continued. Slow healing, infection, discomfort, and hypertrophic scarring in burn wounds continue to be difficult to treat.<sup>23</sup> Depending on how they manifest, ayurvedic therapy may be the cornerstone for treating burn wounds while examining all these issues. To demonstrate that additional well-designed research is required to improve the existing treatment paradigms and eventually improve the result for burn wounds using ayurveda.

## CONCLUSION

This case study supports the effectiveness of Ayurvedic treatments for persistent, infected burn wounds that fail to heal, and they are both safe and practicable. It implies that during the anticipated period of wound healing, Ayurveda can be used to treat the infected lesion along with this we must know how to handle the patient during this whole process of management. We have advised all pathyapathyas to the patient as well as given moral support which is very much important in the field of ayurveda before treating any type of skin condition.

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