



An Integrative Approach in the management of Second-Degree Burns using Ayurvedic and Modern Medicine: A single case report.

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Abstract

Introduction:

Burn injuries are among the most common causes of morbidity, with second-degree burns involving both epidermal and partial dermal damage. Modern management emphasizes infection control and pain relief, while *Ayurvedic* medicine offers wound-healing and tissue-regenerative therapies. This case report describes successful healing of second-degree burn using *Shatadhauta ghrīta* during the active phase, followed by *Manjistaadi taila* in the post-healing period as a *savarnya*.

Methodology:

A clinical observation was conducted on a patient with second-degree burns. Wound was cleansed with normal saline and *Shatadhāuta Ghṛita* was applied externally twice daily. Modern management included IV antibiotics along with regular aseptic dressing. The healing progress was monitored based on pain reduction, exudate control, epithelialization rate, and scar formation over a period of 21 days.

Results:

Patient treated with the combined *Ayurvedic* and modern approach showed better wound healing, significant pain relief, early epithelialization, and minimal scarring compared to standard care alone. No secondary infections or adverse effects were observed during the treatment period.

Key words: *Ayurveda*, *Shatadhouta ghrīta*, *Manjistaadi taila*, Second-degree burns, Integrative approach

Aim and Objective:

Aim:

To evaluate the effectiveness of *Śatadhāuta Ghṛita* during the active healing phase and *Mañjiṣṭādi Taila* during the post-healing phase in the management of a second-degree burn through an integrative approach.

Objectives:

- To assess the wound-healing effect of *Śatadhāuta Ghṛita* in reducing pain, burning sensation, and promoting epithelialization in a second-degree burn.
- To observe the role of *Mañjiṣṭādi Taila* in improving pigmentation, skin texture, and minimizing scar formation after wound healing.
- To evaluate patient comfort, absence of infection, and overall cosmetic outcome with this sequential *Ayurvedic* management.
- To explore the feasibility of integrating *Ayurvedic* formulations with standard modern burn care in routine clinical practice.

Introduction:

A burn is a wound in which there is coagulative necrosis of the tissue.¹ Thermal burns, in particular, cause damage to the skin and occasionally underlying structures through abrupt temperature change that exceed biologic tolerance. This leads to membrane disruption, protein denaturation, and necrosis. The injury extends from the skin surface to deeper structures in a first order logarithmic distribution depending on the temperature of the burning agent and duration of exposure. Severe burns to the skin reaching over 280°F induce a Maillard-type reaction with changes in consistency and colour common with lame full-thickness burns. Burns that induce necrosis of the surface with temperatures below 280°F, such as scald burns from hot water, have a different appearance and texture and are commonly mistaken for partial-thickness burns.² According to W.H.O - An estimated 180 000 deaths every year are caused by burns. The vast majority occur in low- and middle-income countries.³

Burns are classified according to the depth:⁴

Superficial partial-thickness burn: The damage in these burns goes no deeper than the papillary dermis. The clinical features are blistering and / or loss of the epidermis.

Deep partial-thickness burn: These burns involve damage to deeper parts of the reticular dermis. Clinically, the epidermis is usually lost. Blebs or vesicles are formed between the epidermis and dermis.

In modern medical practice, paraffin gauze is widely used as a primary dressing material for burn injuries. It ensures painless dressing removal, maintains an optimal moisture balance, facilitates exudate drainage, and remains affordable. However, it does not play a significant role in preventing post-burn complications or actively enhancing the wound healing process since it lacks inherent therapeutic properties. Agents like silver sulfadiazine may form a pseudo-eschar layer, which can hinder wound healing. Consequently, there is an urgent need to develop a sustainable, easily accessible, and cost-effective treatment option for first- and second-degree burns that can minimize post-burn complications.

Case details: The following is a case report of patient aged 27 years, who was presented with the following details.

Chief complaints:

C/o Scald burn at chest, neck, left shoulder region and medial aspect of B/L upper arms.

Associated with burning sensation and pain since 10 days.

History of present illness: The patient was apparently normal before 10 days, then due to spilling of oil over neck, chest, shoulder region he developed above symptoms. He has taken treatment for the same in Bengaluru (Details of treatment not found). Since his home town was Bagalkot he visited our hospital for further treatment.

History of past illness:

No H/O DM, HTN or any other medical / surgical illness & no any other drug sensitivity's in the past.

Personal History

Diet : Vegetarian

Appetite : Good

Bowel : Once a day, normal

Micturition : 5-6times

Sleep : Disturbed

General examination

Pallor : Absent

Icterus : Absent

Lymphadenopathy Absent

Cyanosis : Absent

Clubbing : Absent

Edema : Absent

Vitals

Pulse : 76 bpm

BP : 120/80 mm of Hg

Temperature : Afebrile

Respiratory rate : 16/min

Systemic examination

CVS : S1S2 heard.

CNS : Conscious, oriented to time, place and person.

RS : Air entry bilateral equal,

Normal vesicular breath sounds, no added sounds present

P/A : Soft, No Organomegaly.

Wound Examination

Location of burn – Burn injury present over chest, neck, B/L shoulder and upper arm.

Degree of burn – Second degree

Percentage of burns – 15% of total body surface area according to burn guidelines.

Investigations

Hb : 12.2%

TC : 8,300cells/mm

ESR : 46mm/hr

RBS : 80.6mg/dl

Final Diagnosis: *Dagdha Vrana*- Second degree burns 15%.

Treatment:

Procedure:

Wound cleaning : The wound was gently cleaned with normal saline 9% to remove slough, debris and any exudates. Care was taken to avoid trauma to healthy granulation tissue.

Application of medicine: After thorough cleaning, *Shatadhouta ghruta*⁵ was applied evenly over the wound surface.

- Inj: Pan 40 mg IV OD * 6 days
- Inj: Pipzo 4.5 gm IV TID * 6 days
- Inj: Metris 400 mg IV TID * 6 days
- Inj: Amitax 500 mg IV OD * 2 days
- Tab: Chymoral forte BD * 3 days

Post-healing care: *Manjistadi taila*⁶ (E/A)

Result:

- Slough is reduced completely in 7 days.
- Re-epithelialization of the wound was seen.
- Complete reduction in pain and burning sensation.
- The wound was healed and 50% of burn area has achieved normal pigmentation after 30 days.

Patient experienced complete reduction in burning sensation and pain, greatly improving the comfort levels.

Dressing changes were pain less, helping in positive wound healing experience. 80% of the burn area exhibited normal pigmentation after application of *Manjistadhi taila* suggesting that the skin was healing well and regaining its natural colour.



Day 1st



Day 3rd



Day 5th



Day 7th

Day 11thDay 13th

Discussion:

Second-degree burns require timely intervention aimed at pain reduction, infection control, moisture balance, and promotion of epithelial regeneration. In the present case, an integrative approach combining modern burn care with *Ayurvedic* formulations resulted in effective healing with minimal complications. The use of *Śatadhāuta Ghṛita* possess qualities like *Daha shamaka*, *Vedhanastapana*, and used in *Dagdavrana*. During the active inflammatory and healing phases played a significant role in reducing pain, burning sensation, and exudate. Its traditional preparation *ghṛita* washed 100 times enhances its cooling, anti-inflammatory, and penetrating properties, making it suitable for *Dagdha Vrana*. Previous *Ayurvedic* literature highlights its *Vranaropaka* (wound-healing) and *Dāhaśamana* (burn-soothing) actions, which correlate with clinical observations in this case, where early epithelialization and reduced discomfort were noted. Alongside this, standard modern management consisting of intravenous antibiotics, analgesics, and aseptic dressing ensured systemic infection control and supported an optimal healing environment. Notably, no secondary infection was observed throughout treatment, suggesting that the combined protocol is safe and complementary. In the post-healing phase, *Mañjiṣṭhādi Taila* was introduced to address pigmentation irregularities and scar minimization. *Mañjiṣṭhā* is well-known for its *Raktaprasādana* (blood purifying) and *Varṇya* (complexion-enhancing) effects. The patient showed progressive improvement in pigmentation, with 80% return to normal skin colour within 30 days, indicating the potential usefulness of this formulation as a post-burn *savarnya*. This case highlights the feasibility and effectiveness of integrating *Ayurvedic* medicaments with modern burn care. While the results are encouraging, larger controlled studies are necessary to validate these findings and establish standardized integrative protocols for burn management.

Conclusion:

This case report highlights the successful integration of *Ayurvedic* and modern medical approaches in the management of second-degree burns. The application of *Śatadhāuta Ghṛita* during the active healing phase provided significant relief from pain and burning sensation while promoting early epithelialization and maintaining a moist, infection-free wound environment. Following wound closure, the use of *Mañjiṣṭhādi Taila* contributed to improved pigmentation, enhanced skin texture, and minimized scar formation. The absence of secondary infection and the patient's high comfort level further support the safety and effectiveness of this integrative protocol. Although this is a single-case observation, the positive outcome suggests that combining traditional *Ayurvedic* formulations with standard modern burn care can offer a holistic, cost-effective, and patient-friendly treatment option. Further clinical studies with larger sample sizes are recommended to establish standardized guidelines and strengthen evidence for integrative burn management.

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