



Case Study

**RAJATA SHALAKA AGNIKARMA - AN ETHNIC PERSPECTIVE TOWARDS POST-OPERATIVE RECURRENT CORN**

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**ABSTRACT**

As it first initializes, *Kadara* (corn) is not uncomfortable, but as it evolves, it might. Anti-inflammatory medications, corn cap, salicylic acid, and excision are the methods that modern science uses to treat corn. In spite of its high recurrence tendency, corn still lacks a satisfactory and long-lasting treatment. "*Kadara*" is associated with the state of "corn" in Ayurvedic medicine. For *Kadara*, *Agnikarma* (cauterization) has been recommended by Acharya Sushrut. As far as Ayurveda literature goes, the Sushruta Samhita is the first. There is a description of *Agnikarma* in the Vedic period as well. *Kshudra Roga*, *Kadara* is one who is said to have dealt with *Agnikarma* and *Shashtrakarma* effectively. This is meant to provide the patient with immediate relief, help them develop a straightforward and affordable management plan, and assess if combining these two ideas can prevent relapses. Therefore, in this study, after *Kadara Chedana* (corn excision), *Agnikarma* treated corn (*Kadara*) using *Rajata Shalaka* (a silver probe for thermal cauterization). For better outcomes and to prevent its recurrence, we have here used '*Bindu*' (dotted type of cauterization) in conjunction with corn excision on the raw wound area. This combination therapy resulted in cured management, as this case study illustrates. The procedure was completed in a single sitting, with dressing changes every 15 days for the next 30 days. Following the trial's conclusion, it was discovered that the *Agnikarma* procedure had a highly significant impact on lowering pain, discomfort, bleeding infections, healing times, and even recurrence rates up to a year later. The patient had excellent results showing no recurrence of corn when they were followed for up to a year to monitor for recurrence.

**INTRODUCTION**

Ancient Ayurvedic literature comprises the address to symptoms, pathophysiology, anatomy, and the ideal treatment plan from thousands of years ago. According to its treatment regimen, Ayurveda holds the key to several solutions for as-yet-undiscovered ailments.

The *Shalya Tantra* has been praised as the most significant Ayurvedic branch. The availability of dual treatment procedures, namely *Shastra Karma* (a surgical procedure) and *Anushastra Karma* (a para-surgical procedure), is what makes *Shalya Tantra* unique.<sup>[1]</sup>

Additionally, there are eight different types of *Shastra karma*, and *Anu-shastra karma* comprises *Agnikarma*, *Raktamokshana*, and *Kshara Karma*.<sup>[1]</sup>

A localized hyperkeratosis of the skin is called "corn disease."<sup>[2]</sup> It typically happens at the pressure site, for example. On the toes and soles, brought on by thorn pricks, poor shoe wear, walking on hard floor/surface, etc. Typically, there is a hard centre to the horny cuticle induration. At first, corn is not painful, but it can become so when it is rubbed.<sup>[2]</sup> Corn tends to grow back after being removed. Its deep central core extends to the dermal layers beneath the surface. "*Kshudra-roga*" provides an explanation of the disease "*Kadara*." This condition is thought to be caused by repeated injuries and friction to the sole from objects like stones and thorns.

In Ayurveda, corn is associated with the illness known as "*Kadara*."<sup>[3]</sup> Based on the symptoms described by Acharya Sushruta, which include *Keelavat*

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(a lesion with a central core), *Kathin* (hard), *Granthi* (knotted), *Madhyo nimna* (a central depression) or *Unnat* (an elevated central region), and *Kolamatra* (a plum seed) that is large, painful, and occasionally associated with *Srava* (discharge).<sup>[3]</sup> Some preventive measures that have been made possible by modern science include the use of soft shoes or soft pads at the sole's pressure point, the application of salicylic acid to corn, the use of central local applications like corn or carnation caps, and finally the removal of corn. According to Ayurvedic theory, *Kapha dosha* and *Vata* vitiation can lead to the development of *Kadara*. It is believed that the *Doshas* of *Vata* and *Kapha* play a significant role in the causes of *Shoola* (pain) and *Shotha* (inflammation). Cauterization, or *Agnikarma*, applies heat to the afflicted area.<sup>[4]</sup> With the properties of *Ushna*, *Tikshna*, *Laghu*, *Sukshma*, *Vyavayi*, and *Vikashi*, this heat helps to break the *Kapha*, reducing *Shotha*, and ultimately pacifying the *Vata dosha* to relieve *Shoola* (pain). One of the *Kshudra Roga* mentioned in Ayurveda is *Kadara*.<sup>5</sup> It causes the patient additional distress and interferes with daily tasks. According to historical accounts, a tumour the size of a *Kola* (jujube fruit) develops in the middle or at the end of the foot due to repeated injuries, friction from thorns, stones, etc., or an aggravated *Dosha* combination with *Meda* and *Rakta*.<sup>[5]</sup> The tumour is said to cause pain and exudates. This illness was classified as a surgical specialty by the ancient *Acharyas*. It is advised to perform excision and hot oil cauterization together. According to accounts from contemporary medical sciences, *Kadara* and corn are closely related. A corn is an area of hard-centered, localized hyperkeratosis brought on by excessive pressure. Histologically, it is made up of intact basal layers and keratin masses. It is frequently brought on by tight and ill-fitting shoes, which mostly affect the feet and toes. Usually, this affects the skin on the hands and feet. The modern surgical system uses a variety of techniques, including chemical cauterization, laser surgery, and cryotherapy.<sup>[6]</sup> None of these procedures are without recurrences and none are producing good results. In addition to recurrence, other common observations include bleeding, pain, and infections following excision. *Shalya Tantra* is essential to Ayurveda for its instant application of all *Shastra* and *Anushastra karma*. As stated by Acharya Sushruta in "*Ashtavidha Shastrakarmeeya*" regarding the *Chedana*, surgical excision is one of the treatments for *Kadara*; however, the recurrence rate is higher when this treatment is used alone. *Anushastra Karma* is a unique area of medicine. These are distinctive methods for both surgical and non-surgical condition management. *Agnikarma* is one of the gold standard treatments for

corn in *Anushastra karma*. As our *Acharyas* have explained, *Agnikarma* and *Chedana* (the surgical removal of corn) are two of the unique Ayurvedic techniques that are used in conjunction to prevent recurrence.<sup>[7]</sup>

*Agnikarma* was chosen for this study because, theoretically, its direct heat should help better prevent recurrence by destroying any remaining corn tissue. In addition to this, it aids in bleeding control. Because *Agnikarma* blocks the pain pathway, leading to reduction in its sensation.<sup>[8]</sup> As a sterile procedure, *Agnikarma* itself reduces the chances of infection.

Concerning *Kadara* treatment plan, Acharya Sushruta and *Dalhana* stated that *Agnikarma* should be performed and the affected lesion's base ought to be cut off. It appears that this combined therapy works better at bringing about immediate relief. The illness does not recur if everything is done correctly. This case study focuses on a single corn patient that underwent combination or fusion *Agnikarma* at the site of the raw wound after the corn was removed. The patient was then monitored daily for a year to ensure there was no recurrence of the condition.

#### AIM

To validate *Rajata Shalaka Agnikarma's* efficacy following the removal of corn contingent on the corn's recurrence.

#### Case Report

A 57-year-old female patient concerning *Kadara* (corn), arrived at the outpatient unit of the Shalyatantra Department in pain and with an enlarged, raised swollen area on the dorsal aspect of her right sole from wearing harsh, hard shoes. It was revealed by her that corn had been removed from the same spot twice, three and seven months ago. Apart from the patient's daily habit of walking barefoot in the garden, there was no prior history of severe trauma. Prior to stepping to visit us, the patient had had two operations, both of which involved removal of corn. Clinical examination results demonstrated that the patient had recurrent corn at the right sole.

#### Assessment

**Classification and Categorization:** By classifying and grading the patients in the clinical study based on the measurement scale and assessment criteria applicable to each item, the results were clearly separated. Finally, the complete assessment was presented. Evaluation Matrix is required to determine the severity of any problem. Using different grading schemes was essential. The degree of improvement and suffering was assessed using the following grading system for the different parameters that were selected.

**Table 1: Evaluation and parameter determination for corn appraisal<sup>[9]</sup>**

Parameters	Gradation	
<b>Pain</b>	Grade 0	Nil - Absence of pain /no pain.
	Grade 1	Mild - Easily ignored pain gets in the way when walking.
	Grade 2	Moderate - The majority of the time, pain was present and required continual care.
	Grade 3	Severe - Completely incapacitating pain.
<b>Discomfort during walking</b>	Grade 0	Not uncomfortable when walking
	Grade 1	Discomfort when activity.
<b>Tenderness</b>	Grade 0	Absent
	Grade 1	Present
<b>Induration</b>	Grade 0	Absent
	Grade 1	Present
<b>Size of the wound after excision</b>	Grade 0	No wound
	Grade 1	Radius measuring from 0.5cm - 1cm
	Grade 2	Radius measuring from 1.1cm - 2cm
	Grade 3	Radius measuring more than 2cm

## MATERIALS AND METHODS

Materials utilized in the current study involves:

**For Agnikarma:** Rajata shalaka, Gas Stove, Triphala decoction, Shatadhauta ghrita.

**For Excision of corn:** Xylocaine test dose, Inj. TT, syringes, sterile drapes, povidone iodine solution 10%, gauze pieces, Sponge holding forceps, Allis Tissue holding forceps, scalpel with 15 no. blade, roller bandage.

### Methodology

**Therapy Tactics:** Following written informed consent and education about the procedure, the patient was brought to minor operating room and given the necessary supplies, it included a test dosage of xylocaine and Inj. TT. The right sole's cornified area was thoroughly cleaned using a povidone-iodine solution. Then, xylocaine is injected to the concerned area, and corn was grabbed using Allis tissue-holding forceps. An elliptical incision is made precisely at the

boundaries of the cornified area using a scalpel. Subsequently, the portion was excised from its base. Through the base of the removed portion, there was indeed active bleeding as well as no induration.<sup>[10]</sup> A gas-powered stove was employed to heat the *Rajata Shalaka*. Following that, *Agnikarma* was performed over the surgically created raw wound until *Samyak dagdha Lakshana* were noticed in 'Bindu' type (a dotted cauterization technique) using the *Shalaka* tip. Measures were taken to avert the signs of *Atidagdha* and *Asamyakdagdha*. A trio of findings were made: the raw wound was darkly coloured, haemostasis was achieved, and the wound was narrowed. After that, the region was anointed with *Shatadhauta ghrita*, sterile gauze was applied, and a roller bandage was tied. The routine of alternate day dressing commenced.<sup>[11]</sup>

**Safety:** The patient was instructed to change their dressing every day and to stay out of the water.



Corn on right foot plantar surface



Rajata Shalaka Agnikarma on raw wound site after excision of the corn



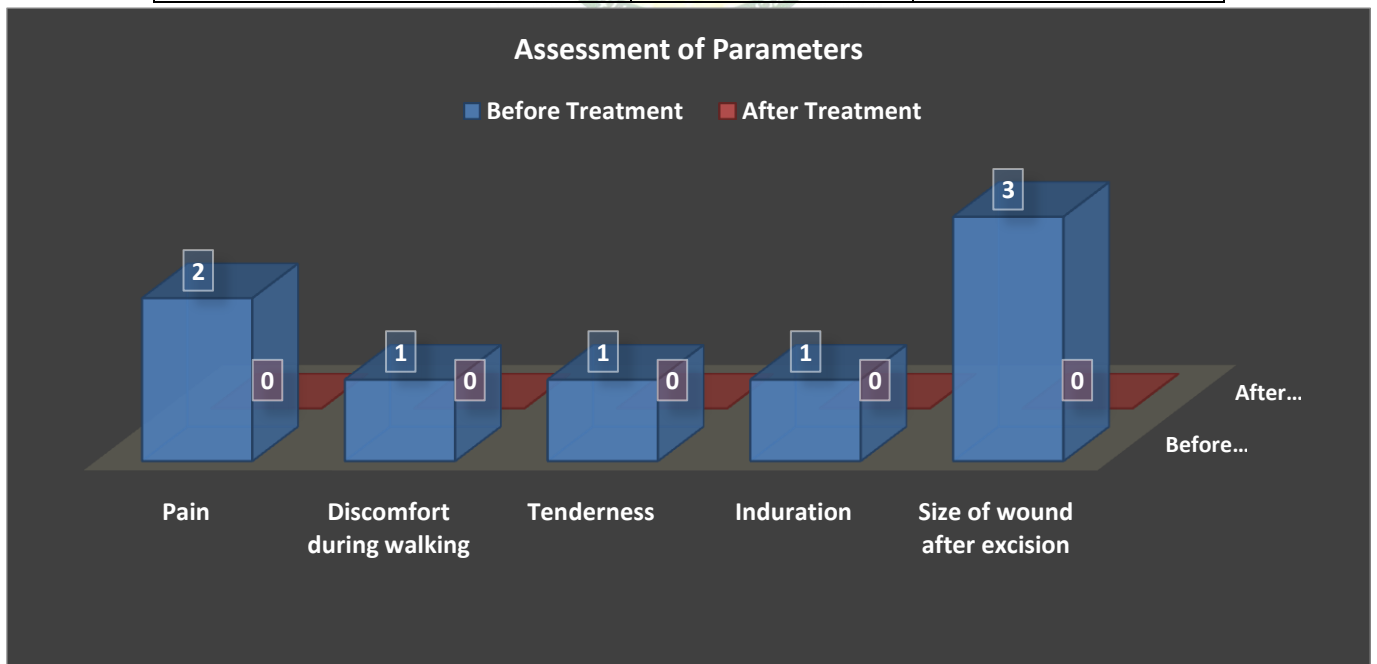
After healing of corn

**OBSERVATION & RESULTS**

Observations and results were based on the findings of assessment parameters that are mentioned below.

**Table 2: Observation according to the parameters in before and after treatment phase**

Parameters	Before Treatment	After Treatment
Pain	Grade 2	Grade 0
Discomfort during walking	Grade 1	Grade 0
Tenderness	Grade 1	Grade 0
Induration	Grade 1	Grade 0
Size of the wound after excision	Grade 3	Grade 0



Graph 1 represents the comparison between assessment of parameters on before and after treatment.

## DISCUSSION

Since Ayurveda is a valid medical science, its existence is based on the most up-to-date scientific research. This study aimed to review the current literature, taken into account more recent theories, and assess the relative merits of each in *Kadara*.

In order to achieve haemostasis and prevent future recurrence, we applied the *Chedana* procedure (corn excision) in *Vritta* manner (circular incision),<sup>[12]</sup> as described by Acharya Sushruta in types of incisions on hand and foot diseases followed by *Agnikarma* with *Rajata Shalaka* at raw wound area.<sup>[13]</sup>

Acharya Sushruta provides an explanation of the disease "*Kadara*" in "*Kshudra-roga*."<sup>[14]</sup> He claims that "*Kshudra Roga*" is a disease with a straightforward pathology that is extremely challenging to treat. The primary culprits in the pathophysiology of *Kadara* are *Dosha*, *Meda*, and *Rakta*.<sup>[14]</sup> Acharya Sushruta states that *Agnikarma* should only be used in cases where *Bheshaja*, *Kshar*, and *Shastra chikitsa* are unable to cure the patient.<sup>[15]</sup> This is because *Agnikarma* is a sterile procedure that prevents secondary infections at the surgical site and therefore has no chance of recurrence. Since only *Agnikarma* therapy possesses the ability to eradicate pathology rooted in the deeper structure. Having the properties of *Ushna*, *Tiksha*, *Sukshma*, *Vyavai*, *Vikasi*, and *Pachana gunas* of *Agni*, *Agnikarma* is the only therapy that can eradicate skin hyperkeratosis, as even contemporary science has noted that the central core of corn reaches into the deeper layers of the dermis.<sup>[16]</sup> *Vata* and *Kapha Doshas* are also pacified by *Agnikarma*. *Vata* and *kapha* are the primary *Doshas* accountable for the manifestation of the *Nidana* of *Kadara*. *Agnikarma* relieves vitiated *Vata*, which in turn reduces pain. Reducing the *Sheetha Guna* of *Vata* is aided by the *Ushna guna* of *Agni*. Since *Agnikarma* is also a *Swedana karma*, *Swedana* can reduce symptoms and facilitate healing, ensuring that the lesion heals completely and doesn't recur.<sup>[17]</sup> Heat promotes vasodilatation, which increases cellular nutrition and speeds up the healing process. It also improves local circulation and tissue metabolism, lessens pain, and enhances inflammation. By lowering *Kapha*, the *Agni's laghu* and *Ushna guna* help to relieve the *Shrotorodha* and *Kandu*.<sup>[18]</sup> For *Agnikarma*, the micro-organisms are also killed by the heat since the heated *Shalaka* is kept over the excised portion. It burns some healthy tissues in addition to the unhealthy ones, preventing recurrence. The production of new, healthy tissue may be aided by increased circulation and *Dhatwagni* activation.<sup>[19]</sup> *Shatadhauta ghrta* also has *Sheeta*, calming, and wound-healing properties. Due to its seta (cold potency) *Veerya*, it acts quickly to relieve burning sensations and shield against secondary infections.<sup>[20]</sup>

We opted for *Agnikarma* with *Rajata shalaka* due to the *Rajata* (silver) qualities—such as *Sheeta veerya*, *Vatapittaghna*, *Lekhana*, *Medoghna*, and *Rasayan*—are totally at odds with those of the *Samprapti* of *Kadara*.<sup>[21]</sup> Additionally, its highest thermal conductivity among all the metals available makes it a unique study that aids in gold standard treatment plan for corn.

Therefore, following the removal of corn, continuing the general *Agnikarma* actions with *Rajata shalaka* aids in the full treatment of the illness with no recurrence.

## CONCLUSION

We draw the conclusion that *Agnikarma* with *Rajata Shalaka* following corn excision in the management of *Kadara* (recurrent corn) is extremely successful and avoids recurrence. Following the procedure, normal foot movements were noted with no adverse consequences. Compared to other forms of therapy, this one is less expensive and much simpler to implement. Therefore, *Kadara* (recurrent corn) can benefit greatly from the adaptation of this combined treatment module.

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