



CASE MANAGEMENT OF PLANTAR FASCIITIS BY AGNIKARMA IN AYURVEDA- A STUDY

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Abstract

The plantar fascia is thick connective tissue (*Snayu*) that joins the heel bone (*Asthi*) (calcaneal) to the toes, inflammation of that fascia is called plantar fasciitis. It mainly causes pain in the heel but stiffness and spasms may also be associated with that. According to *Ayurveda* vitiated *Vata* gets accumulated in a particular area and causes pain in that part,

Acharya Sushruta has mentioned symptoms of *Snayugat* vitiated *Vata* that is *Stambhan* (Stiffness), *Kamp* (Tremor), *Shool* (Pain), and *Akshep* (Spasm).

on the basis of symptoms and anatomical position, plantar fasciitis can be considered in *Snayu-Ashthi-Sandhi Ashrit Vikar*. *Snayugat Vyadhi* can be treated with *Agnikarma*. It was used in a case study to assess its efficacy in relieving pain and other symptoms. A 34-year-old lady patient complained of pain in the heel during walking with mild stiffness. After 4 consecutive weekly sitting of *Agnikarma* symptoms of the patient was relieved. She was able to walk without difficulty.

Keywords: *Agnikarma*, Plantar Fasciitis, Heel Pain

Introduction:

Plantar fasciitis is the common cause of pain in the heel, and biomechanical dysfunction of the foot is the most common aetiology of Plantar fasciitis. Excessive marching causes microtrauma in the fascia that results in damage to the calcaneal-fascial interface. That causes further pathology of inflammation in the plantar fascia leading to pain, stiffness, and joint movement restriction. ⁱ above mention reasons cause vitiation of *Vata dosha* in the Heel and Ankle joints.

However, Plantar fasciitis can be considered in *Snayu Ashti Sandhi Ashrita Vyadhi* of *Khudpradesh* (heel) and *Acharya Shushruta* has mentioned *Agnikarma* for *Snayu Ashti Sandhi Ashrita Vyadhi*.ⁱⁱ

It is estimated that approximately 1 million patient visits per year are due to plantar fasciitis.ⁱⁱⁱ Plantar fasciitis accounts for about 10% of runner-related injuries and 11-15% of all foot symptoms requiring professional care. It is thought to occur in 10% of the general population as well. It may present bilaterally in a third of cases. The prevalence of this condition increases due to the tendency to wear high-heeled and hard shoes, ill-fitting footwear, and strenuous activities, especially jumping, running and standing for long periods.^{iv, v}

The diagnosis is usually made on the basis of history and physical examination. Patients experience stabbing pain when they take their first step after getting out of bed, sitting or standing for a long time, and jumping.

The pain occurs mainly on the sole of the foot in the anterior aspect of the calcaneus but may radiate proximally in severe cases. Limping may occur and patients prefer to walk on their toes.

Initially, the pain decreases with ambulation or athletic warm-up but then increases throughout the day as activity increases.

Physical examination:

The pain of Plantar fasciitis can usually be reproduced by plantar medial calcaneal tubercle at the site of plantar fascial insertion to the heel bone. Sometimes the pain is directly below the heel bone.

Usually, laboratory studies and radiography are not needed in plantar fasciitis, however, tests may be used to investigate other causes of heel pain if suspected.

Many treatment modalities are present like icing, heat massage, NSAIDs, rest and activity modification, corticosteroid, botulinum toxin type A, splinting and shoe modification.^{vi}

Acharya Sushruta mentioned *Agnikarma* for the management of *Snayu Ashti Sandhi Vikar*. According to the above reference,^{vii} *Agnikarma* is used in this case to assess its efficacy in relieving pain and stiffness of plantar fasciitis.

A case report:

A 34 years old female having complaints of pain in the right heel for one-year, early morning stiffness and restricted movements of the right heel for 6 months, visited *Shalya Tantra OPD* of Shri Krishna govt. Ayurvedic College & Hospital Kurukshetra. The patient developed pain in the right heel getting up in the morning. Then she developed pain when standing after a long rest or when standing for a long time. Her problem was getting worst day by day. She had difficulty in walking. She had been taking analgesic medications for 2 months, but they did not provide complete relief. She had no history of trauma, diabetes, hypertension or any other serious illness

Examination:

The patient's vital signs were within normal limits. Systemic examination revealed no abnormal findings. Plantar reflex, knee and ankle pressures of both limbs were normal Local examination of the right heel revealed no swelling or redness. There was tenderness (grade 3) and the range of motion of the right heel was painful (Table 1)

Differential diagnosis: bone bruise, calcaneus bone injury, infection, neuropathic pains, osteomalacia Paget's disease, plantar fascia rupture, foot fracture. X-ray of right foot AP and lateral view observed within normal limits.

Diagnosis: According to history, symptoms and examination, it can be correlated with *Vatakantak* in *Ayurveda*.

External Treatment:

Agnikarma- At the affected area 4 sittings (at an interval of seven days up to 28 days)

· Duration-28 days · Followup- After 2Months.

Methodology:

The procedure of *Agnikarma* was explained and written consent of the patient was obtained.

Then affected part was cleaned with betadine and wiped with dry sterilized cotton gauze. Red hot *Panchdhatu Shalaka* (Probe made up of five metals - copper, iron, zinc, silver, tin) was used for making *Bindu vat Samyak Dagdh Vrana* (therapeutically burn spots). Proper space was kept between two *Vranas* (therapeutically burn spots). *Kumari Swarasa* was applied to it to relieve the burning sensation. Then *Haridra churan* was applied to it and the bandage was done. *Haridra* is mentioned as *Vranya Dravya*^{viii} in the text which has antiseptic, and antimicrobial properties, which help in the healing of *Dagdha Vrana*. The same procedure was repeated 4 times at the interval of 7 days. The patient was advised to apply the paste of *Haridra* and *Kumari Swarasa*

Table no.1: Gradation of tenderness

parameters	Grade
Nil	0
Mild tenderness, causing the patient to wince on digital pressure	1
Moderate tenderness, causing the patient to wince and withdraw on digital pressure	2
Moderate tenderness, causing the patient to wince and withdraw on digital pressure	3

Table no.2: Scores of Visual Analogue (VAS)	Grade
Parameters	
No hurts, happy	0
Hurts a just lil bit.	2
Hurts a just lil more	4
Hurts a just lil even more	6
Hurts whole lot	8
Hurts worst	10

Observations and Results:

Clinical assessment was done before and after treatment by relief of the pain using a VAS score, tenderness and walking capacity.

Before Treatment pain (VAS=8) and Tenderness Grade-3 was present. After the completion of the first sitting, the patient experienced some pain relief (VAS=6, Tenderness Grade- 2). After the completion of 2nd sitting, the patient got relief from early morning stiffness (pain reduced to VAS=4, Tenderness Grade-1.)

After the completion of 3rd sitting, the tenderness and restricted movements were relieved (pain reduced to VAS=2. Tenderness Grade-0) After the completion of the 4th sitting pain reduced to VAS=0, Tenderness Grade-0 and the patient was feeling comfortable during walking without any adverse effects. No re-occurrence was observed after 2 months of follow-up.

Sr. no.	Symptoms	BT	AT
1	Heel pain	VAS=8	VAS=0
2	Difficulty in walking	Stabbing pain during walking , can't able to complete rest the sole on ground.	Can able to walk properly without pain.
3	tenderness	Grade 3	Grade 0
AT- after treatment, BT- before treatment			

Discussion:

Vata Dosha is responsible for *Shool* (pain), *Stambha* (stiffness) and *Kaphanubandha* (association of *Kapha*) is responsible for *Shotha* (inflammation) in the heel.

Agnikarma is an important *Anushastra Karma* (Para- surgical Procedure) described in detail in the *Sushruta Samhita*. In describing the benefits of this procedure, *Acharya Sushruta* mentioned that it is easy to perform and effective for many incurable diseases without the disease recurring. *Agnikarma* is indicated for many diseases, including severe pain in *Asthi* (bones) and *Sandhi* (joints) *Pradesh*^{ix}.

Probable mode of action of Agnikarma:

In *Agnikarma* procedure, Physical heat from red hot *Shalaka* is transferred as therapeutic heat to *Twakdhatu* by producing *Samyak Dagdha Vrana*. The *Ushan, Tikshna, Laghu, Sukshma, Vyavayi, Vikashi and Ashukari* properties of *Agni* helps to remove the *Stroto-avarodha* (obstruction of channels), pacifies the vitiated *Vata- Kapha Dosha* and maintains their balance thereby removing the *Samprapti* (pathology).

After *Agnikarma*, the *Ushna* (hot) *Guna* of *Agni* pacifies the *Shita* (cold) *Guna* of *Vayu* and reduces the pain. *Acharya Charaka* described that *Agni* is the best treatment for *Shoola* (pain)^x. It reduces *Kaphanubandha* thereby relieving the *Shoth* (inflammation).

According to Ayurveda, every *Dhatu* (tissue) have its own *Dhatwagni* and when it becomes low, the disease begins to manifest. In this condition, *Agnikarma* works by giving off external heat, which penetrates the deeper *Dhatu*s (tissues) thereby increasing the *Dhatwagni*, which helps to digest aggravated *Doshas* and hence cures the disease^{xi}. The therapeutic heat increases blood circulation at the ankle joint, leading to the proper nutrition of the tissue. This induced circulation helps to flush away the pain, producing substances from the affected site ultimately reducing the local inflammation. Therapeutic heat stimulates the lateral spinothalamic tract, leading to stimulation of descending pain inhibitory fibres, causing the release of endogenous opioid peptide, which blocks the transmission of pain. In this procedure, the temperature at the applied site is increased which reduces nerve reflexes resulting in the relaxation of the muscle thereby causing a reduction of stiffness.^{xixiii}

Conclusion:

Agnikarma is an easy and cost-effective procedure that can be done at the OPD level. It causes alleviates *Vata* and *Kapha dosha* and is therefore helpful in reducing pain, stiffness and inflammation. From this case study, it can be concluded that plantar fasciitis can be effectively treated with *Agnikarma*. However, further clinical research with a larger sample size may be needed to further confirm its efficacy.

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