

A CASE STUDY ON THE EFFECT OF SHATADHAUTA GHRITA IN SCAR HEALING

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Article Received on 31 August 2026,
Article Revised on 21 September 2026,
Article Published on 01 Oct. 2026,

<https://doi.org/10.5281/zenodo.23036176>

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How to cite this Article: Dr. Sneh Ranga^{*1}, Ridhi Saini², Bhanvi Gupta³. (2026). A Case Study on The Effect of Shatadhauta Ghrita In Scar Healing. World Journal of Pharmaceutical Research, 15(19), 532–540.

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ABSTRACT

Scar management is an essential aspect of dermatological and surgical therapy, addressing both functional limitations and cosmetic concerns. Lepa, Taila, Ghrita, and Rasayana are non-surgical Ayurvedic methods that focus on nourishing the skin and promoting tissue regeneration, whereas Kshar Karma, Agnikarma, Raktamokshana, and Shashtra Karma are surgical methods that effectively control hypertrophic and keloid scars. Some scars might gradually disappear, but others might become apparent and affect a person's look, functionality, and emotional well-being. Effective scar treatment is necessary to improve one's physical appearance and quality of life.

KEYWORDS: Shatdhaut ghrita, application of sdg, scar, healing of scar.

AIM

In order to determine their potential as modern treatments, this study assesses the effectiveness of Shatadhauta Ghrita (SDG) in combination for scar healing.

MATERIAL AND METHOD

A 23-year-old patient who had fallen on a rough surface had a two-month-old post-traumatic scar across the damaged area. It took around two weeks for the deep wound to fully heal. Residual scar formation with pigmentation and changed skin texture was seen following wound closure. So the scar is formed and the patient.

INTERVENTION

It was recommended to apply Shatadhauta Ghrita locally over the scar area twice a day for a

predetermined amount of time while taking aseptic precautions.

INTRODUCTION

A. ABOUT SCAR HEALING^[8]

DEFINITION: An area of fibrous tissue that replaces healthy skin after an injury is called a scar (or scar tissue). Every wound (for instance, following an accident, illness, or surgery) leaves some degree of scarring due to the biological process of wound repair in the skin as well as in other organs and tissues of the body with relatively minor lesions. Animals with full regeneration, which regenerate tissue without leaving scars, are an exception.

The last relaxed, randomly arranged collagen bundles (type 1) that comprise a matured scar are referred to as scars. During the remodeling phase, an initially immature scar forms; this Type III collagen is present in the distorted scar. This type of scar is pink, hard, irritating, and elevated. The scar fully matures during a 12-month period, during which time more type I collagen forms and disorganized collagen aligns along stress lines. This developed scar is flat, light, pliable, and itch-free. In contrast to mature scars, hypertrophic scars and keloids continue to contain more type III collagen than type I collagen.

Types of Scars (1)

A developed scar is softer, flatter, paler, acellular, has fewer fibroblasts and blood vessels, and doesn't itch (diminishes). An atrophic scar is extended, flat, and pallid.

A hypertrophic scar is an extra scar that does not go beyond the original wound's edge; the inflammatory phase of wound healing is prolonged. It appears one to three months following trauma. It gets better on its own. Keloid, which develops in a triangle between two shoulder points and the xiphisternum, is a persistent, excessive growth of the scar that extends past its edge into the surrounding skin. It is gradual and appears three months to years after the incident. The most frequent location is the prenatal area.

1. KELOID SCAR

'Like a claw'

Keloid is the excessive abnormally stretched (type III thick) collagen tissue bundles arranged with aligning in the same plane as the epidermis but extends beyond the original scar margin which continues to grow for long period.

Keloid is common in blacks. Common in females.

Genetically predisposed. Often familial. Very rare in Caucasians. There is defect in maturation and stabilization of collagen fibrils. Normal collagen bundles are absent.

* Keloid continues to grow even after 6 months, may be for many years. It extends into adjacent normal skin. It is brownish black/pinkish black (due to vascularity) in colour, painful, tender and sometimes hyperaesthetic; spreads and causes itching.

Keloid may be associated with Ehlers-Danlos syndrome or scleroderma.

Spontaneous keloid, which is frequently observed in dark-skinned individuals, is keloid that develops after an undetected trauma without scar development.

After initial growth, some keloids can become non-progressive.

Proliferating immature fibroblasts, proliferating immature blood vessels, and type III thick collagen stroma are characteristics of pathologically keloid.

2. **HYPERTROPHIED SCAR**

The excessive development of abnormal scar tissue with type III collagen (thin) that is elevated, frequently vascular, and contained within the original wound's edge is known as a hypertrophic scar; it typically stops growing after six months and frequently regresses on its own. Takes place anywhere in the body. Not inclined by genetics. Not related.

Growth is often restricted to the scar tissue and lasts up to six months. Normal skin won't be affected.

Over time, spontaneous improvement is frequently observed. It is nontender, pale brown in color, and painless.

Frequently self-limiting as well. When given a steroid injection, it reacts really well. Recurrence is rare.

It frequently occurs in severe dermal burns, wounds healed by secondary intention, and wounds that overlap tension lines.

LITERATURE OVERVIEW OF SHATADHAUT GHRITA

शतवारान् शीतजलेन धौतं फेनिलं घृतं शतधौतघृतं ||

[Susruta samhita, Dalhana's commentary Nibandha Sangraha]

For daha shamana, Acharya Susruta in Uttarantra described Shatadhauta ghrita in Jwara. The process called for washing ghee with cold water 100 times. The resulting ghee has a light consistency and is called Shatadhauta ghrita.

The entire body of the pregnant woman should be covered with Shatadhouta ghrita or Sahsra dhouta ghrita if there is bleeding during the fourth month of pregnancy below the naval region.

According to Acharya Charaka's kusta chikitsa, if there is daha in kusta, abhyanga (massage with ghee) is recommended with tiktaghrita or Shatadhouta ghrita for dahashamanartha (pacification of burning feeling).

दाहज्वरार्तं मतिमान् वामयेत् क्षिप्रमेव च । शतधौतघृताभ्यक्तं दिह्याद्वा यवशक्तुभिः ॥ [Shusruta samhita, uttartantra 39, २८३ ॥] (4)

For daha shamana, Acharya Susruta in Uttartantra described Shatadhouta ghrita in Jwara.

शतधौत घृतोपेतैः मुहुरन्यैरशोषिभिः । प्रतिलोमं हितो लेपः सेकाभ्यंगाश्च तत्कृताः ॥ [Astānga hrdaya uttara tantra 25/28] (Treatment of wound) (3)

When applied regularly and combined with an equal amount of fine powdered Pancha Valkala, this powerful medicine for visarpa (herpes) reduces daha (burning sensation), shoola (pain), in vrana (wound), and cures visarpa like garuda killing the sarpa.^[2]

Shatadhouta ghrita is used as pralepa for scraping the eyelids and treating various eye lid disorders. shatadhouta ghrita is mentioned in Visha Chikitsa in Sushruta Kalpa Sthana. The kothayukta vrana (gangrenous wound) is covered with a poultice made from anti-venomous medications with cooling potency combined with Shatadhouta ghrita.

This shatadhouta ghrita is traditionally applied around the umbilicus in pregnant women who experience unexplained bleeding or spotting.

Patient Case Summary

Age : 23 years Sex : Female

Chief Complaint: Noticeable scar on the right knee that has lasted for 2 months.

Clinical Overview

History of Present Illness: The scar emerged after an accidental injury two months ago. Once the initial wound healed, it resulted in a persistent and concerning mark. No previous anti-scar treatments have been attempted.

Past Medical History: There is no record of diabetes, hypertension, chronic skin conditions, or tendencies toward keloids.

Physical Examination: Examine the scar by palpation, inspection, and percussion on the scar

Vitals & Systemic: All vital signs are stable and within normal ranges.

Local Scar Examination: Found on the right knee, measuring 5 cm × 2.5 cm. The scar appeared as erythematous dark brown, slightly raised, rough, and less flexible than the adjacent skin. There was mild intermittent itching, but no tenderness was noted.

GHRITA PHARMACOLOGICAL ACTION^[8]

It is easily digestible since it has about 8% fewer saturated fatty acids. No other edible oil or fat has these fats, which are the most palatable. Vitamins, such as Vit A and Vit E, are included in it. E is an antioxidant that helps reduce ketone bodies and protects the body from oxidative damage. Vital. Maintaining the body's epithelium tissue keeps the eyeball's outer lining wet and guards against blindness.^[8]

Healthy body growth is supported by essential fatty acids. The melting point of ghrita is 35°C, which is lower than the average body temperature. With a digestibility rating of 96%, it has the highest rate of absorption among all the oils and fats. Because it contains roughly 8% fewer saturated fatty acids, it is easily digested. These lipids are the most appetizing of all edible oils and fats. It contains vitamins including vitamin A and vitamin E. It is an antioxidant that shields the body from oxidative damage and aids in the reduction of ketone bodies. Maintaining the body's epithelial tissue keeps the outer lining of the eyeball moist and prevents blindness.^[8]

Essential fatty acids support healthy bodily development. Ghrita has a melting point of 35°C, which is below the body's typical temperature. Out of all the oils and fats, it has the greatest digestibility coefficient, or rate of absorption, at 96%. When coupled with Ghrita, active substances are readily absorbed and digested. Ghrita's lipophilic activity makes transportation to a target organ and ultimate administration into cells easier because cell membranes contain lipid. Ghrita's lipophilic activity makes it easier for the formulation to enter the cell and reach the nuclear membrane and mitochondria microsome. Beta-carotene and vitamin E are two antioxidants found in ghrita.^[9]

PREPARATION OF SHATDHAUT GHRITA

शतवारान् शीतजलेन धौतं फेननलं घृतं शतधौतघृतं ॥

[Susruta samhita, Dalhana's commentary Nibandha Sangraha]

Goghrita (clarified butter) was placed in a shallow vessel, water was added, and kneading was done. The mixture was kneaded for two to three minutes, allowed to settle, and then the water above was drained. This process was carried out one hundred times. The process was repeated 100 times to obtain Shatadhauta Ghrita.

Because water is in the dispersed phase and oil is in the continuous phase, this method of triturating ghrita with water produced a water-in-oil type of emulsion.^[6]

The pressure used during agitation causes the fat granules' particle size to diminish as the washing process progresses (the texture was smooth and non-granular). After several washings, an o/w kind of emulsion is eventually produced. It could result in the development of a complicated system such as a w/o/w emulsion.

Ghrita may swell as a result of water globules passing through fat molecules and creating a water-oil (w/o) emulsion.^[7]

Repeated washings may cause the pigment to bleed into the water, altering the item's color (Dhauta). In the presence of water, the triglyceride is transformed into glycerol during this process. In the process of making Shatadhauta ghrita ghee, fat splitting occurred because of the presence of water, converting triglycerides into glycerol.

Intervention and Clinical Outcome

The patient was given Shatadhauta Ghrita—a traditional ayurvedic preparation made from clarified goghritta that has been washed 100 times with water.

Regimen: It was applied in a thin layer gently twice each day over the scar and it is rubbed gently and made it absorbed.



Day 1 Two Month of Healed Scar.



Day 4 Start The Application of Shatdhaut Ghrita.

Results: Consistent adherence resulted in notable therapeutic improvements: Pigmentation: A significant decrease in dark brown hyperpigmentation was observed.

Texture: There was a clear enhancement in the skin's pliability, making the area much softer and smoother.



**DAILY APPLICATION OF
SHATDHAUT GHRITA**



**RESULT: SCAR HEALING
[AFTER 10 WEEKS] SCAR SIZE
REDUCED PIGMENTATION IS
REDUCED**

Symptom Relief: The intermittent itching completely subsided.

Overall Outcome: The skin was effectively restored to a condition that closely resembled its normal texture and visual appeal.

OBSERVATION TABLE

PARAMETER	BEFORE TREATMENT	AFTER TREATMENT
SCAR SIZE	5 cm × 2.5 cm	2cm × 0.5 cm
PIGMENTATION	Hyperpigmented	Pigmentation is reduced
TEXTURE	Rough	Smoother texture
PLIABILITY	Reduced compared to surrounding skin	Reduced Than before
ITCHING	mild	Disappear
PAIN	Absent	Absent
DURATION	2WEEK	10WEEK
COLOR	Erythematous dark brown	Pigmentation reduced; color closer to surrounding skin
OVERALL APPEARANCE	Prominent and cosmetically concerning scar	Scar markedly reduced with improved cosmetic appearance

OBSERVATION AND RESULT

Scar pigmentation, texture, pliability, pain, and overall cosmetic appearance were evaluated both before and after treatment. During follow-up, there was a discernible improvement in the appearance of the scar, a decrease in pigmentation, and a softening of the scar tissue.

CONCLUSION

Shatadhauta Ghrita showed beneficial effects on post-traumatic scar healing as well as cosmetic attractiveness. Because of its traditional Vrana Ropana and skin-rejuvenating properties, it might be a useful and reasonably priced topical treatment for scar control. The current case study demonstrates how using Shatadhauta Ghrita topically enhanced scar texture, pigmentation, and associated symptoms, hence facilitating scar healing. The formulation was well received and there were no unfavorable side effects. Despite the encouraging outcomes, more extensive clinical studies are required to validate these results and ascertain the therapeutic importance of Shatadhauta Ghrita in scar treatment.

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