



Case study

A plantar corn OPD-based Agni Karma (Ayurvedic therapeutic burn) intervention

Dr. Shruti Sharma,
MD (Kayachikitsa)
Private Practitioner

Abstract

A corn is a uniquely formed callus of dead skin that develops on the toe's smooth or glabrous surface. Due to pressure on the nerves, it rubs against the surrounding tissues and produces excruciating pain when touched. Plantar corns are difficult to treat medically and require surgery because they are so painful. Since the rate of recurrences is as high as with conservative care, surgery is rarely necessary. The goal of treating Kadara is to have Snigdha Agni Karma and Shastra Karma remove the hyperkeratosis lesion. Here, we illustrated an OPD-based, straightforward, and efficient ancient treatment for corns that was proven to be quite helpful. It was detailed in the Samhita.

Keywords: *Agni karma, footcare, kadara , plantar corn, shastra karma.*

Introduction

A localized area of skin that has swollen or hardened is referred to as callosity in French. A corn or clavus is a well-defined area of skin hyperkeratosis with a smooth, dry, and slightly concave surface that is brought on by intermittent direct pressure applied to a small area(1,2). It is conical in shape and can range in size from 1 mm to 2 cm. It is made up of a wedge-shaped portion of compressed hyperkeratotic stratum corneum, with the cone's base pointing toward the skin's surface and the apex pointing inward. Due to pressure on the nerves, it rubs on the surrounding tissues and causes excruciating pain when pressed(3,4). Soft corns between the toes and hard corns on the exposed plantar or dorsolateral side of the tiny toe are the two basic types of corns. Plantar corns are difficult to treat medically and require surgery because they are so painful. However, if there are any underlying orthopaedic issues, they should be resolved before surgery(2,3,5). The Samhitas' description of kadara can be closely compared to skin lesions brought on by hyperkeratosis. The goal of treating Kadara is to remove the hyperkeratosis lesion using both Shastra Karma and Snigdha Agni Karma. Here, we present a Samhita-based traditional technique of snigdha agni karma and shastra karma (excision) in corns that has been shown to be very successful and straightforward.

Case Presentation

A 22-year-old male patient visited our outpatient clinic with a complaint of a painful corn on the right sole and an increased cystic bulge on the dorsal portion of the right sole near the heel as a result of wearing hard and rough shoes. Except for the patient's daily cricket practice, there was no history of physical trauma. Before coming to see us, the patient had a history of repeatedly excising raised layers of corn. Clinical examinations led to the diagnosis of the patient as having

right sole corns. The heel of his right sole had a roughly 2 x 2 cm big hyperkeratotic hard calus, which was discovered during inspection. After rigorous evaluation and investigation, Panchadhatu shalaka chose the patient for Agnikarma. (Fig no. 1)

Figure 1: Corn of 2-4 Cm At Right Sole



Materials and Methods

Materials: Panchadhatu shalaka, Panchaguna taila, Kumari sva-rasa, Haridra churna, Gas Stove, Triphala decoction, surgical blade no. 15, Gauze pieces, Sponge holding forceps, and Artery forceps are among the supplies utilized. (Fig no 2)

Figure 2 : Material Required For Agni Karma (Therapeutic Cautery)



Procedure

Before surgery, the patient was instructed to follow a Snigdha and Pichchhila diet on the day of Agni karma. The patient's informed consent was obtained. Triphala Kwatha was used to paint the patient's local area. Shalaka was cooked for roughly 5 to 10 minutes, until it was red-hot (fig. 3).

Figure 3 : Heating *Panchadhatu shalaka* till red hot**Pradhan karma (operative procedure)**

After washing with triphala decoction, the corn was given a massage with Pancha Guna taila Red Hot Pancha dahtu shalaka. With a sterile surgical blade size no. 15 in between, the hyperkeratotic tissue surrounding and covering the corn region is removed. After the aforementioned method, the corn's central core or kernel is more clearly apparent. Reheated and placed to the lesion once more was the shalaka. When the *Samyaka Dagdha Lakshanas* were noticed, the cauterization (*Dahana*) procedure was terminated. As a result, the entire corn bed is removed. (Fig no. 4)

Figure 4 : Application of hot *shalaka* over corn**Precaution:**

The patient is informed that he should notify medical personnel right away if he has pain or an increase in pain. If the operation is pushed too deeply into the tissue, it will be stopped right once since it could cause significant pain, profound tissue damage, and a deep incision that might not heal right away.

Pashchat karma (Post operative)

To prevent burning, Aloe Vera pulp is administered after each contact of Agni karma. Following Agnikarma, Haridra Churna (powder of *Curcuma longa* L. rhizome), which has *vrana shodhana* and *Ropana* (wound healing power), was used for dusting. (Fig no 5).

Figure 5 : Application of *Haridra Choorna* after *Agni karma*

Agni Karma is finished, Triphla Ghrita is administered, and then a pressure bandage is placed over the wound. The patient is then told to wear soft shoes. None of the patients experienced a recurrence of the lesion, and no patient complained of pain when walking or resting near the enucleated corn.

Frequency of *Agni karma*:

A total of 1 sittings of *Agni karma* was done .

Observation & Results :

After 7 days patient reported with very minimal pain & reduction in lesion dimensions. **(Fig no 6)**

Figure 6 : Healed corn after 7 days of *Agni karma*

Advantage of procedure

This OPD method is straightforward and secure. As the entire cob of corn including the central core is cauterized and removed, the likelihood of recurrence is decreased. A single session can be used to remove several corns.

There is instant pain alleviation, no need for rest, and the patient can get back to work right once. This procedure is less intrusive, messier, and causes little blood loss. Since local anesthesia is not necessary, the discomfort from its injection into the plantar or palmar site is also gone. No surgical experience is necessary, and only a few surgical instruments are needed. Most importantly, this is a very cost-effective solution for corns.

Disadvantages

Very large corns cannot be removed with this procedure. We come to the conclusion that this method immediately soothes the patient's pain and gets rid of the corn to stop recurrences. Use of this method is for minor palmar and plantar corns.

Discussion

Hyperkeratosis, a typical physiological reaction to persistently applying too much pressure or friction to the skin, is what causes corns and calluses. High levels of exertion, improper footwear, and aberrant foot mechanics all contribute to pressure and friction that develops into corns and calluses.

Callosities may arise as a result of the following factors:

Extrinsic variables:

- Subpar footwear A snug shoe Shoe irregularities Open-toed footwear
- Athletes' level of activity

Intrinsic factors

- Bony protrusions significant condylar projection fracture that fails to heal
- Improper foot mechanics a cavus foot Deformity of the toes (claw, hammer, mallet) first metatarsal is short. Lockjaw rigidus Transfer of the lesion from the adjacent metatarsal head's removal or osteotomy

The majority of lesions can be treated conservatively with the right footwear, orthotics, and, if required, routine paring. When the underlying mechanical forces are eliminated, the lesions typically vanish. Surgery should only be used when absolutely necessary to address the aberrant mechanical stresses, as it has a rate of recurrence that is as high as that of conservative therapy and its scars may cause the same problems. Therefore, treatment should not only address the symptoms (for example, by paring often or using keratolytic drugs), but also address the underlying mechanical reason.

Ayurvedic mechanism

One of the most notable subdisciplines of Ayurveda is Shalyatantra, which includes important treatments including Beshaja Karma, Kshara Karma, Agnikarma, Shastrakarma, and Raktamokshana.

In the classical literature, Kadara has been listed and described under the title Kshudra Roga(6,7,8). Madhava claims that this ailment is brought on by repetitive thorn, stone, and other object injuries to the sole(9). Acharya Sushruta's clinical characteristics are listed as Keelavat (a lesion with a central core), kathin (hard), granthi (knotted), Madhyo Nimna (depressed in the central), or Unnat (elevated in the central), Kolamatra (seed of a plum) in size, painful, and occasionally with Srava (discharge)(10). For the right care of Kadara, Agni Karma and Shastra Karma (surgical excision) have been mentioned(11,12,13). It has been said that Kadara is a Vatadosha Pradhana Vyadhi. Dosh, Dushya Meda, and Rakta are mostly caused by Vata and Kapha in the pathogenesis of Kadar.

When Vata and Kapha doshas are seen to be involved locally in the disease, agni karma has proven to be beneficial among all parasurgical techniques(14). In this instance, a panchadhatu shalaka (rod) is utilized, which is made up of the following elements: vanga (tin), yashada (zinc), rajata (silver), yashada (zinc), and tamra (copper). Agni is the finest remedy for shoola (pain), according to Acharya Charaka (15).

Agni's Ushna Guna aids in the efficient removal of Avarana and stabilizes Vata's motion, relieving Shoola. By accelerating metabolic processes, which results in a decrease in the concentration of pain-inducing toxic metabolites, the application of local heat (thermotherapy) may be able to relieve pain and uncomfortable muscular spasm. The main method used to achieve this is an increase in local circulation. Accelerating the inflammatory response to resolution may initially make pain worse, but it will hasten the process of inflammation resolution.

Agni karma and Callus

According to the study, callused skin differs significantly from healthy plantar skin.(16) It was discovered that the callus was 2-3 times thicker (p 0.001) than the typical plantar stratum corneum. The surface area of the callus corneocytes was comparable to that of normal plantar corneocytes. Their density was reduced, but their volume was enhanced. The callused stratum corneum has more cell layers than normal stratum corneum due to increased cell proliferation and decreased cell density, which suggests that the cells in this layer are not as highly differentiated as typical plantar corneocytes(16). Given that they are not given enough time to fully develop, it is possible to hypothesize that the increased pace of cell formation in calluses contributes to the inferior cell differentiation. It's probable that Agni karma burned the plantar corneocytes, preventing them from proliferating and decreasing the likelihood of recurrence.

Pada Abhyanga (foot massage) to Prevent Reoccurrence:

The practice of daily Pada Abhyanga (foot massage) is advised. Massage feet with Ayurvedic vata hara oils to soften skin and stop corns from reappearing. Every day use of the herbal oil jeevantyadi yamakam is permitted. The lipid profile of the skin affects its ability to operate as a barrier by preventing water loss from the skin and shielding it from external chemical insults(17). The lipids, which play a number of activities, are expressed during corneocyte maturation.

Their multi-lamellar organization, which helps to the skin's water retaining and barrier function, allows them to regulate water permeability to prevent desiccation. They also aid in corneocyte cohesiveness in the stratum corneum(18, 19). They are found in the intercellular gaps. Mechanical harm to the skin can also cause a loss in barrier function (and hydration as a result).(20) If there is a connection between external loading and calluses, the distribution of the loads to the callused location may first have an impact on the skin barrier before changing chemical triggers.

Conclusion

On the first sitting, Agni Karma was found to be beneficial in reducing pain and enhancing walking ability. This procedure is less intrusive, messier, and causes little blood loss. It's probable that Agni Karma burns the plantar corneocytes, preventing them from proliferating and decreasing the likelihood of recurrence. It can also be avoided with proper foot care and comfortable footwear. A regular foot massage, or pada abhyanga, offers a clear preventative benefit.

References

1. Bennett RG. Lesions of the surface epidermis. Fundamentals of cutaneous surgery. In: Bennett RG, editor. 1st ed. St. Louis: The CV Mosby Company; 1988. p. 692-706.
2. Gibbs RC, Boxer MC. Abnormal biomechanics of feet and the cause of hyperkeratosis. J Am Acad Dermatol 1982;6:1061-9.
3. Silverskiold JP. Common foot problems: Relieving the pain of bunions, keratoses, corns and calluses. Postgrad Med 1991;10:112-4.
4. Pavithran K. Disorders of keratinization. IADVL Textbook and atlas of dermatology (Valia RG, Valia AR editors) 2nd ed. Mumbai: Bhalani Publishing House; 2003. Vol. 2; p. 799-846.
5. Arndt KA. Corns and calluses. Manuel of dermatologic therapeutics. In: Arndt KA, Bowers KE, Chuttani KR, editors. 5th ed. Boston: Little Brown and Company; 1995. p. 40-2.
6. Acharya YT, editor. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. Sushruta Samhita of Acharya Sushruta Nidana Sthana Reprint Edition. Ch. 13, Ver. 30-31; p. 322. 824.
7. Sastri HS, Bhisagacharya P, editors. Varanasi: Chaukhamba Surbharati Prakashan; 2010. Ashtang Hridayam of Acharya Vagbhatta Uttara Sthana. Reprint edition. Ch. 31, Ver. 31; pp. 889–956
8. Kumari A, Tewari P, editors. 1st ed. Varanasi: Chaukhambha Visvabharati Oriental; 2010. Yogratnakara of Acharya Yogratnakara, Part II; pp. 981–1360. Ch. 62, Ver. 26
9. Ayurvedacharya shreeyadunan-danaopadhyaya, Madhavanidanam Part- 1, Chokhamba Sanskruta Sansthana, Va-ranasi, 31st Edition, 2002, Adhyaya no.55, Kshudraroganidan, Sutra no.26, Page.no. 203.
10. Dr.Anantram Sharma, Sushruta Samhita Part- 1, Chokhamba Surbharati Prakash-an, Varanasi, 1st Edition, 2001, Nidan Sthan, Adhyaya no.13, Kshudrarogani-dan, Sutra no.31, Page.no. 558.
11. Acharya YT, editor. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. Sushruta Samhita of Acharya Sushruta Chikitsa Sthana Reprint Edition. Ch. 20, Ver. 23; pp. 479–824

12. Sastri HS, Bhisagacarya P, editors. Varanasi: Chaukhamba Surbharati Prakashan; 2010. Ashtang Hridayam of Acharya Vagbhatta, Uttara Sthana. Reprint edition. Ch. 32, Ver. 32; pp. 891–956
13. Kumari A, Tewari P, editors. Varanasi: Chaukhamba Visvabharati Oriental; 2010. Yogratnakara of Acharya Yogratnakara 1st ed Part II. Ch. 62, Ver. 92; pp. 990–1360.
14. Acharya YT, editor. Varanasi: Chaukhamba Surbharati Prakashan; 2012. Sushruta Samhita of Acharya Sushruta, Sutra Sthana Reprint Edition. Ch. 12, Ver. 3; pp. 51–824.
15. Acharya JT, editor. Reprint ed. Varanasi: Chaukhamba Prakashan; 2009. Charaka Samhita of Agnivesha, Chikitsa Sthana, Ch.25, Ver. 40; p. 132.
16. Thomas, S. E., Dykes, P. J. & Marks, R. Plantar Hyperkeratosis: A Study of Callosities and Normal Plantar Skin. Journal of Investigative Dermatology, 85, 394-397.
17. Madison, K. C. Barrier function of the skin: "La raison d'etre" of the epidermis. Journal of Investigative Dermatology, 121, 231-241.
18. Elias, P. M. & Friend, D. S. The permeability barrier in mammalian epidermis. Journal Of Cell Biology, 65, 180-191.
19. Elias. Et Al. Percutaneous transport in relation to stratum corneum structure and lipid Composition. Journal Of Investigative Dermatology, 76, 297-301.
20. Baroni, A.,Et Al. Structure And Function Of The Epidermis Related To Barrier Properties. Clinics In Dermatology, 30, 257-262.

