

Local Application of *Shata Dhauta Ghrita* in Foot Injury- A Case Report

Aishwarya Pandey¹, Ashok Kumar Sharma²

¹M.D Scholar, PG Dept. of Kriya Sharir,

²HOD and Prof., PG Dept. of Kriya Sharir,

Madan Mohan Malviya Government Ayurved College, Udaipur, Rajasthan.

Corresponding Author: Dr. Aishwarya Pandey

DOI: <https://doi.org/10.52403/ijhsr.20251212>

ABSTRACT

Introduction: *Shata Dhauta Ghrita* (SDG) is a traditional Ayurvedic preparation made by washing cow ghee with cold water a hundred times, known for its cooling, wound-healing, and skin-regenerative effects. This case illustrates its successful application as a topical treatment for diabetic foot wounds.

Patient's Information: A 66-year-old male patient, with a history of diabetes and previous angioplasty, arrived with a traumatic injury to his left foot after dropping a heavy weight. The wound displayed necrosis, slough, and infection, resulting in partial skin loss and limited mobility. He had not undergone any surgical procedures previously and was receiving *Ayurvedic* treatment for his diabetes.

Therapeutic Intervention: The patient's treatment involved daily cleansing of the wound, followed by the application of SDG 2 to 4 times per day for a duration of three months. His oral *Ayurvedic* antidiabetic medication was continued throughout this period. The SDG was prepared using traditional methods in a copper vessel.

Results: After 15 days, signs of infection and slough began to diminish, revealing visible granulation. By one and a half months, the wound bed displayed healthy tissue and some epithelialization. At the end of three months, the wound had fully epithelialized with no signs of infection or pain, enabling the patient to bear full weight.

Conclusion: The topical application of *Shata Dhauta Ghrita* significantly promoted wound healing, decreased infection and inflammation, and restored functionality, highlighting its important role in managing diabetic wounds.

Keywords: *Shata Dhauta Ghrita* (SDG), *Ayurvedic* wound management, Foot injury, Diabetic wound care, Traditional topical therapy, Ghee-based emulsion, etc.

INTRODUCTION

Shata Dhauta Ghrita (SDG) is a medicine that is a processed cow ghee washed 100 times with water (*Shata* = one hundred, *Dhauta* = washed). *Shata Dhauta Ghrita* is a smooth, homogenous, non-oily substance that is easier to use. It also lacks the distinctive aroma and granular, oily

consistency of cow ghee. SDG smaller particle size helps provide a non-granular, non-sticky, and uniform texture that makes it easier to apply to the skin and helps accelerate the rate at which it absorbs through the skin. When an oil-in-water emulsion is washed, its consistency and

viscosity improve, making it appropriate for topical applications.

Caraka specifically states that ghee benefits memory, intelligence, *Agni* (the factor responsible for digestion, metabolism, and biotransformation), *Sukra*, *Ojas* (the bio-essence of life), *Kapha* (one of the three bio-energies primarily responsible for cohesion), and *Medas* (adipose tissue). It relieves *Vata* (one of the three bio-energies largely responsible for movement), *Pitta* (one of the three bio-energies primarily responsible for heat), *Visha*, insanity, phthisis, bad luck, or fever. It is the best of all fats, cold, *Madhura rasa*, *Madhura Vipaka*, and contains 1000 potentialities, therefore when used properly according to established techniques, it performs 1000 different functions¹.

SDG refers to a traditional Ayurvedic cleansing technique involving the use of medicated ghee for internal purification. In Ayurveda, ghee (clarified butter) is considered a potent vehicle for delivering therapeutic substances to the body².

Classical description-

In the *Uttaratantra*, *Acharya Susruta* mentions *Shata Dhauta Ghrita* in *Jwara* for *Daha Shamana*. The procedure told as to wash ghee for hundred times in cold water. The resultant ghee is known as *Shata dhauta ghrita* and it is of light in consistency³.

If there is bleeding during fourth month of pregnancy then below the naval region, the entire body of the pregnant woman should be smeared with *Shata dhauta ghrita* or *Sahsra dhauta ghrita*. According to *Acharya Charaka*, in *Kusta chikitsa* if there is *Daha* in *Kusta*, *Abhyanga* (massage with ghee) is advised using *Shata dhauta ghrita* for *Dahashamanartha* (pacification of burning feeling)⁴.

Traditionally, pregnant women with unexplained bleeding or spotting should apply *this shata dhauta ghrita* around the umbilicus⁵.

This is an effective remedy for *Visarpa* (herpis), when applied repeatedly by mixing an equal quantity of fine powder of *Pancha Valkala*, *Shoola* (pain) in *Vrana* (wound), it

subsides *Daha* (burning sensation) and cures *Visarpa* like that of *Garuda* killing the *Sarpa* (Snake)⁶.

Shata Dhauta Ghrita used as *Pralepa* in the technique of scraping of eye lids and other disorder of the eye lids⁷. In *Sushruta kalpa sthana* SDG is indicated in *Visha Chikitsa*. A poultice made from cooling anti-venomous medications combined with *Shata Dhauta Ghrita* and applied to the *Kothayukta Vrana* (gangrenous wound)⁷. The methods by which the properties like *Rasa*, *Guna*, *Virya*, *Vipaka*, undergo "*Gunantaradhaanam*" i.e the changing of *Sthoola Guna* (macro form) to *Sukshma Guna* (micro form)⁸, both chemical and physical properties within the *Dravya* are changing (Substance). '*Samskaro hi naama Gunantaradhanam Uchyate*'

An Ayurvedic remedy called *Shata Dhauta Ghrita* is frequently used to treat skin conditions. This is processed by washing ghee 100 times in cold water, as the name suggests. This process turns ghee into a soft, cooling, nourishing, silky ointment that can be used as a traditional moisturiser and anti-wrinkle skin cream.⁹

This case illustrates the uniqueness of a rarely used topical application and its remarkable results.

SHATA DHAUTA GHRITA PREPARATION METHOD

Clarified Butter was placed in a shallow vessel, cold water was added to the vessel, and a kneading action began. After 100 rounds of kneading, the mixture was allowed to rest before draining the excess water. SDG is made by washing the *Ghrita* with cold water until the water turns warm, then discarding the warm water and adding fresh water, and repeating the process 100 times. In this procedure, *Ghrita* was triturated with water, forming a water-in-oil emulsion since water is in the dispersed phase and oil is in the continuous phase. The pressure exerted during agitation causes the particle size of fat granules to diminish as the washing process continues (the texture was non-granular and smooth). Eventually, multiple washings produce an o/w form of emulsion. It is

possible that it will result in the production of a complicated system, such as w/o/w emulsion. The reason could be that water globules pass through fat molecules, generating a water oil (w/o) emulsion that causes Ghrita to expand. The pigment may leak into the water after repeated washings, affecting the color of the item (Dhauta). In this process, triglyceride is transformed into glycerol in the presence of water.¹⁰ In the preparation of Shatadhauta ghrita, Ghee is turned into a soft cream. The fat splitting process occurs because of the presence of water, and triglycerides are changed into glycerol.

Vessels – We had taken copper vessel; one can go for bronze also.

Vaidyak Shabda Sindukara has added another reference to the preparation of Shata Dhauta Ghritaby Santapya (heating) the Ghrita and Nirvapana (pouring) in cold water 100 times¹¹.

CASE REPORT

A 66-year-old male patient meet with an accident heavy weight fall on left foot.

Medical History- Diabetes mellitus II, had angioplasty once

Occupation – flour mill worker

Drug history – Ayurvedic medication for Prameha was continued from 3 months.

Chief Complaint - The patient sustained a severe injury to the left foot due to an accident involving a weighing machine. The trauma resulted in an extensive wound with exposed tissues, necrotic areas, and signs of infection. The injury occurred 1 week before he came to our OPD. No prior surgical history related to the affected limb.

Clinical Examination

On physical examination, the patient appeared healthy with a moderate build, weighing 65 kg and measuring 170 cm in height. General signs were unremarkable, with no icterus, clubbing, or cyanosis observed. Vitals were within acceptable limits, with a pulse rate of 74 beats per minute, blood pressure recorded at 138/90 mm Hg, and oxygen saturation (SpO₂) at

98%. Personal history revealed a normal appetite, regular bowel movements (once daily), micturition frequency of 4–5 times per day, sound sleep, and a vegetarian diet. The patient consumes tea twice daily and reports no other addictions.

Systemic examination showed clear bilateral respiratory sounds (RS), normal heart sounds (S1, S2) in the cardiovascular system (CVS), and the central nervous system (CNS) was intact, with the patient conscious and oriented.

According to Aṣṭavidha Parikṣa, the Nāḍī was 74/min, and the urine was normal in quantity (Mātrā), color (Varṇa), smell (Gandha), and frequency (Pravṛti). Stool was described as Nirāma mala, and the tongue was coated (Malāvṛta), indicating Sāma. The voice (Sabda) was Gambhīra, and touch (Sparśa) was Mṛdu, Sīta, Snigdha, and Slakṣṇa. The eyes (Dṛk) appeared normal with a whitish hue (Swetābh), and general appearance (Aākṛti) was also Sāmānya.

In the Daśavidha Parikṣa, the patient's Prakṛti was determined to be Kapha-vāta, and Vikṛti as viṣama/Samavāya. Sāra was Rakt, Samhanana and Pramāṇa were both Madhyama. The patient is habituated to Eeka rasa/sarva rasa, and prefers Uṣṇa and Snigdha food, indicating his Sātmya. Satva was found to be Madhyama, with both Abhyavaharana śakti (capacity to ingest food) and Jarana śakti (digestive capacity) rated as Madhyama. Vyāyāma śakti (exercise capacity) was also Madhyama, and the patient's age (Vaya) was 66 years.

After initial wound cleaning and primary treatment care patient come to OPD having a concern regarding wound healing soon.

Diagnostic Assessment

The patient came in with a persistent foot wound and a random blood sugar measurement of 204 mg/dL, indicating poorly managed Type 2 Diabetes Mellitus, which poses a considerable risk for delayed healing and a heightened chance of infection. An X-ray examination of the left foot excluded any bone involvement, confirming there were no fractures, dislocations, or signs

of osteomyelitis. Laboratory tests showed a slightly elevated C-reactive protein (CRP) level of 5 mg/L, suggesting a potential acute inflammatory response. Furthermore, blood tests revealed signs of a mild acute infection, but there were no indications of systemic sepsis. The wound was evaluated clinically and classified as Grade 2 according to the Wagner Diabetic Foot Ulcer Classification System, which identifies ulcers that penetrate into the subcutaneous tissue with exposed muscle but do not involve bone or form abscesses. Local findings included necrotic tissue, yellowish drainage, surrounding redness, and moderate pain, all indicative of localized infection and tissue damage.

On day one in OPD -

Clinical Presentation:

The patient presented with a large, deep ulcer on the dorsal aspect of the left foot. The

wound exhibits sign of necrosis, slough, and possible infection, with yellowish-white exudate and surrounding erythema. There is partial skin loss with exposed muscle layers. The patient complains of pain, difficulty in weight-bearing, and restricted mobility.

Treatment Plan:

Wound Management:

Daily sterile wound cleaning with appropriate antimicrobial agents with *Jatyadi Tailam*.

Local application of *Shata Dhauta Ghrita* for 2-3 times in a day, and continued for 3 months.

Same *Ayurvedic* oral medication was continued for diabetes.

OBSERVATIONS AND RESULTS

Table 1: Treatment progression.

Time period	Treatment	Clinical appearance
At Day 1 in OPD	Wound cleaning with <i>Jatyadi tailam</i> - twice regularly. Application of <i>Shata Dhauta Ghrita</i> locally (4-5 times) daily. Oral ayurvedic medication - For pain management	The patient presented with a large, deep ulcer on the dorsal aspect of the left foot. The wound exhibits sign of necrosis, slough, and possible infection, with yellowish-white exudate and surrounding erythema. There is partial skin loss with exposed muscle layers.
After 15 Days	Wound cleaning with <i>Jatyadi Tailam</i> once Application of <i>Shata Dhauta Ghrita</i> locally (2-4 times) daily Oral Ayurvedic medication - BD For pain management	Slough significantly reduced; signs of early granulation tissue formation visible, with the wound likely closed and a scar forming. Infection controlled, less purulent discharge Surrounding inflammation diminished Pain: Moderate, reduced pain and swelling, with some return of movement and strength
After 1.5 month	Application of <i>Shata Dhauta Ghrita</i> locally (2-4 times) daily Oral ayurvedic medication SOS- for pain management	Wound bed covered with healthy granulation tissue No active signs of infection Partial epithelialization at wound edges Pain: Mild, only during dressing or prolonged standing
After 3 months	Application of <i>Shata Dhauta Ghrita</i> locally (1-2 times) daily	Wound fully covered with new epithelial tissue No discharge or signs of infection Skin slightly hypo pigmented at healing site Pain: Absent at rest; mild discomfort with extended activity Full weight-bearing resumed with mild support.

Medication includes – *Nirgundi, Dasmool* etc. *Kwath* this medicine is should be taken under experts only according to vitals, *Desha, Kala, Prakriti*, and other parameters.

Table 2: Chemical and physical parameters of SDG.

Parameter ¹²	Go ghee	SDG	Changes
Organoleptic property			
Colour	Golden yellow	White	
Odour	Characteristic, Pleasant	Odourless	
Taste	Characteristic	Tasteless	
Texture	Granular, oily	Smooth, non - oily	
Physical parameters			
Ph	4.6	5.9	↑ 1.28 times
Moisture Content (%)	0.26	0.8	↑ 2.98 times
Particle size (μ)	179.03	59.90	↓ 2.98 times
Viscosity (cp) at 20 rpm for 30 sec	8000	9770	↑ 1.22 times
Copper content (ppm)	0.14	1.8	↑ 8.86 times
Chemical parameters			
Acid value	0.85	0.12	↓ 7.59 times
Saponification value	234.28	25.88	↓ 9.02 times
Iodine value	35.69	2.86	↓ 12.62 times
RM value	21.69	0.22	↓ 98.50 times

Images given below are according to the healing:





Figure 1-4: Clinical images.

DISCUSSION

The patient has diabetes and was not responding to the initial treatment at private hospital at home town only. The wound was turning into a diabetic ulcer, which might lead to gangrene. Then he switched to Ayurveda as a result, SDG helps in wound healing. SDG accelerates the healing process and acts as a natural penetration booster in topical therapies and scar healing agent due to triglyceride is transformed into glycerol in the presence of water. SDG continued use leads to promoting tissue regeneration and controlling infection in complex ulcers. agents. Re-epithelialization cellular development and remodelling was visible. Chemical analysis and *Ayurvedic Samskara Siddhanta* have also proven this that *Goghrita* Ph is more acidic and particle size is

bigger than the SDG. This reflects tissue repair and moisture balance. Inflammation was visibly reduced within a month, which likely correlates with the resolution of the infection and stabilisation of the wound bed. Proliferation and granulation were facilitated by *SDG as it is rich in bioavailable lipids and cooling Copper has Lekhana, wound healing and Sodhanartha* property. Hence it was washed in copper vessel, it leads to enhance copper content in SDG.

CONCLUSIONS

The patient's wound was treated effectively with appropriate wound management and local application on *Shata Dhauta Ghrita*. The patient is advised to monitor the wound for signs of infection and return for further evaluation as needed.

Patient perspective

I went to the allopathic hospital near by my home. After taking medicine and dressing for a week pain was increasing, and it started becoming worse. They informed me due to diabetic history it will take more time to start healing, if left untreated it may convert to gangrene which may lead to amputation. Prescribed me some expensive medication. Due to financial condition, I don't have enough money to pay for medication and dressing as well. I had diabetic treatment earlier here, but was taking regularly, so decided to visit your hospital. Here they assured me the healing and scrapped a little part of injured foot to bleed for once. Cleaned it with oil dipped gauze thoroughly. Then gave me some ghee to apply 3-4 times in adequate amount along with *Kshayam*. This started reflecting the result within week. I was satisfied with this ghee. I got to know they used to prepare it by their own with *Gyatri mantra*. It healed my foot, pain and burning sensation was reduced significantly. I never expected a cream can be so helpful without being harmful.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: None.

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How to cite this article: Aishwarya Pandey, Ashok Kumar Sharma. Local application of *Shata Dhauta Ghrita* in foot injury- a case report. *Int J Health Sci Res.* 2025; 15(12):93-99. DOI: <https://doi.org/10.52403/ijhsr.20251212>
