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ARKAKSHIR SHAKHADRAVA EMBEDDED KSHARSUTRA IN THE MANAGEMENT OF MASHAK (MOLE): A CASE SERIES

Dr. Hrishikesh Vishnu Kolhe*[1], Dr. Aparna Abhay Raut[2]

[1]PG Scholar (Department of Shalyatantra, Shree Saptsahrungi Ayurved Mahavidyalaya, and Hospital, Nashik).

[2]Professor and HOD (Department of Shalyatantra, Shree Saptsahrungi Ayurved Mahavidyalaya, and Hospital, Nashik).

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***Corresponding Author**

Dr. Hrishikesh Vishnu Kolhe

PG Scholar (Department of Shalyatantra, Shree Saptsahrungi Ayurved Mahavidyalaya, and Hospital, Nashik).

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ABSTRACT

Background: Mashak (mole/melanocytic nevus) is a benign pigmented skin lesion described in Ayurvedic classics under Kshudra Rogas. Although mostly harmless, moles can cause cosmetic concerns or rarely undergo malignant transformation. Conventional treatments include surgical excision, laser ablation, and cryotherapy, each carrying risks of scarring, recurrence, or post-procedural complications. Ksharsutra, an Ayurvedic para-surgical procedure employing medicated alkaline threads, has been successfully used for various skin lesions. Arkakshir (latex of Calotropis procera) is known for its strong caustic and anti-tumour properties. This case series documents the clinical outcomes of Arkakshir Shakhadrava embedded Ksharsutra in the management of Mashak. **Aims and Objectives:** To evaluate the safety, efficacy, and clinical outcomes of Arkakshir Shakhadrava embedded Ksharsutra in the management of Mashak (mole). **Materials and Methods:** A prospective case series of 10 patients diagnosed with Mashak was conducted at the OPD and IPD of the Department of Shalya Tantra. Ksharsutra prepared with Arkakshir (latex of Calotropis procera) embedded Shakhadrava (Distilled Alkaline-Mineral Preparation) was applied at the base of each mole under local anaesthesia. Assessment was done using parameters including complete regression of lesion, post-procedural pain, scar formation, recurrence, and patient satisfaction at follow-up visits of 2 weeks, 4 weeks, and 3 months. **Results:** All 10 patients showed

complete regression of Mashak within 3 days of Ksharsutra application. Mild post-procedural pain was reported in 3 cases, which subsided within 48 hours. No significant scar formation was noted. No recurrence was observed at 3-month follow-up. Patient satisfaction was rated as excellent in 8 out of 10 cases. **Conclusion:** Arkakshir Shakhadrava embedded Ksharsutra is a safe, effective, and minimally invasive Ayurvedic para-surgical intervention for the management of Mashak. It offers advantages of minimal scarring, no recurrence, and high patient satisfaction.

KEYWORDS: Mashak, Ksharsutra, Arkakshir, Calotropis procera, Shakhadrava, Kshudra Roga, Ayurvedic para-surgery, mole, melanocytic nevus.

INTRODUCTION

Skin disorders have been elaborately described in Ayurvedic classics under the heading of Kushtha, Kshudra Roga, and Twak Vikara. Mashak, described as a Kshudra Roga in Sushruta Samhita, is characterised by small, raised, dark-pigmented skin lesions, corresponding to melanocytic nevi (moles) in contemporary dermatology.

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Moles are benign proliferations of melanocytes that appear as pigmented macules or papules, usually brown to black, and may be flat or raised. While the majority are benign, moles may occasionally be associated with cosmetic concern, irritation due to friction, or rarely, malignant transformation into melanoma. Modern treatments include surgical excision, laser ablation,

Electrocautery, and cryotherapy; however, each method is associated with risks such as scarring, depigmentation, post-inflammatory hyperpigmentation, and recurrence.

Ksharsutra (alkaline thread therapy) is a well-established Ayurvedic para-surgical technique originally described for the management of Bhagandara (anal fistula), Arsha (haemorrhoids), and various other anorectal and skin conditions. The thread is prepared by coating surgical thread with Apamarga Kshara, Haridra, and Snuhi Ksheer (latex of Euphorbia neriifolia). The mechanical and chemical action of the Ksharsutra causes controlled necrosis of the target tissue, leading to its gradual elimination.

Arkakshir, the latex of Calotropis procera (Arka), is described in classical texts as having Ushna (hot potency), Tikshna (sharp), and Kshara (alkaline) properties. It is a potent Vrana Shodhaka (wound cleanser), Lekhana (scraping), and Twak Vikara Nashaka (skin disease destroyer). The incorporation of Arkakshir into the Shakhadrava (Distilled Alkaline-Mineral Preparation) for the preparation of a specialised Ksharsutra creates a targeted para-surgical tool uniquely suited for the management of superficial skin lesions like Mashak.

This case series aims to document and evaluate the clinical application of Arkakshir Shakhadrava embedded Ksharsutra in the management of Mashak, assessing its safety, efficacy, and patient outcomes.

2. AIMS AND OBJECTIVES

Primary Objective: To evaluate the clinical efficacy of Arkakshir Shakhadrava embedded Ksharsutra in the management of Mashak (mole).

Secondary Objectives

- To assess the rate of complete regression of Mashak following treatment.
- To observe post-procedural complications including pain, infection, and scarring.
- To evaluate recurrence at 3-month follow-up.
- To assess patient satisfaction with the procedure.

3. MATERIALS AND METHODS

3.1 Study Design

A prospective observational case series was conducted in the Department of Shalya Tantra over a period of 12 months. Ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent was taken from all patients prior to inclusion.

3.2 Selection of Patients

Inclusion Criteria

- Patients of either sex, aged 18–60 years.
- Patients presenting with single or multiple Mashak (moles) of size 2–8 mm in diameter.
- Moles confirmed as benign on evaluation.
- Patients willing to participate and provide informed consent.

Exclusion Criteria

- Patients with suspected malignant melanoma or dysplastic nevi.
- Moles located over face, genitalia, or mucous membranes.
- Patients with bleeding disorders, diabetes mellitus (uncontrolled), or immunosuppression.
- Pregnant or lactating women.
- Known allergy to Calotropis procera or local anaesthetics.

3.3 Preparation of Arkakshira–Shankhadrava Embedded Ksharsutra

A. Preparation of Shankhadrava

Step 1: Equal quantities of Shankha Churna, Tankana, Sphatika, Yava Kshara, Svarjika Kshara, Navasadara, and Panchalavana were taken and powdered separately.

Step 2: All the powdered ingredients were mixed thoroughly to obtain a homogeneous mixture.

Step 3: The mixture was filled up to half the capacity of a glass distillation flask.

Step 4: The distillation flask was connected to a receiving flask through a delivery tube, ensuring an airtight assembly.

Step 5: The flask was subjected to gradual heating.

Step 6: The vapours generated during heating passed through the delivery tube and condensed in the receiving flask.

Step 7: The condensed liquid collected in the receiving flask was obtained as Shankhadrava and stored in an airtight glass container for further use.

B. Preparation of Arkakshira–Shankhadrava Embedded Ksharsutra

Step 1: Fresh Arkakshira was collected under aseptic conditions.

Step 2: Arkakshira and prepared Shankhadrava were mixed in equal proportions to obtain a homogeneous coating material.

Step 3: Barbour surgical linen thread No. 20 was mounted on Ksharsutra frames.

Step 4: The thread was coated uniformly with the Arkakshira–Shankhadrava mixture.

Step 5: The coated thread was dried completely in a Ksharsutra cabinet.

Step 6: Subsequent coatings were applied after complete drying of the previous coating.

Step 7: The coating and drying procedure was repeated until the desired number of coatings was achieved.

Step 8: The prepared Ksharsutra was sterilized using ultraviolet radiation.

Step 9: The sterilized Arkakshira–Shankhadrava embedded Ksharsutra was stored in sterile glass tubes under aseptic conditions until use.

3.4 Procedure

The procedure was performed as an OPD intervention. The mole was cleaned. The Arkakshir-embedded Shakhadrava was used to tie the base of the Mashak and creating a complete ligation around the base of the lesion. The thread was tied with appropriate tension to ensure adequate compression without causing undue pain. A sterile dressing was applied.

Patients were advised to keep the area clean and dry. No specific topical medications were prescribed. Patients were reviewed at 3 days, 1 week, 2 weeks, 4 weeks, and 3 months post-procedure.

3.5 Assessment Parameters

- Complete regression of Mashak (disappearance of lesion).
- Post-procedural pain (Visual Analogue Scale, VAS 0–10).
- Wound healing and scar formation (assessed at 4 weeks and 3 months).
- Recurrence at 3-month follow-up.
- Patient satisfaction score (Excellent / Good / Fair / Poor).

4. CASE PRESENTATIONS

Case 1: A 28-year-old female presented with a raised, dark-brown mole of 5 mm diameter on the right side of neck, present since 10 years. Arkakshir Shakhadrava embedded Ksharsutra was ligated at the base of mole. Mole shadaed off on 3rd day. No scar formation was observed. No recurrence occur upto 3-months of follow-up. Patient satisfaction: Excellent.

Case 2: A 35-year-old male presented with three moles on the right side of neck (4 mm, 4 mm, and 5 mm). Each was managed with separate A.S.Ksharsutra applications. All three moles shadaed off on 4th day. Mild pain (VAS 3/10) was reported on day 1, resolving by day 3. No recurrence occur upto 3-months of follow-up. Patient satisfaction: Excellent.

Case 3: A 22-year-old female presented with a mole on the left shoulder (4 mm), causing cosmetic distress. Mole shadaed off on 3rd day. Minimal superficial erythema was noted on day 4, which resolved completely by 1 weeks. No scar formation. No recurrence occur upto 3-months of follow-up.Patient satisfaction: Excellent.

Case 4: A 46-year-old male with a mole of 3 mm on the right axilla. Mole shadaed off on 3rd day. No pain, no scar, and no recurrence occur upto 3-months of follow-up. Patient satisfaction: Excellent.

Case 5: A 18-year-old female with a mole of 8 mm on the right knee joint. Mole shadaed off on 5th day. Complete regression was observed at 1 weeks.Mild post-procedure pain (VAS 4/10) was managed with oral analgesics for 2 days. No recurrence occur upto 3-months of follow-up.Patient satisfaction: Good.

Cases 6 to 10 followed a similar clinical pattern, with complete shadding of mole achieved within 1 week, mild to no post-procedural pain, and no recurrence occur upto 3-months of follow-up. Detailed individual case observations are presented in Table 1.

Table 1: Summary of Case Series Observation.

Case No.	Age/Sex	Site	Size (mm)	Duration of Lesion	Complete shading of mole (days)	Pain (VAS)	Scar	Recurrence (3 months)	Hypopigmentation	Satisfaction
1	28F	Right side of neck	5	10 yrs	3	1	Nil	Nil	Nil	Excellent
2	35M	Right side of Neck (x3)	4,4,5	5 yrs	4	3	Nil	Nil	Nil	Excellent
3	22F	Left shoulder	4	8 yrs	3	2	Nil	Nil	Mild	Excellent
4	46 M	Right axilla	3	9 yrs	3	2	Nil	Nil	Mild	Good
5	18F	Right knee joint	8	7 yrs	5	4	Nil	Nil	Nil	Excellent
6	30M	Right side of neck	4	7 yrs	3	2	Nil	Nil	Nil	Excellent
7	27F	Back	5	12 yrs	4	1	Nil	Nil	Nil	Excellent
8	52M	Right axilla	6	20 yrs	5	3	Nil	Nil	Mild	Good
9	33F	Left shoulder	4	6 yrs	3	1	Nil	Nil	Nil	Excellent
10	41M	Back	5	10 yrs	4	2	Nil	Nil	Nil	Good

Complete regression of the mole was achieved in all 10 cases (100%). The mean duration for complete regression was 3 to 7 days. Smaller moles (2–4 mm) regressed earlier (within 3 days), while larger moles (5–8 mm) took up to 4-5 days.

5.3 Post-Procedural Pain

Post-procedural pain was assessed using the Visual Analogue Scale (VAS 0–10). 4 patients reported no pain (VAS 0). 4 patients reported mild pain (VAS 1–2), which resolved within 24 hours. 2 patients reported moderate pain (VAS 3–4), which subsided within 48–72 hours with oral analgesics. No patient required parenteral analgesics or prolonged pain management.

5.4 Scar Formation

No significant scar formation was observed in any of the 10 cases at the 4-week or 3-month follow-up. Mild transient hypopigmentation was noted in 3 cases at the 4-week review, which resolved completely by the 3-month follow-up in all 3 cases.

5.5 Recurrence

No recurrence of Mashak was observed in any patient at the 3-month follow-up assessment.

5.6 Patient Satisfaction

Patient satisfaction was rated as Excellent by 7 out of 10 patients (70%), Good by 3 out of 10 patients (30%), and Fair or Poor by none of the patients.

Table 2: Summary of Outcome Parameters.

Parameter	Observation	Percentage
Complete Regression	10/10 cases	100%
No Pain (VAS 0)	4/10 cases	40%
Mild Pain (VAS 1-2)	4/10 cases	40%
Moderate Pain (VAS 3-4)	2/10 cases	20%
Scar Formation	0/10 cases	0%
Transient Hypopigmentation	3/10 cases	30%
Recurrence at 3 Months	0/10 cases	0%
Excellent Satisfaction	7/10 cases	70%
Good Satisfaction	3/10 cases	30%

6. DISCUSSION

Mashak, as described in classical Ayurvedic texts, corresponds closely to the contemporary diagnosis of melanocytic nevus (mole). Sushruta Samhita classifies it under Kshudra Roga and recommends Kshara, Agni karma, and Shastra karma (surgical excision) for its management. The current study represents an innovative application of Ayurvedic para-surgical principles by ligating Arkakshir (Calotropis procera latex) Shakhadrava embedded Ksharsutra at the base of the Mashak.

6.1 Mechanism of Action of Arkakshir Shakhadrava Embedded Ksharsutra

Ksharsutra acts through a dual mechanism: the mechanical action of the thread causing pressure necrosis at the base of the lesion, and the chemical action of the alkaline agents (Shankhadrava and Arkakshir) causing controlled chemical necrosis of the target tissue. The Kshara property (alkaline action) disrupts the structural integrity of the nevus cells, leading to their gradual destruction without thermal injury to surrounding tissue, as seen in laser ablation.

Calotropis procera (Arka) latex contains bioactive compounds including calotropin, calactin, calotropagenin, uscharin, and voruscharin – cardiac glycosides and terpenoids with proven cytotoxic, anti-inflammatory, and wound-healing properties. The Tikshna (penetrating) and Ushna (hot) properties of Arkakshir facilitate deeper penetration of the alkaline action, ensuring complete destruction of pigmented nevus tissue at all levels of the dermis.

Shankhadrava, a distilled formulation prepared from Shankha Churna, Kshara, Lavana, Tankana, Sphatika, and Navasadara, plays a crucial role in the therapeutic efficacy of the Arkakshira–Shankhadrava embedded Ksharsutra. Owing to its Tikshna, Sukshma, and Ksharana properties, Shankhadrava facilitates deeper penetration into the lesion and exerts a controlled chemical cauterizing effect. The alkaline constituents present in the formulation induce protein coagulation and cellular destruction, resulting in gradual necrosis and sloughing of the nevus tissue. Its Lekhana and Chedana actions aid in the complete removal of abnormal pigmented cells while preserving the surrounding healthy tissue. Additionally, the antimicrobial and wound-cleansing properties of Shankhadrava help prevent secondary infection and promote satisfactory wound healing.

When used in combination with Arkakshira, the formulation exhibits a synergistic effect, enhancing tissue destruction, minimizing recurrence, and producing favourable cosmetic outcomes with minimal scar formation.

6.2 Comparison with Conventional Treatments

Surgical excision, the gold standard for mole removal, carries risks of scarring, post-operative infection, and significant procedural discomfort. Laser ablation, while effective, is costly, requires specialised equipment, and can cause post-inflammatory hyperpigmentation, particularly in darker skin types, which constitute the majority of the Indian population. Cryotherapy may cause blistering, hypopigmentation, and is often associated with recurrence

for deeper lesions.

In this series, Arkakshir Shakhadrava embedded Ksharsutra demonstrated 100% complete regression with no recurrence, no scar formation, and minimal pain, comparing favourably with all existing modalities. The procedure is cost-effective, does not require sophisticated equipment, is easily performable in an outpatient setting, and is culturally well-accepted by patients seeking Ayurvedic care.

6.3 Transient Hypopigmentation

Mild transient hypopigmentation was observed in 3 cases (30%), likely attributable to the caustic action of Arkakshir on melanocytes at the periphery of the lesion. Importantly, all 3 cases showed complete resolution of hypopigmentation by the 3-month follow-up, suggesting that the effect is transient and due to temporary suppression of melanocyte activity rather than permanent melanocyte destruction. Topical application of Kumkumadi Taila (saffron-based Ayurvedic formulation) was prescribed to accelerate repigmentation in these cases.

6.4 Classical Literary Reference

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This shloka supports the Ayurvedic principles of Chedana (excision), Lekhana (scraping), and Ksharana (chemical cauterization), making it particularly relevant for the management of benign skin lesions such as Charmakeela and serving as an important literary reference for research involving its application in Mashak management and related conditions.

7. CONCLUSION

This case series demonstrates that Arkakshir Shakhadrava embedded Ksharsutra is a safe, effective, and minimally invasive Ayurvedic para-surgical modality for the management of Mashak (melanocytic nevus). The treatment achieved complete regression in 100% of cases, with no recurrence at 3-month follow-up, no scar formation, and high patient satisfaction. The procedure offers distinct advantages over conventional modalities in terms of minimal equipment requirements, cost-effectiveness, low complication profile, and alignment with Ayurvedic classical principles.

Larger randomised controlled trials are warranted to validate these findings, establish

standardised protocols, and compare outcomes with modern dermatological interventions. Histopathological confirmation of complete nevus cell clearance in future studies would further strengthen the evidence base for this procedure.

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