

A SINGLE CASE STUDY ON THE MANAGEMENT OF VRANAGRANTHI (KELOID) WITH SAPTAPARNA KSHARA

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ABSTRACT

Background: Keloids are benign dermal fibro-proliferative nodular lesions that arise from abnormal wound healing, characterized by excessive collagen deposition extending beyond the original wound margins. Despite numerous treatment modalities including surgical excision, intralesional steroids, cryotherapy, laser therapy, and radiation, there remains no universally accepted single effective treatment protocol due to high recurrence rates exceeding 50%. In Ayurveda, keloids can be correlated with *Vranagranti*, a condition first described by Acharya Vagbhata arising from vitiated *Vata* drying up the blood in an unhealed wound. **Case Presentation:** A 32-year-old female patient presented with a keloid over the left ear pinna measuring 8 mm × 6 mm, with associated itching, burning sensation, hyperpigmentation, and pain. The lesion had

developed following ear piercing performed two years prior and had progressively increased in size despite previous intralesional steroid injections. The patient was diagnosed as a case of *Vranagranti* and treated with *Pratisaraneeya Saptaparna Kshara* (medicinal alkali prepared from *Alstonia scholaris*) applied locally once weekly for three sittings, neutralized with lemon juice after application. **Results:** Assessment was done using the Vancouver Scar

Scale at baseline, 7th day, 14th day, and 21st day follow-ups. Significant reduction was observed in all parameters—itching (G3 to G0), burning (G2 to G0), pigmentation (G2 to G1), pain (G2 to G0), scar size (G2 to G1), and scar height (G2 to G0). The lesion showed marked regression with no recurrence at three-month follow-up. **Conclusion:** *Saptaparna Kshara* demonstrated significant clinical efficacy in the management of *Vranagranthi* (keloid) with complete symptomatic relief and no recurrence. This parasurgical *Kshara Karma* offers a safe, cost-effective, and time-saving alternative to conventional treatments.

KEYWORDS: *Vranagranthi*, Keloid, *Saptaparna Kshara*, *Kshara Karma*, Vancouver Scar Scale.

INTRODUCTION

Wound healing is a complex biological process that, when deviated from its normal course, can result in pathological scarring. Keloids represent one such aberration—benign dermal fibro-proliferative nodular lesions that extend beyond the original wound boundaries, rarely regress spontaneously, and tend to recur even after surgical excision.^[1] The term "keloid" was first coined by Alibert in 1817, derived from the Greek word *chele* meaning "crab's claw," reflecting the claw-like extensions of the lesion into surrounding healthy skin.^[2]

Keloids pose a significant therapeutic challenge to clinicians worldwide. Despite numerous scientific and technological advancements including surgical excision, cryotherapy, intra-lesional steroid and interferon injections, laser therapy, irradiation, mechanical compression dressing, and silicone sheet applications, there is no universally accepted single effective treatment protocol.^[3] The recurrence rate remains alarmingly high, exceeding 50% in most studies.^[4] Furthermore, keloids often lead to psychological stress, cosmetic disfigurement, and diminished quality of life.

In the ancient Indian system of Ayurveda, this condition finds its description under the concept of *Vranagranthi*. Acharya Vagbhata in *Ashtanga Hridaya* explains that when a wound is not properly healed or is subjected to excessive use of all tastes (food), or if the body is traumatized, Vata dries up the vitiated blood in the wound producing a *Granthi* with burning sensation—this is known as *Vranagranthi*⁵. Acharya Sushruta and Acharya Charaka have also elaborated on the aetiology and pathology of *Granthi* in their respective treatises.^[6,7]

Kshara Karma (chemical cauterization) is an important parasurgical procedure in Ayurveda, capable of incision (*Chedana*), excision (*Bhedana*), scraping (*Lekhana*), and hemostatic action. It is particularly useful in anatomically challenging areas where conventional surgery is difficult.^[9] *Saptaparna* (*Alstonia scholaris*), known for its *Tikta* (bitter) and *Kashaya* (astringent) Rasa, possesses *Upashoshana* (desiccating) properties that help in reducing *Kleda* and *Meda*.^[10] When processed into *Kshara*, it becomes a potent topical agent capable of bringing about tissue regression without the need for invasive surgery.

This case study documents the clinical effect of *Pratisaraneeya Saptaparna Kshara* in the management of *Vranagranthi* (keloid) with reference to a patient treated at the OPD of the Department of Shalya Tantra.

CASE REPORT

Patient Demographics

- Name: Mrs. S.K.
- Age: 32 years
- Gender: Female
- Occupation: Housewife
- Residence: Mathura, Uttar Pradesh
- Date of Presentation: 15th January 2024

Chief Complaints

The patient presented with.

- A progressively enlarging raised lesion over the left ear pinna since 2 years
- Itching over the lesion (severe)
- Burning sensation (moderate)
- Pain on touch (moderate)
- Dark discoloration of the lesion

History of Presenting Illness

The patient reported undergoing ear piercing on the left ear pinna approximately two years prior. Following the piercing, she developed a small nodular swelling at the site which gradually increased in size over the subsequent months. She had consulted a dermatologist who administered three sessions of intralesional triamcinolone acetonide injections over six

months. While there was temporary reduction in size, the lesion recurred and became larger than before within three months of the last injection. The lesion was associated with intense itching, particularly at night, and burning sensation on exposure to sunlight. There was no history of spontaneous regression at any point.

Past History

- Surgical History: Nil significant
- Medical History: No hypertension, diabetes, or thyroid disorders
- Drug History: No known allergies; had taken intralesional steroids previously
- Family History: No history of keloid formation in family members

Personal History

- Diet: Mixed diet
- Appetite: Normal
- Sleep: Disturbed due to itching
- Bowel and Bladder: Regular
- Addictions: None

General Examination

- Pulse - 76/min, regular
- Blood Pressure - 120/80 mmHg
- Respiratory Rate - 16/min
- Temperature - Afebrile
- Pallor - Absent
- Icterus - Absent
- Lymphadenopathy - None

Local Examination

Inspection

- Site: Left ear pinna (helix region)
- Size: 8 mm × 6 mm
- Shape: Irregular, nodular
- Color: Hyperpigmented (brownish-black)
- Surface: Smooth, elevated

- Margins: Extending beyond original wound site

Palpation

- Consistency: Firm, rubbery
- Tenderness: Present on deep pressure
- Temperature: Normal
- Mobility: Fixed to underlying tissue

DIAGNOSIS

- Ayurvedic Diagnosis: *Vranagranthi*
- Modern Diagnosis: Keloid (ICD-10: L91.0)

ASSESSMENT CRITERIA

The Vancouver Scar Scale (VSS)^[9] was used for objective and subjective assessment

Parameter	Grade	Description
Itching	G0	No Itching
	G1	Mild Itching
	G2	Moderate Itching
	G3	Severe Itching

Parameter	Grade	Description
Burning	G0	No Burning
	G1	Mild Burning
	G2	Moderate Burning
	G3	Severe Burning

Parameter	Grade	Description
Pigmentation	G0	Normal
	G1	Hypo Pigmentation
	G2	Hyper Pigmentation

Parameter	Grade	Description
Vascularity	G0	Normal
	G1	Pink
	G2	Red
	G3	Purple

Parameter	Grade	Description
Pain	G0	No Pain
	G1	Mild Pain
	G2	Moderate Pain
	G3	Severe Pain

Parameter	Grade	Description
Scare Size	G0	<2 mm
	G1	2-5 mm
	G2	5-8 mm
	G3	8-10 mm

Parameter	Grade	Description
Scar Height	G0	Flat
	G1	<2 mm
	G2	2-5 mm
	G3	5 mm

MATERIALS AND METHODS

Drug Preparation: *Saptaparna Kshara*

Saptaparna Kshara was prepared according to the classical method described by Acharya Sushruta in Sushruta Samhita, Sutra Sthana, *Ksharapakavidhi Adhyaya*.^[9]

Procedure

Fresh mature *Saptaparna* (*Alstonia scholaris*) bark and whole plant (*Panchanga*) were collected from the herbal garden of Sanskriti Ayurvedic Medical College & Hospital, Mathura, and authenticated.

- The plant material was dried completely and burnt to obtain fine white ash.
- The ash was mixed with water in the ratio of 1:6 as per classical recommendation.^[9]
- The mixture was stirred well and allowed to settle overnight.
- The supernatant was filtered 21 times through a single-folded cloth to obtain clear *Kshara* solution.
- The filtrate was evaporated to obtain concentrated *Kshara*.
- The prepared *Kshara* was stored in an airtight glass container.

Organoleptic Properties

- Colour: Greyish-white
- Odour: Characteristic alkaline odour
- Taste: Alkaline, pungent
- Consistency: Semi-solid paste

TREATMENT PROTOCOL

Intervention: *Pratisaraneeya Saptaparna Kshara* (local application)^[10]

Procedure.

- The keloid area was cleaned with normal saline.
- A thin layer of *Saptaparna Kshara* was applied precisely over the keloid surface using a sterile glass rod.
- The *Kshara* was allowed to remain in contact for approximately 2 minutes (100 Matra Kala).
- The applied *Kshara* was neutralized immediately with lemon juice (*Nimbu Swarasa*) to prevent excessive tissue damage.
- The area was washed with normal saline and dried.
- A sterile dressing was applied.

Frequency: Once weekly

Total sittings: 3

Follow-up: 7th day, 14th day, 21st day, and 3 months

INVESTIGATIONS

- Complete Blood Count (CBC): Within normal limits
- Biopsy: Not performed as the lesion was clinically diagnostic and the patient declined invasive procedure

Ethical Considerations

Informed written consent was obtained from the patient after explaining the nature of the procedure, expected outcomes, and potential adverse effects. Ethical clearance was obtained from the Institutional Ethics Committee of Sanskriti Ayurvedic Medical College and Hospital, Mathura.

OBSERVATIONS AND RESULTS

Assessment at Baseline

Parameter	Baseline Grade
Itching	G3 (Severe)
Burning	G2 (Moderate)
Pigmentation	G2 (Hyperpigmentation)
Vascularity	G2 (Red)
Pain	G2 (Moderate)
Scar Size	G2 (5- 8 mm)
Scar Height	G2 (2- 5 mm)
Total VSS Score	15

Assessment at Follow-ups

Parameter	Day 7 th	Day 14 th	Day 21 st
Itching	G2	G1	G0
Burning	G1	G0	G0
Pigmentation	G2	G1	G1
Vascularity	G1	G1	G0
Pain	G1	G0	G0
Scar Size	G2	G1	G1
Scar Height	G1	G1	G0
Total VSS Score	10	5	2

CLINICAL FINDINGS**After 1st Sitting (Day 7)**

- The lesion appeared slightly flattened
- Moderate reduction in itching (G3 to G2)
- Mild reduction in burning sensation (G2 to G1)
- Mild reduction in pain (G2 to G1)
- No adverse reactions observed
- The patient reported better sleep quality

After 2nd Sitting (Day 14)

- Significant flattening of the lesion observed
- Itching reduced to mild (G1)
- Burning completely resolved (G0)
- Pain completely resolved (G0)
- Vascularity reduced from red to pink (G2 to G1)
- Scar height reduced from >5 mm to <2 mm (G2 to G1)
- The lesion appeared lighter in colour

After 3rd Sitting (Day 21)

- Complete resolution of itching (G0)
- No burning sensation (G0)
- No pain (G0)
- Vascularity normal (G0)
- Scar height flat (G0)
- Pigmentation improved from hyperpigmentation to hypopigmentation (G2 to G1)

- Scar size reduced to 2-5 mm (G1)
- Total VSS Score reduced from 15 to 2

At 3-Month Follow-up:

- No recurrence of the lesion
- Complete symptomatic relief
- The patient reported high satisfaction with cosmetic outcome
- Scar was flat, minimally pigmented, with no itching, burning, or pain

Adverse Effects

No adverse effects such as excessive tissue necrosis, infection, bleeding, or allergic reactions were observed during or after the procedure. The patient tolerated the Kshara application well with only mild transient burning sensation during the application which subsided immediately after neutralization with lemon juice.

DISCUSSION

Understanding *Vranagranthi* in Ayurveda

The concept of *Vranagranthi* finds its earliest description in Ashtanga Hridaya by Acharya Vagbhata, who explains that improper wound healing leads to the formation of a *Granthi* (nodular swelling) at the wound site⁵. The pathogenesis involves vitiation of Vata which dries up the *Rakta* (blood) in the wound, leading to the formation of a hard, elevated lesion associated with burning sensation.

Acharya Sushruta and Acharya Charaka have described *Granthi* as a distinct pathological entity arising from vitiation of *Vata*, *Pitta*, and *Kapha*, either individually or in combination.^[6,7] In the context of *Vranagranthi*, the lesion is specifically related to improper healing of a pre-existing wound, making it a complication of wound management.

Modern understanding of keloids as excessive fibroplasia in the dermal healing process aligns well with the Ayurvedic concept of *Vranagranthi*. Keloids represent an overabundance of collagen deposition, with proliferating immature fibroblasts and type III thick collagen stroma.^[4] The fact that keloids extend beyond the original wound margins and rarely regress spontaneously parallels the Ayurvedic description of *Vranagranthi* as a persistent, progressive lesion.

Rationale for *Saptaparna Kshara*

Saptaparna (*Alstonia scholaris*), belonging to the *Apocynaceae* family, is a well-documented Ayurvedic herb with significant therapeutic potential. It possesses *Tikta* (bitter) and *Kashaya* (astringent) *Rasa*, which are known for their *Upashoshana* (desiccating) properties. This makes it particularly suitable for conditions involving excessive *Kleda* (moisture) and *Meda* (fatty tissue), as seen in keloids.^[10]

When processed into *Kshara*, *Saptaparna* becomes a potent alkaline substance capable of chemical cauterization. *Kshara* is defined as a substance that cuts, excises, or scrapes tissue due to its corrosive properties.^[9] Acharya Sushruta has specifically indicated *Saptaparna Kshara* in *Vrana*, *Vatakaphaja Roga*, *Kusta*, *Raktavikara*, *Krimi*, and *Shwasa*.^[9]

The mechanism of action of *Kshara Karma* involves.

- Chemical cauterization: The alkaline nature of *Kshara* causes localized tissue necrosis, breaking down the excessive fibrous tissue.
- Desiccation: The *Upashoshana* property removes excessive moisture from the lesion.^[10]
- Anti-microbial action: *Saptaparna Kshara* has demonstrated antibacterial and antifungal activity against various pathogens.^[10]
- Promotion of healthy healing: The procedure stimulates fresh tissue formation without the extensive scarring associated with surgical excision.

Treatment Limitations

- Surgical Excision Recurrence rate >50%; requires anaesthesia; invasive; time-consuming
- Intralesional Steroids Multiple injections required; recurrence common; painful; steroid side effects
- Cryotherapy Painful; may cause hypopigmentation; multiple sessions required
- Radiation Expensive; risk of malignancy; limited availability
- Laser Therapy Expensive; multiple sessions; variable results

Saptaparna Kshara offers several advantages:

- Non-invasive: No surgical incision required
- Cost-effective: Simple preparation from locally available herbs
- Time-saving: Three sittings with quick recovery
- No anaesthesia: Procedure is well-tolerated

- Low recurrence: No recurrence observed in this case
- No significant side effects: Well-tolerated with proper neutralization

Role of Vancouver Scar Scale

The Vancouver Scar Scale (VSS)^[11] is a validated tool for assessing scar characteristics including pigmentation, vascularity, pliability, and height. In this study, VSS was used to objectively assess treatment response. The significant reduction in VSS score from 15 to 2 demonstrates the clinical efficacy of *Saptaparna Kshara*.

The VSS parameters used in this study—itching, burning, pigmentation, vascularity, pain, scar size, and scar height—comprehensively capture both subjective symptoms and objective findings, providing a robust assessment framework.

CONCLUSION

This case study demonstrates the significant clinical efficacy of *Pratisaraneeya Saptaparna Kshara* in the management of *Vranagranthi* (keloid). The patient showed marked improvement in all subjective and objective parameters as assessed by the Vancouver Scar Scale, with complete resolution of symptoms and no recurrence at three-month follow-up.

Saptaparna Kshara offers a safe, cost-effective, and time-saving alternative to conventional treatments for keloids. Its non-invasive nature, lack of significant side effects, and potential for low recurrence make it a promising therapeutic option. The procedure aligns well with the Ayurvedic principles of *Kshara Karma*—utilizing chemical cauterization to achieve tissue regression while promoting healthy healing.

Further research with larger sample sizes, randomized controlled trials, and longer follow-up periods is warranted to validate these findings and establish *Saptaparna Kshara* as a standard of care in keloid management.

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