

# EFFECT OF *PUTIKADI PRATISARANEeya KSHARA* POST *CHEDANA KARMA* AS THE MANAGEMENT OF *KADARA* (FOOT CORN)

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**Abstract-** *Kadara* is a *kshudraroga* which is characterized by hard and thickened local skin, largely confined to the sole, as well as palm. Even though the disease *kadara* is not a life-threatening condition, but makes the life miserable. Aetiological factors include injury due to the thorn prick, stone, cut, friction, pressure or wearing ill-fitting and tight shoes. *Kadara* described in Ayurveda can be correlated to corn foot in western medicine. The current managements are unsatisfactory due to great chances of recurrence. According to Acharya Sushruta excision followed by cauterization is the treatment protocol. *Ksharakarma* is a chemical cauterization can remove dead and unhealthy tissue from the site. The antioxidant action by *putikadi kshara* in wound promotes wound healing after excision of corn.

**Keywords:** Chedana karma, Corn foot, Kadara, Pratisaraneeya kshara, Putikadi Pratisaraneeya kshara.

## INTRODUCTION

*Kadara* is a disease of localised hardened layers of skin in soles and palms developing as a response to friction or continuous pressure. *Kadara* is known by term “corn” in western medicine<sup>1</sup>. The incidence of corns on the feet has been reported to be ranging from 14% to 48%<sup>2</sup>. They have been reported to affect older age groups with a slight female predominance due to wearing of narrow shoes. The elderly are also subject to loss of protective fat pad cushioning called fat pad atrophy, which can accelerate the incidence of painful corns. Acharya Sushruta has explained the disease *kadara* in *kshudra roga*, which are diseases having simple pathology, but very difficult to cure. *Kadara* is painless to start with, but gradually progresses to pain and tenderness on walking and standing. Repeated injuries due to the friction of the sole with thorns or stones results in *kapha – vata dosha* elevation. The elevated *dhatu* mixed with *meda- raktha* giving rise to keratinization of the sole. The keratinized mass presenting with symptoms of pain is termed as *kadara*<sup>3</sup>.

Corns are primarily diagnosed on clinical presentation. On inspection, the lesion appears to be flesh – coloured, dry tissue with a whitish center called the core<sup>4</sup>. These signs simulate Sushruta’s explanation of *kadara* as *keelavat* (lesion resembling a *keela*), *kathina* (hard), *granthi* (knotted), *madhyo nimna* (depressed at the center) or *unnata* (elevated in the center), *kolamatra* in size, tender and sometimes with *srava* (discharge). On palpation, a horny induration of the cuticle with a hard deep central core with extensions into the deeper layers of the dermis. The important criteria in differentiating corns from plantar warts is that in corns, the plantar skin lines may be observed with the lesions, unlike plantar warts. Furthermore, if the physician exerts a digital pressure perpendicularly to the plantar corn, the later will meet the bony prominence, elicits pain. Usually, corns are located over a bony prominence. They are most found on the dorsum of the toes, in the last interdigital web space, as well as on the soles of the feet. Due to overgrowth and further thickening of keratin, corns can grow and cause severe pain on ambulation. The genesis of corn is due to proliferation of all epidermal layers (acanthosis), including the stratum corneum, with retention of their nuclei (parakeratosis), indicating premature differentiation. Microscopically, the granular cell layer may be diminished or absent. The dermis may often show dense fibrous tissue with hypertrophied nerves and scar tissue may extend to the subcutaneous fat<sup>4</sup>.

Preventive measures include use of soft shoes or soft pads at pressure point of the sole. Conventional strategies for corn includes local application of salicylic acid and use of corn caps. Surgical management involves excision of corn. Corn tends to recur even after excision<sup>5</sup>. But application of *Putikadi pratisaraneeya kshara* after excision of corn helps to remove complete dead tissue from the wound and also promote wound healing as *kshara* has *chedana*, *bhedhana*, *lekhana*, *sodhana*, *ropana* properties<sup>6</sup>. *Ksharakarma* is the important *anusastrakarma* mentioned by Acharya Sushruta<sup>7</sup>. The effect of *putikadi pratisaraneeya kshara* in wound after excision of footcorn has been studied.

**CASE REPORT**

A 30 year old male who was working as security guard came to Shalyatantra OPD on 12/8/2023. Patient complained pricking type of pain and hardness on anterior aspect of right sole since 3 months. Had a whitish hard tissue on right sole. As part of his occupation he has to stand for long periods of time and continuously worked while standing on rough surfaces. The pain was aggravated by walking without footwears. Patient does not suffer from any other co -morbidity . On general examination pain was very high. Bowel habits and micturition are normal. He usually takes mixed food and have good appetite and sound sleep. On examination hyperkeratinised tissue with severe tenderness and hardness noted at 1<sup>st</sup> and 2<sup>nd</sup> interdigital space of anterior aspect of right sole. He has no discharge from that area and patient was afebrile. Finally, the patient was diagnosed as a case of footcorn and can be correlated to *kadara*.

**TREATMENT PROTOCOL**

Excision followed by *Putikadi pratisaraneeya ksharakarma* → *vranaropa*

**SURGICAL INTERVENTION**

**Poorvakarma** : Informed consent was taken. Blood investigations (on 12/08/23) were within normal limits.

**Pradhanakarma** : Complete excision of corn had been done. *Putikadipratisaraneeya kshara* applied for *vaksatamatrakala*. Followed by *kshara* , apple cider vinegar applied for neutralizing excess action of *kshara*.

**Paschatkarma** : Wound was packed with sterile gauze pad. Suggested daily dressing with *Jatyadikerataila* upto 14 days

**Details of internal medication**

Type of therapy	Name of formulation	Dosage
Internal usage	<i>Triphalaguggulu</i> tab	1- 1 – 1

**Follow up**

Parameters	0 <sup>th</sup> day	7 <sup>th</sup> day	14 <sup>th</sup> day	28 <sup>th</sup> Day	42 <sup>nd</sup> Day	90 <sup>th</sup> Day
Pain (VAS scale) <sup>8</sup>	6	2	0	0	0	0
Tenderness <sup>8</sup>	2	2	1	0	0	0
Wound healing (PUSH tool 3.0)	9	6	4	3	0	0



## RESULT

Pain and tenderness of patient reduced drastically. The wound was healed very quickly. Patient could walk even without soft footwear.

## DISCUSSION

*Kadara* is a disease of localised hardened layers of skin in soles and palms developing as a response to friction or continuous pressure. According to Acharya Sushruta, *utkartana* (excision) followed by *tailadahana* is indicated as treatment protocol. This procedure is helpful for wound healing due to *sookshma guna* of *taila*. But this is a cumbersome and painful procedure. The lag in healing also remains as a lacuna in the successful outcome of this protocol. It is at this juncture, the idea of subsequent application of *kshara* post *utkartana* of *kadara* popped up, as *kshara* is *vranaropaka*. *Kshara* is an important *anusastrakarman* which has *sookshma*, *sodhana*, *lekhana*, *ropana*, *soshana* and *stambhana* properties. It has an added advantage of *krimi-ama-kapha-kushta-visha-medohara*. *Pratisaraneeya kshara* can remove remaining dead tissues from the wound after excision and promote healing of wound. It can prevent the recurrence of the disease. Hence *pratisaraneeya kshara karma* post *chedana karma* might be the ideal choice in *kadara* management. The principal drug chosen for *kshara nirmana* is *putika* (*Holoptelia integrifolia*). *Putika* has *ropana* and *stambhana karma* due to *tikta kashaya rasa*<sup>9</sup>. The adjuvants needed for *kshara* preparation are *sudhasarkara* and *chitraka*. *Sudhasarkara* ( $CaCO_3$ ) can increase the alkalinity of *kshara* and *chitraka* (*Plumbago zeylanica*) can enhance the *teekshnata* of *kshara*<sup>10</sup>.

Excision (*chedanakarma*) is an important procedure in corn management. Maximum dead tissue was removed by complete excision. It helped to remove foreign body from the site. Then the remaining dead or unhealthy tissue was removed by *pratisaraneeya ksharakarma*. Probable mode of action by application of *pratisaraneeya kshara* could be the anti-inflammatory action or an any drug having an anti-inflammatory activity may show prohealing effect. A wound will initiate inflammation since the wound is basically caused by break in the continuity of the soft parts. This in turn stimulates the production of free radicals leave the cells and enter the extracellular space where anti-oxidant protection remains weak. Then the current wound is so succiptible for any abnormalcy due to production and act of free radicals. Further it could damage healthy cells, inhibit mycofibroblast proliferation and thereby retard the healing process of a wound. The anti-oxidant action of drug helps to scavenge extracellularly released free radicals without interfering in the intracellular peroxidation of bacteria within the phagosome. Thus drug helps in acceleration of wound healing process.

The internal medicine *Triphalaguggulu* is also a wonderful antiinflammatory drug. It has *vranaropaka* property. It also leads to a reduction in pain associated with the wound. *Jatyadi kerataila* used for daily dressing. Ingredients present in *Jatyadi kerataila* are anti-septic, anti-bacterial, anti-fungal and has rejuvenate capabilities. When it applied locally, it destroys the microbes and aids in fast recovery from the wound. The wholesome effect of all drugs gave good result.

## CONCLUSION

Attempts to manage wound after excision of footcorn with application of *Putikadi pratisaraneeya kshara* was studied. Observations proved significant symptomatic relief and quick healing. There was no recurrence also. This method is effective and economical feasible. It can practise as an OPD procedure, hence the best option to opt for foot corn management.

## INFORMED CONSENT

Informed consent has been provided by the patient to publish the case report and image.

## LIMITATION OF THE STUDY

This is a single case study. Hence more number of cases needs to be subjected to study for validation.

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