

AGNIKARMA FOR HYPERKERATOTIC LESIONS – A TWO-YEAR FOLLOW-UP CASE
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Article Received on 20/09/2024

Article Revised on 10/10/2024

Article Accepted on 30/10/2024

ABSTRACT

Introduction: *Kadara* (corn or clavus) is a hyperkeratotic lesion caused by continuous pressure or friction, leading to pain and skin thickening. Ayurvedic texts describe *kadara* as a *granthi* (nodule) triggered by *vata* and *kapha* dosha vitiation, commonly treated with *agnikarma* (thermal cauterization). This case report explores the effectiveness of *agnikarma* in managing a long-standing case of *kadara*. **Methodology:** A 22-year-old male patient presented with a year-long history of painful thickened skin lesions on the plantar aspect of his left foot. After clinical evaluation, the lesion was diagnosed as *kadara* (corn). *Agnikarma* was performed after obtaining informed consent. The patient underwent regular sterile dressings and was monitored for pain, lesion size, infection, and wound healing with post-procedure follow-up lasting two years. **Results:** *Agnikarma* successfully alleviated pain and reduced the hyperkeratotic lesion. **Conclusion:** This case demonstrates that *agnikarma* is an effective treatment for *kadara*, offering pain relief and preventing recurrence. The procedure is safe with no reported complications, making it a reliable modality for managing corns.

KEYWORDS: *Agnikarma*, Corn, *Kadara*.

INTRODUCTION

Kadara, which develops from a stone or thorn prick on the foot, is regarded as a *kolamatra granthi* (lesion of the size of *kola*).^[1] The first reference to *kadara* is found in *Sushruta Samhita Nidanasthana*. It is referred to as a *kolasthi sadrisha granthi*, or of *badara* seed size. It develops as a result from an injury caused by a stone or thorns. Similar *nidanas* are mentioned in *Gada Nigraha*, *Madhava Nidana*, *Bhavaprakasha*, and *Ashtanga Hridayam*. *Vata* and *Kapha* vitiation are caused by the aforementioned *nidana*. The *granthi* forms as a result of the aggravated *doshas* vitiating *medas* and *rakta*.^[2] According to the description, *kadara* is conical- *keela sadrisha*, that manifests with *ruja* (pain) and *srava* (discharge). It could have either *unnata* (raised) or *nimna* (depressed) central part. According to *Acharya Bhoja*, *kadara* may also occur in *hastha* (palms).^[3]

The thickened patches of skin called corns, or clavus, are caused on by periodic pressure and friction. They are a form of hyperkeratosis, a condition in which the skin's outermost layer thickens. Corns form as a result of constant pressure and friction, frequently brought on by

poorly fitting shoes or irregular foot mechanics. They are commonly observed in diabetic patients, athletes, the elderly, and people with foot abnormalities.^[4] The two types of corns are hard (*Heloma durum*) and soft (*Heloma molle*), with the latter frequently occurring in damp spaces between toes. Conservative footwear, orthotics, and keratolytic agents like salicylic acid are a component of the treatment. Surgical intervention may be required in extreme cases. Soft corns can be controlled by using antifungal or antibacterial powders and practicing good foot hygiene.^[5] Chronic pain and the possibility of ulcer development are noted complications, particularly for patients with diabetes. Moreover, secondary infections are possible, especially in soft corns.^[6]

Acharya Sushruta recommends *agnikarma* as a means of managing *kadara*.^[7] In today's *Ayurvedic* practice, it is also the most widely used method for managing *kadara*. Different *dahana upakaranas* (materials utilised for *agnikarma*) are mentioned depending on the *agnikarma* site in *Samhitas*. *Shalakas* composed of various materials, *sneha*, *guda*, and other *dravyas* like *pippali*

and *ajashakrit* are mentioned for the same.^[8] In addition to *agnikarma*, other practices used in *kadara* include *chedana karma* (excision), *kshara karma* (chemical cauterization), and the application of *lepanas* (ointments). Although the majority of these therapies, both *Ayurvedic* and otherwise, aid in reducing pain and tenderness, a full recovery from the ailment frequently encounters a roadblock. Therefore, rather than focusing solely on symptom relief, *kadara* treatment should also aim to prevent recurrence. *Agnikarma* could be regarded as the best *kadara* technique in this regard.

Ayurveda has a multi-modal approach to deal with a medical condition. Even though *kadara* is regarded as a *kshudra roga* condition, it can have an impact on a person's daily activities. Therefore, the *ayurvedic shalya karma* modalities, particularly *agnikarma*, aid in the management of *kadara* and the reduction of associated pain. This case illustrates *kadara*, its treatment with *ayurvedic* medicine and *agnikarma*, as well as its long-term follow-up and outcomes.

METHODOLOGY

Patient Information: A 22-year-old male patient, resident of Shimla Himachal Pradesh, presented with thickened skin lesions associated with pain on walking, on the plantar aspect of left foot, near the medial malleolus and heel, persisting for more than one year. According to patient, the lesion developed gradually over a time, but the pain was elicited few days back. Patient has a history of regular walking over uneven surface and rocky path. With these complaints patient approached Out Patient Department for seeking *Ayurvedic* treatment for the same.

Clinical Findings: The patient was subjected to a thorough physical and regional examination, detailed work-up for which was done based on the information provided by the patient. No pallor, icterus, cyanosis, clubbing or lymphadenopathy was noted on physical examination. No abnormality was detected on systemic examination of respiratory, gastrointestinal, central nervous and musculoskeletal systems. Left foot heel was inspected for lesion, swelling or redness. Two hyperkeratotic lesions were noted with approximate dimensions of 5mm*6mm and 7mm*5mm on the plantar aspect of left foot (heel area). Following clinical findings were noted:

1. Hard thickened (shiny polish) skin lesion was noted over left heel (plantar) region along with mild sign of inflammation present.
2. Scars: Absent.
3. Visible discharge: Nil
4. Thickened area visibly distinguished in colour with other part of skin.

Left heel was palpated to assess the tenderness and pain. Following findings were elicited:

1. Tenderness: Present
2. Palpable nodules: Absent

3. Temperature: Warm
4. Texture: Thick, Firm, Dry and Hard.

Mobility test of surrounding tissue: Surrounding tissue was noted soft and normal. No thickening of surrounding skin was noted.

Before therapeutic intervention, the patient was subject to haematology (complete blood count), bleeding time and clotting time, Random Blood Sugar, HIV, Hepatitis-B surface antigen (HBsAg) and Hepatitis-C virus (HCV) investigation, which were within normal limits and non-reactive, respectively.

Therapeutic Intervention

Since the patient initially approached *Ayurveda*, no other system of medicine was administered and *Ayurvedic* treatment was started. The condition was diagnosed as *kadara* (Corn/Calvus). After explaining the procedure, benefits and its complications; and taking informed consent for *Sangyahanana* (Anaesthesia) and *Shalya Karma* (Surgical Procedure), the patient was posted for *agnikarma* on 24.02.2022.

Pre-Operative Procedure (Poorva Karma)

Minor Operation Theatre was prepared for the procedure with the following materials required for the procedure:

1. *Shalaka - Panchalauha Shalaka*
2. Heating material - Gas Burner
3. Sterile Gloves
4. Antiseptic/Sterilizing agent - Betadine / Spirit
5. Anaesthetic Agent: Lignocaine 2% (0.5mg/kg)
6. Surgical blade 22/23 number
7. Syringe: 10cc
8. Gauze / Cotton Pad
9. Sterile Bandage
10. Aloe vera, *Ghrita* + Honey, *Haridra Choorma* for bandaging

Patient Preparation

1. Vitals were checked thoroughly.
2. Patient was made to sit in Minor OT on *Agnikarma* Chair in compete sterile environment.
3. Patient told to breathe and relax while the procedure.

Part Preparation

1. Patients left feet was kept on sterile table while seating on chair.
2. The affected foot was painted and cleaned properly with betadine and spirit in circular manner (both dorsal and plantar aspect till medial and lateral malleolus).
3. *Kadara* area was marked to be specific about the site.

Intra-Operative Procedure (Pradhana Karma)

1. *Sangyahanana* (Anaesthesia): lignocaine 2% ~ 10ml taken in 10cc syringe.
2. 7ml lignocaine 2% was infiltrated around both the corn in intradermal and subcutaneous region

(infiltration anaesthesia). Region checked for pain sensitivity.

- The hard thick skin on the marked area was excised with surgical blade.
- Pancha Lauha Shalaka* was heated on burner flame till it becomes red-hot.
- The heated *shalaka* was applied on the open affected area.
- It was done in circular manner and after each application Aloe vera was applied.
- Procedure was done till the *samyak dagha lakshana* (therapeutic burn) were seen in both the corn. Provided the surrounding tissue was kept safe and unharmed.

Post-Operative Procedure (*Paschat Karma*)

- Ghrita* + Honey + *Haridra choorna* was applied on the area and a sterile bandaging was done.
- Patient was shifted to recovery area and vitals were checked.
- Patient was informed to keep the area dry and clean.
- Patient was informed to not put pressure on the operated area.
- Patient was advised *Triphala Guggulu* two tablet twice daily, and *Gandhaka Rasayana* one tablet

twice daily, with warm water after food for seven days.

- Patient was advised for follow up and daily dressing and bandaging.

FOLLOW-UP AND OUTCOMES

From the date of *agnikarma*, i.e., 24.02.2022, patient was followed up to 24.02.2024 (**Figure 1 to Figure 21**). Sterile dressing and initial follow-ups were done on 0-1-2-3-4-5-6-7 days. Sterile dressing was done with betadine solution. Patient was monitored for reduction in pain (on VAS scale). The size of corn, any infection or complication were monitored and healing of wound was recorded. Though the wound was healed by 02.05.2022, but the patient was followed for the following two years until the wound from *agnikarma* had fully healed i.e., 03.02.2023, 24.10.2023 and 24.02.2024. During this time, no external or internal medication were suggested. The wound's figure with immediate and long-term follow-up status are included in this case report.

RESULTS

Kadara (corn) was effectively treated with *ayurvedic* medicines and *agnikarma*. The hyperkeratosis tissue was burned and destroyed by *agnikarma*, which also alleviated the pain associated with *kadara*.



Fig.1 24.02.2022



Fig.2 04.03.2022



Fig.3 05.03.2022



Fig.4 07.03.2022



Fig.5 08.03.2022



Fig.6 09.03.2022



Fig.7 10.03.2022



Fig.8 11.03.2022



Fig.9 12.03.2022



Fig.10 14.03.2022



Fig.11 17.03.2022



Fig.12 21.03.2022



Fig.13 26.03.2022



Fig.14 28.03.2022



Fig.15 31.03.2022



Fig.16 03.04.2022



Fig.17 13.04.2022



Fig.18 02.05.2022



Fig.19 03.02.2023



Fig.20 24.10.2023



Fig.21 24.02.2024

DISCUSSION

Numerous disease-management techniques, including *bheshaja karma* (internal and external medicine), *kshara karma* (chemical cauterization), *agni karma* (thermal cauterization), *shastrakarma* (surgery), and *raktamokshana* (therapeutic bloodletting), have been mentioned by *Acharya Sushruta*. Diseases like *arsha*, *arbuda*, *bhagandar*, *sira snayu asthi sandhigata vata vikaras*, and *kshudra rogas* have all been linked to the *agnikarma* approach. In order to address the *sthanika* (regional/local) involvement of *vata* in *vata-kaphaja* disorders, *agnikarma* therapy is result-oriented. It is an accessible and reasonably priced ambulatory treatment modality for a common man. Since *agni* is *ushna* (hot in potency), it acts against the characteristics of the *vata* and *kapha* doshas, alleviating all *vataja* and *kaphaja* disorders. The *samhitas* described *agnikarma* with this attribute in mind. *Vata* and *kapha* are the primary *doshas* responsible as the *nidana* of *kadara's* manifestation. Therefore, the use of *agnikarma* is justified in treating *kadara* without *paka* (suppuration) and preventing its recurrence in the future.

The amount of heat needed determines which material is to be used for *agnikarma*. According to available data, silver has the highest temperature of any metal (350 °C), while gold has the lowest (62 °C). The intermediate temperature of iron and copper is between 210 and 230 °C.^[9] Hence, there is utilised the *pancha lauha shalaka*. *Pancha lauha shalaka* is a combination of five metals namely, *Tamra* (copper), *Lauha* (iron), *Yashada* (zinc), *Rajata* (silver), and *Vanga* (tin). The metals are combined in a ratio of 4:3:1:1:1, hence act as an apt medium to provide optimum amount of heat required for the *agnikarma*. A study using a slightly different *agnikarma* procedure was carried out. In the mentioned study, initially *tila taila* was applied over the affected area and over that, *agnikarma* was done using a *pancha lauha shalaka*. Three sittings, separated by five days, were used for the study. The study's findings were superior to those of *agnikarma's* use of *pancha lauha shalaka* alone. It was discovered to be more economical than surgical excision. The patient experienced a reduction in both pain and swelling.^[10]

During the procedure, haemostasis is achieved, primarily through the cauterizing action of *agni* (heat), which plays a critical role in creating a bloodless field. This observation suggests that the thermal effects of *agni* may be instrumental in controlling bleeding during surgical interventions. Following *agnikarma*, the inflammatory phase of wound healing is initiated, typically lasting around three days. The cardinal signs of inflammation, such as redness, swelling, and warmth are very evident during this stage. Debridement and purification of the wound, both critical processes for preventing infection and promoting healing, marks the conclusion of the inflammatory phase. This indicates the natural progression of the wound toward recovery as the body's immune system responds effectively.

The proliferative phase, occurring between day 4 and day 21, is marked by the development of granulation tissue. The light pink colour of this tissue signifies active healing and the growth of new skin. The appearance of granulation tissue highlights the importance of adequate tissue perfusion and cellular activity in this stage after the *agnikarma* procedure. By the three weeks, the wound enters the remodelling phase. Here, the granulation tissue gradually transforms into scar tissue, with concurrent skin strengthening. This transition is crucial as it reflects the final stages of wound healing, where tissue regains structure and function. Over time, the scar fades, indicating successful wound closure and tissue restoration.

After the *agnikarma* procedure, internal medication was given in the form of *Triphala Guggulu* and *Gandhaka Rasayana*. When these medications are taken together, the anticipated analgesic effect and early wound healing are achieved. It paves the way as an alternative for analgesics and prophylactic allopathy medications. According to studies conducted on the formulation and its individual ingredients, *Triphala Guggulu's* constituents have analgesic, anti-inflammatory, and antimicrobial properties.^[11]

Acharya Sushruta's *agnikarma* therapy offers a cost-effective and accessible treatment modality that effectively addresses *vata-kaphaja* disorders while promoting rapid wound healing through a systematic

approach combining heat application and internal medications.

CONCLUSION

This case study concludes that *agnikarma* is a very effective treatment for hyperkeratotic lesions viz *kadara* (corn) and associated pain management. By burning and destroying the hyperkeratosis tissue, it produces positive results in patients who presents with *kadara*. There are reported no complications in this procedure. Thus, the study concludes that *agnikarma* is not only a successful treatment for hyperkeratotic lesions and pain, but also a preventive measure against their recurrence.

INFORMED CONSENT

Informed consent was taken from the patient for this study.

ACKNOWLEDGEMENTS

We would like to acknowledge the staff and consultant surgeons from the *Shalya Tantra* department at Shiva Ayurveda Hospital in Bilaspur, Himachal Pradesh, for their assistance with and facilitating the procedure.

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