

A case study on Ayurvedic management of Pramada dagda vrana (Accidental burns) aiming at preventing potential complications

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Abstract

Thermal burns is a category of accidental injury, affected by excess heat or cold exposures. Thermal injury leads to coagulative necrosis when extreme temperatures are rapidly transferred from source to the body surface. Prompt medical attention and proper wound care are essential to alleviate the gravity of burn injuries. This article brings an insight into ayurvedic approach in managing partial-thickness superficial burn caused by thermal injury, supported with a case study. Various aspects related to burn injury, wound care, pain management, preventing potential complications and reducing chronic residuum of the injury are discussed herewith. Pramada dagdhas (accidental burns) are sub grouped into 4 different stages in Ayurveda. Treatment principles of second stage of pramada dagda (durdagda) was applied in the case and wound healed without any scarring or associated complications. No modern biomedicines were administered in the patient throughout the treatment.

Key words

Thermal injury, partial-thickness superficial burn, pramada dagda, durdagda

Introduction

Burn is an injury to the skin or other organic tissue primarily caused by heat or due to radiation, radioactivity, electricity, friction or contact with chemicals. Thermal (heat) burns occur when some or all of the cells in the skin or other tissues are destroyed by hot liquids (scalds), hot solids (contact burns), or flames (flame burns) and exposure to extreme cold (frostbite). A burn caused by steam or hot liquids (referred to as scald injuries) often manifests initially as superficial due to the rapid dispersion and dissipation of the heat source and energy.

Besides identifying the cause of a burn injury, it is pivotal to classify the injury based on its severity. Burns are categorized based on both depth of the burn and the extent of total body surface area affected. A burn can be placed in one of five classifications based on progressive depth: superficial, superficial partial thickness, deep partial thickness, full thickness, and deep full thickness.²

Superficial burns involve only epidermis known as first-degree/grade 1 burns resulting in redness, desquamation of the skin and present with mild short-lived pain. Superficial partial-thickness (second-degree/grade 2A) burns affect the epidermis and the upper third papillary layer of the dermis. These burns typically result in edema and blister formation and present with moderate to severe pain. These burns generally do not necessitate surgical intervention. Deep partial-thickness (second-degree/grade 2B) burns on the other hand affect the entirety of both the epidermis and the dermis and are notably less painful due to partial destruction of pain receptors. Both blisters and eschar may be present in this grade. Full-thickness (third-degree/grade 3) burns extend through the entire dermis to the subcutaneous tissue, are typically not painful due to nerve damage, demanding topical protection against infection, often necessitate surgical management and skin grafts. Eschar formation can be observed here. Lastly, a deep full-thickness (fourth-degree/grade 4) burn involves damage to deeper tissues such as muscles or bones, often appears blackened, frequently leads to the loss of the affected body part. These burns are the most severe and often present with substantial impairment, both in terms of structural and functionality.³

The percentage of total body surface area is also utilized to classify burns. Burns that involve less than 20% of the total body surface area are categorized as local burns, while those that affect more than 20-30% of the body are classified as severe burn injuries (SBI). SBI can lead to systemic disturbances that entails

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intensive management.

The concept of therapeutic burns (Agnikarma) and accidental burn injuries (pramada dagda) is well narrated in the chapter Agnikarmavidhi of Sushruta Samhita. Accidental burn injuries (pramada dagdas) are classified into plushta, durdagda, samyak dagda and atidagda based on symptom analysis and depth of the affected tissue. In this case, the patient presented with clinical features of partial thickness superficial burns which is described as durdagda in Samhita. Sphota (blisters), varying degrees of pain such as teevra osha and daha along with other inflammatory signs will be presented clinically, if superficial dermal layer is involved. Treatment strategy adopts both sheetakriya and ushnakriya alternatively, focussing on topical medications and procedures aiming to promote wound healing and prevent infection and other complications.

Patient Information

A 69-year-old woman had an accidental spillage of boiling water having temperature approximately 100°C on 11th July 2024 evening at 5pm. The affected site was antero-lateral thigh and preliminary care of removing the dress from the affected part and exposing her legs to running water for 5 minutes was carried out by the patient. However, she developed pain and burning sensation

over the affected part and noticed blisters along with discoloration of the thigh that night and reported in OP department of salyatantra on 12th 2024 at 8.30am. The patient was not having any metabolic disorders.

Local examination of burn site

Site: Antero lateral aspect of right thigh

Size of burn site: 20cm x 10cm

Shape: irregular

Number of lesions: one large blister of size 6.2cm X 3.0cm and one small blister of size 1.5cm X 0.5cm respectively

Swelling: Localised, mild

Percentage of burn: 4.75% according to Rule of Nine

Degree of burn: Second degree burn (moderate)

Depth: partial-thickness superficial burn

Diagnostic assessment

Diagnosis: partial-thickness superficial burn (Durdagda vrana)

Prognosis: Sadhyam

Table 1: Therapeutic interventions

Treatment Phases	Aim	Time period	Intervention	
Phase 1	Prevent infection, wound cleaning and healing	1st week [12/7/24-18/7/24]	Internal Medicines	Topical treatments
			- Manjishtadi kashayam 20 ml kashaya + 60ml boiled and cooled water; twice daily before food - Tab. Triphala guggulu 2-0-2 with kashaya	- Aspiration of fluid: from blisters. - Prakshalana (cleaning): with Nalpamaradi kashaya (4 tsp coarse powder and a pinch of turmeric powder is boiled in two litre water, allowed to cool and used for pouring over the area 4 times a day) - Lepana (without bandage): Satadhouta ghrita
Phase 2	Wound healing and prevent complications	2nd week 19/7/24-26/7/24	Tab. Yashtimadhu 1-1-1 after food	- Prakshalana : Nalpamaradi kashaya (2 tsp powder and a pinch of turmeric powder is boiled in one litre water, allowed to cool and used for pouring over the area twice daily) - Madhuyashtyadi ghrita for external application without bandage

Discussion

This was a case which responded to burn injury with ayurvedic management. Achievement of early healing and minimal scarring was the treatment outcome observed.

Internal medicines:

The first phase of treatment was aimed at preventing infection, vrana shodana(cleaning) and vrana ropana(healing). Manjishtadi kashaya has drugs possessing wound healing properties with tiktha-kashaya rasa and pitta-kapha samana, which was administered at this phase. Tab. Triphala guggulu is tridosahara, sodhakara and vranaropana. Its tiktha, kashaya madhura rasa helps in alleviating pitta and addressing local inflammatory signs. Thriphala and guggulu individually are also potent vrana ropana medications.

Next Phase was focussed on vrana ropana (wound healing) and vaikritapaham (preventing complications of wound healing). Tab.Yashtimadhu was selected as it is raktha prasada (detoxifies blood) and shotahara (reduces inflammation). Glycyrrhiza glabra has proved pharmacological actions of antibacterial, antithrombotic and moreover helps in healing ulcers. The property of varnya in yashtimadhu helped in minimal scarring and minimal pigmentation of the affected area of burn injury.

External treatment:

Irrigation with Nalpamaradi kashaya having ingredients Udumbara (Ficus racemosa), Plaksha (Ficus microcarpa), Aswatha (Ficus religiosa) and Nyagrodha (Ficus bengalensis). This formulation with shita virya is mainly indicated to treat skin diseases and superficial ulcers.

Satadhouta ghrita has healing properties, regenerates damaged skin cells, soothing property and antiseptic in action. It was fortified with a pinch of turmeric and used for application over the burn site for 2 weeks.

Madhuyashtyadi ghrita is mentioned sadyovrana pratisheda of Ashtanga Hridaya-Uttarastana. The sadhyo vrana (accidental wound) with severe pain should be immediately sprinkled with ghee boiled with yashti madhuka made lukewarm. In this scenario, ghrita was applied without heating for preventing associated complications of wound healing such as pigmentation, scarring and neuropathy.

Conclusion

Second degree partial-thickness superficial burn involves varying depths of dermis. This will be presented with blisters, altered pain sensation and swelling. Nevertheless, a significant subset of patients experiences complications, such as contractures, hypertrophic scars and neuropathy, greatly affecting their overall well-being. A patient with a partial-thickness superficial burn (durdagda) was managed with minimal interventions, offering a faster healing, without scar formation or pigmentation. Treatment included selected internal medications and external treatments like pariseka and lepanam.



Figure 1: Day 1 [12/7/24]
Burn site with blisters, mild oedema, moderate pain



Figure 2: Day 8 [19/7/24]
Healing, healthy site without blisters, skin shows peeling off with minimal pain; site appears pinkish brown



Figure 3: Day 15
Healed without scarring and pigmentation

References:

1. Prof.GD Singhal & colleagues, Susrutha samhitha ancient indian surgery, volume 1, sutra stana, agnikarma vidhi adyaya , pg no.
2. Parks Textbook of Preventive and Social medicine, edition 23, Chapter 6-Epidemiology of chronic non communicable diseases and conditions, Burns, page number 410
3. Bailey and Loves short practice of surgery, 27th edition, Chapter 41 Burns, page number 616
4. Dr. Rajendra Joshi, Dr. N. B. Mashetti, & Dr. Rakesh Kumar Gujar. (2018). Comparative Clinical study of Jatyadi Taila and Jatyadi Ghrita in the management of Dushta Vrana. Journal of Ayurveda and Integrated Medical Sciences, 3(03), 47-53. <https://doi.org/10.21760/jaims.v3i03.400>
5. Dr. Gandhi T. N., Gupta SN, Patel MV, & Kalsariya BD. (2017). Pharmaceutico - Analytical Study of Triphala Guggulu. Journal of Ayurveda and Integrated Medical Sciences, 2(05), 67-71. <https://doi.org/10.21760/jaims.v2i05.308>
6. Mohan, V., & Deva, S. (2022). A case study on the management of Kitibha kushta (Psoriasis) with virechana, dhanyamla dhara and takra dhara. International Journal of Ayurvedic Medicine, 13(1), 185-190. <https://doi.org/10.47552/ijam.v13i1.2391>
7. Sushant Bhandari, Nisha Ojha. Therapeutic Effects of Glycyrrhiza Glabra Linn. International Journal of Ayurveda and Pharma Research. 2023;11(11):39-49. <https://doi.org/10.47070/ijapr.v11i11.2910>