

Ayurvedic Management of Accidental Burn Injury A Case Study

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Abstract—Burn injuries are common, distressing, and potentially life-threatening conditions that pose significant challenges in management due to complications such as delayed wound healing, infection, scarring, keloid formation, and contractures. Ayurveda describes detailed principles and treatment modalities for the management of burn wounds (Dagdha Vrana), including internal medications, topical herbal formulations, medicated oils, and specialized bandaging techniques.

This paper presents a case of accidental burn injury (pramada Dagdha) involving 2% total body surface area (TBSA) with second-degree (deep partial-thickness) burn. The patient presented with pain at the burn site. Based on clinical features and classical Ayurvedic descriptions, the condition was diagnosed as Durdagdha. Management included Chedana karma (local debridement), followed by topical application of Jatyadi Taila, along with internal administration of Guggulu Tikthaka Kashayam, Mahamajistadi Kashayam, Kaishora Guggulu, and Triphala Guggulu. Marked improvement was achieved without major complications, and the patient resumed normal daily activities. This case suggests that Ayurvedic management can provide effective outcomes in burn injury care.

Index Terms—Accidental burn, Durdagdha second degree deep wound -partial thickness burn, TBSA (Total body surface area).

I. INTRODUCTION

Burn injuries involve tissue damage caused by heat, chemicals, electricity, radiation or friction, ranging

from superficial first-degree to severe, full thickness third degree burns. The severity of burn injuries is classified based on the percentage of the total body surface area TBSA affected. Burn injuries involving less than 20% TBSA are generally considered mild, whereas those affecting 20% or more are classified as severe [1]. Every year in India about 7 million people suffer from burn injury [2]. Burn injuries are typically 86% thermal in origin, 4% electrical and 3% chemical in nature. Burn injuries are more common in low- and middle-income people [3]. Standard guideline for the burn management includes fluid resuscitation, airway preservation, analgesics, Broad-spectrum antibiotics, nutritional support, escharotomy, fasciotomy, skin grafting, and tetanus prophylaxis [4]. Dermatitis, wound infections are early complications while scarring and contractures are late complication. Septicemia are the most challenging aspects of treating burn case.

In Ayurveda burn injuries are discussed under Dagdhavrana. Classification of burn injuries and treatment mentioned in Sushruta samhitha can be closely related to the degree of the burn in modern science, with terms like Plushta (first degree burn degree), Durdagdha (second degree deep wound - partial thickness burn), Samyak Dagdha (second degree full thickness burn), and Ptidadgtha (third degree burn) involving muscle and joints [5]. Sixty therapeutic procedures are explained in the Ayurveda classics for the management of wounds.

Here, we report a case of accidental burn injury which was managed effectively with ayurveda approach.

II. PATIENT INFORMATION AND CLINICAL FINDINGS

A 69-year-old male patient with burns over: anterior aspect of the right thigh (fig. 1)

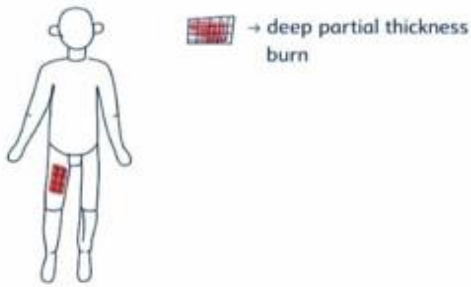


Fig - 1 Assessment of burn wound by TBSA rule

Figure 2:



The incident was caused by hot water burn (scald). Immediately after the injury, he applied cold water, followed by honey and toothpaste locally. The patient was treated conservatively at a modern medicine hospital, receiving antibiotics and anti-inflammatory drugs as well as wound care (application of the silverex ointment). He approached our hospital with worsening pain at the burn site due to improper care. The general examination revealed that he was well built and well nourished. The systemic examination revealed that he was conscious, well oriented, and without any co-morbidities. His vital signs showed as pulse rate of 72 beats per minute, blood pressure of 130/90 mmHg, respiratory rate of 20 per minute and body temperature of 98.9°

F. The local examination revealed second degree partial thickness burn over the anterior aspect of right thigh (pink, yellow) were seen. The hematology report revealed hemoglobin of 14.2gm%, WBC count 6000 cells/cumm, ESR 50mm/hr, Neutrophil 60%, lymphocytes 37%, Eosinophils 03%, FBS: 105 mg%, PPBS: 135mg%, uric acid: 13.4mg%.

Table:1 Time Line

28/1/26	Patient met with accidental burn injury and received emergency care in modern hospital.
2/2/26	Symptoms worsening due to improper care.
5/2/26	Admitted to our hospital ayurvedhic treatment initiated.
12/2/26	Patient responded well with Ayurvedha treatment, Marked improvement with ongoing epithelialization.

III. DIAGNOSIS

The diagnosis was established based on the signs and symptoms and clinical examination. It was diagnosed as an accidental burn injury with a TBSA of 2% second degree (deep wound - partial thickness burn without eschar) burn. In Ayurveda, it was diagnosed as Durdagdha and treatment was planned accordingly.

Therapeutic intervention

The prognosis and probable complications, risk were informed to the patient. Later the treatment was initiated after obtaining the consent. Initially burn site washed with normal saline and local debridement of the dead tissue, after that application of CIPLADINE povidone-iodine ointment was done to maintain aseptic environment followed by dressing. Next day onwards cleaning with NS and followed by dressing with Jatyadi taila was done. The therapeutic interventions are highlighted on the TABLE 2 and the assessment of the wound healing with the bates-Jensen wound assessment tool are shown on TABLE 3 [6]. Internally combination of medicine includes Guggulu Tikthaka kashayam, Mahamanjistati kashayam,

Punarnavdashakam kashayam, Kaisora Guggulu, Triphala Guggulu (15 each). 30 ml of kashayam diluted with 45ml lukewarm water was administered thrice daily before food [7][8][9][10].

Table:2 Therapeutic interventions

DATE	PLAN OF CARE	MEDICINE
5/2/26	Primary wound care management	Cleaning with normal saline followed by debridement Dressing done with betadine
6/2/26-12/2/26	Ayurvedhic management	Cleaning with normal saline and followed by dressing with JATYADI TAILA

5/2/26-12/2/26	Internal medicine	GUGGULU TIKTHAKA KASHAYAM, MAHAMANJISTATI KASHAYAM, PUNARNAVA DASAKAM KASHAYAM, KAISORA GUGGULU, TRIPALA GUGGULU (15 each) 30ml of kashayam diluted with 45ml of lukewarm water thrice daily before food.
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TABLE:3 Assessment of Wound Healing

Features	5/2/26	6/2/26	7/2/26	8/2/26	9/2/26	10/2/26	11/2/26	12/2/26
Pain VAS SCALE	8	5	2	1	-	-	-	-
TBSA (right lower limb)	2%	2%	2%	2%	2%	1%	1%	1%
Floor, Epithelization Granulation tissue,	pinkish & yellowish Slough	Pink & yellowish Slough	Pink Minimal Yellowish Slough. granulation phase of healing, Epithelization change started.	Pale Central yellowish Slough. granulation phase of healing. Epithelization at margin	Yellowish brown Surface with thick Slough. granulation phase of healing. Epithelization present	Mild Yellowish Slough. granulation tissue present. Epithelization present	Pale Yellowish Slough epithelization and healing. granulation tissue present.	Epithelization Continued Healthy granulation tissue presents at margin
Discharge	Slight discharge	Discharge Absent	Absent	-	-	-	-	-

IV. FOLLOW UP AND OUTCOME

The patient was admitted for a period of 8 days and advised to continue the same medications after discharge, along with the application of oil and he was instructed to continue at home. The patient was advised to visit the hospital after one week for assessing the changes in the wound.

The wound healed completely. The patient is now able to perform his routine activities without any discomfort.

Figure:3



Marked improvement with ongoing epithelialization

V. DISCUSSION

Survival rate for burn patient in general have improved markedly by over the past several decades. Burn injury management is a difficult task as it causes significant pain and disability to the victims. These injuries require proper wound care as they are more susceptible to infection. Long term heat or temperature exposure causes tissue damage and protein denaturation, resulting in the release of toxic metabolites that cause localized oedema and a systemic inflammatory response [11]. The prime concern in burn injury management is late complications. The treatment principles are designed by analyzing the degree of burn and it's systemic effect on the body. Initially the case was managed with standard treatment protocol. The present case was treated as Durdagdha line of Management, the medicine was selected based on properties like good tissue penetration, debridement property, anti-microbial, anti-inflammatory and provide a moist environment for faster wound healing [12].

Here Guggulu Tikthaka Kashayam used having karmas likes Pittaraktha shamaka, Shothahara, Vrana ropana. These formulation contains Guggulu, Nimba,

Guduchi, Triphala etc, which consists of Guggulsterones inhibit cytokines and prostaglandins, increasing collagen production, stimulate fibroblast, anti-inflammatory, Tissue regeneration leads shodhana karma. Gallic acid from Triphala neutralizes free radicals, decreasing oxidative stress and epithelialization leading to faster wound closure, antimicrobial to promote Vranaropana, Krimighna properties.

Jatyadi Taila formulation is selected because of its known Rogagna karma in Dagda vrana and

Dushta vrana. Having Actions like Vrana shodhana, Vrana ropana, Krimighna,

Vatapithashamaka. There by reducing Daha (burning) and promoting tissue regeneration (Vrana ropana). It contains the ingredients like Haridra, Nimba, Daruharidra, Manjistha having effect in burn like Clean the wound, prevents infection, anti-inflammatory, antioxidant and tissue repair. Main phytochemicals constituents are Berberine, Alizarin, purpurin, curcumin. It promotes the wound healing process with increased capillary formation & fibroblast proliferation enhancing the rate of epithelialization [13].

Mahamanjistadi Kashayam is best act on dusyas like twak and rakta. Having karmas like Rakthashodhana, Pittahara, Shothahara, Vranasodhanam, reduce Daha, Raga. These formulations contains the ingredients like Manjistha, Guduchi, Haridra, Nimba, etc. contains active principle includes Alizarin, Purpurin, Tinosporaside, Curcumin etc. It reducing the risk of infection, By improving microcirculation, it supports proper nourishment of damaged tissues along with analgesics and anti-inflammatory actions. Its Vrana ropana property promotes faster healing and regeneration of skin by promotes granulation tissue formation. Punarnavadasakam Kashayam having karmas include Shothahara, Dahahara, Pittakaphashamaka. Effect in burn is to reduces sopham, exudates (Sravana) and, wound repair by collagen formation. It contains active ingredients includes Punarnava, Guduchi, Triphala etc. contains Boeravinones, Berberi, Gallic acid. It regulates fluid balance, It also aids in removing accumulated toxins (ama) from the body, promoting better healing. By improving circulation (purification of blood) and act as anti-inflammatory, it also enhances tissue repair [15]. Kaishora Guggulu having karmas like Shothahara, Vedanasthapanana, Vrana ropana, Pitta-

kapha shamaka, Rakthasodhanam, Vranashodana. Main ingredients include Guggulu, Guduchi, Triphala etc contains Guggulsterones, Magnoflorine. It act as Analgesic, Anti-inflammatory, minimizes scar formation by antioxidant activity-neutralizing free radicals produced during thermal injury. It also aids in removing ama (toxins), which helps prevent delayed healing and infection. It enhances fibroblast activity and collagen synthesis, supporting granulation tissue formation and epithelialization.

Triphala Guggulu having karmas include Shothahara, Krimighna, Vrana-ropana,

Rakthashodhana, Tridoshaghna, Deepana, Pachana, Rechana, Lekhana, Vranasodhana, Vedanasthapana, Rasayanam. It specifically pacifies aggravated Pitta and Kapha, thereby reducing burning sensation (Daha), redness (Raga), and exudation (Srava) in Dagdha vrana. Main dravyas includes Guggulu, Triphala contains Guggulsterones, Vitamin C, Gallic acid. This formulation detoxifies vitiated blood and removes ama, preventing suppuration and delayed healing by act as strong antioxidant and antimicrobial effects, it enhances fibroblast activity and collagen synthesis, promotes wound contraction, anti-inflammatory, analgesics, skin regeneration and accelerates epithelialization [14].

Burn care demands extended hospitalization, which might be the major severe case for secondary infections. This Ayurveda approach accelerated wound healing and there by shortened hospital stay. Further research in this approach is necessary to provide evidence- based results.

VI. CONCLUSION

Burn management is a challenging task: even after complete recovery complications such as contractures, discoloration and keloid formation occur invariably. The present case was successfully treated with an Ayurvedic approach. The wound healed almost within 9 days of treatment. This Ayurveda approach minimized the hospital stay and enhanced the wound healing process with minimal discoloration. Application of Jatyadi taila, bandaging, local debridement of dead tissue along with internal medication has given promising results in the burn wound healing. This case study highlights the potential of the Ayurvedic approach in burn wound management and suggests promising outcomes.

Informed consent

The informed consent regarding documentation and publication of the case was obtained from the patient.

Patient perspectives

The patient was satisfied and pleased with the treatment which was provided in the hospital. He is now able to perform his routine activities without discomfort.

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