



## Case Study

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### ROLE OF BINDU DAGDHA TYPE OF AGNIKARMA IN MANAGEMENT OF VATAKANTAKA WITH SPECIAL REFERENCE TO CALCANEAL SPUR: A CASE STUDY

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#### ABSTRACT

Background: Calcaneal spur is a cartilaginous outgrowth at the joint margins of calcaneum, which later gets ossified. A calcaneal spur is one of the most typical causes of heel pain. Pain may aggravate on physical activities. In Ayurveda, the calcaneal spur can be correlated to vatakantaka, where vata gets accumulated in the joints of the feet producing pain. This condition can be effectively treated by agnikarma procedure. Bindu dagdha is one type of agnikarma based on akroti where therapeutic heat is applied in dot or pointed form. A 47-year-old female patient suffering from calcaneal spur in the right heel was treated with three sittings of bindu dagdha type of agnikarma. In the first sitting, she had partial relief of the symptoms like reduction in difficulty in walking, tenderness and swelling. At the end of the third sitting, she could walk without difficulty. Result & conclusion: In para-surgical procedures, agnikarma is considered superior as the disease does not re-occur. Agnikarma removes the srotovarodha and pacifies the vitiated doshas causing a reduction in pain. In the present case study, the bindu dagdha type of agnikarma has therapeutically given promising results in the pain management of calcaneal spur.

**Keywords:** Agnikarma, bindu dagdha, calcaneal spur, vatakantaka

#### INTRODUCTION

The word calcaneum or calcaneus in Latin means heel. It is the most prominent tarsal bone forming the prominence of the heel.<sup>1</sup>The calcaneum may develop spur – a cartilaginous outgrowth at the joint margins, which later gets ossified, resulting in heel pain. Pain around the spur region is the main symptom of the calcaneal spur. The spur located at the back or in the posterior region of the heel is called a dorsal or posterior calcaneal spur, commonly present with Achilles Tendinitis. A plantar calcaneal spur is located beneath the heel and is usually associated with plantar fasciitis. When the spur's apex lies on the medial tubercle of the calcaneus, i.e., within the origin of the plantar fascia, it results in a pulling effect which is of constant nature on the plantar fascia leading to an inflammatory response. The pain may aggravate on walking, running, lifting heavy weights, etc. Incidences of the posterior calcaneal spur were detected to be 13.1%, and that of the plantar calcaneal spur was 32.2%. Incidence of posterior calcaneal spur increased by female gender and age without any significant association with the location. Whereas, in plantar calcaneal spur, incidence increased by age, without any association with location and gender.<sup>2</sup> In Ayurveda, the calcaneal spur can be correlated with vatakantaka, which is one among the vata vyadhis. It is caused due to vitiation of vata as a result of excess walking, walking on irregular surfaces, excessive pressure in the ankle region, etc. In vatakantaka, vata

gets accumulated in the khudaka or joint of the feet producing pain in the feet.<sup>3</sup>

There are various treatment for this condition in Ayurveda, among which agnikarma plays an important role. Agnikarma is a para-surgical procedure which can be correlated with cauterization. Acharya Sushruta has mentioned the non-recurrence of diseases treated with agnikarma. Diseases which do not respond to bleshaja (medicines), sastra (instruments) and kshara (caustic alkali) are found to yield agnikarma.<sup>4</sup> It can be done in four methods – valaya (circular), bindu (pointed), vilekha (linear) and pratisarana (flat/scraping manner).<sup>5</sup> Materials like panchaloha shalaka, mruthika shalaka, and swarna shalaka are used for agnikarma procedures.

Agnikarma can be performed in vata disorders with intense pain in the skin, muscle, blood vessels, ligaments, joints and bones.<sup>6</sup> In this patient, horse-shoe-shaped bindu dagdha agnikarma was administered for plantar and posterior calcaneal spur.

#### Objective

- To study the effect of bindu dagdha agnikarma in the management of vatakantaka with special reference to calcaneal spur.
- To study the effectiveness of horseshoe-shaped bindu dagdha agnikarma in plantar and posterior calcaneal spur.

**CASE REPORT**

**Patient Information:** A 47-year-old female patient who is a homemaker was referred to the Outpatient Department of Shalya Tantra, Sri Jayendra Saraswathi Ayurveda College and Hospital, Nazarathpet, Chennai. She came with the presenting complaint of right heel pain associated with right knee joint pain. She also had difficulty walking, tenderness and swelling in the heel region. The pain increased with physical activities such as standing, walking and doing household chores.

**History of present illness:** The patient was well before three months. She gradually developed pain in the right heel region associated with knee joint pain. The pain aggravated on straining.

**History of past illness:** H/o corn in the right foot – 5 years back

**Surgical history:** H/o surgical excision of corn – 5 years back

**Family history:** No related history of family illness.

**Timeline:** A timeline of the patient's complaints and intervention is given in table 1.

**Table 1: Timeline with complaints and interventions**

Year	Complaints and intervention
2017	Corn in the right foot
2017	Surgery for corn in the right foot
29-01-2022	Pain in the heel region
09-02-2022	X-ray report revealed- Bilateral plantar and posterior calcaneal bony spur
16-03-2022	Increased pain in the right heel and knee joint
16-06-2022	Advised Agnikarma in the right heel region

**General Examination**

Height – 155 cm  
 Weight – 78 kg  
 BMI- 32.5  
 BP – 130/80 mmHg  
 PR – 98 bpm  
 HR – 86 bpm  
 RR – 14/min

The patient was also assessed with dasha vidha pariksha [Table 2] and ashtavidha pariksha [Table 3].

**Nidana:** Vatakara aahara and vihara like consuming ruksha aahara and excessive walking.

**Dosha:** Vata-pitta

**Dushyas involved:** Asthi

**Lakshanas:** Right heel pain associated with right knee joint pain

**Srotas involved:** Asthivahasrotas

**Rogamarga:** Madhyamarogamarga

**Table 2: Dashavidha pariksha**

Dashavidha pariksha	Result Interpretation
Prakriti	Kapha-vata
Vikriti	Vata-pitta
Sara	Mamsa
Samhanana	Madhyama
Pramanam	Madhyama
Satmyam	Sarvarasa
Satvam	Madhyama
Vayah	Madhyama
Ahara shakti	Madhyama
Vyayama shakti	Madhyama

**Table 3: Ashtavidha pariksha**

Ashtavidha pariksha	Result Interpretation
Nadi	Vata-kapha
Mala	Nirama
Mutra	Alpa
Jihwa	Nirlipta
Shabda	Spashta
Sparsha	Sheeta
Drik	Prakruta
Akruthi	Pravara

**Addictions – Nil**

**Clinical Findings:** Clinical examination showed no external foot deformity. The patient had severe pain in the heel region on straining. There was tenderness and swelling in the right heel region.

**Clinical Investigation**

**Radiological investigation:** X-ray of calcaneum – Lateral view. The impression of the x-ray revealed the presence of both plantar and posterior calcaneal bony spur.

After analyzing the signs and symptoms and X-ray findings, the diagnosis was confirmed as a calcaneal spur.

**Therapeutic Intervention:** Three sittings of Agnikarma were administered to the patient [Table 4].

**Table 4: Therapeutic Intervention**

Date	Intervention
20.06.2022	1 <sup>st</sup> sitting of Agnikarma
23.06.2022	2 <sup>nd</sup> sitting of Agnikarma
28.06.2022	3 <sup>rd</sup> sitting of Agnikarma

**Procedure of Agnikarma**

Materials required [Figure 1]

- Red hot Panchaloha Shalaka
- Aloe vera
- Cotton
- Spirit

**Purva Karma**

- Informed consent was taken from the patient for the Agnikarma procedure.
- The Vitals of the patient was noted.
- Panchaloha shalaka was heated to red hot. [Figure 2]
- The heel region of the patient was exposed and cleaned with spirit. [Figure3]

**Pradhana Karma**

- Bindu dagdha type of agnikarma with red hot panchaloha shalaka was done in horse-shoe shape from the heel region towards the Achilles tendon by decreasing the number of agnikarma bindu. [Figure 4]
- Samyak dagdha lakshanas of agnikarma, like the emergence of crackling sound, minimal pain was observed.<sup>7</sup>

**Paschat Karma**

- Aloe vera was applied to the area of Agnikarma to reduce the burning sensation. [Figure5]
- The Vitals of the patient were checked and found to be within normal range.
- The patient was advised to avoid contact with water on the right foot for the next 24 hours.

**OBSERVATION AND RESULT**

The pain was assessed by VAS (Visual Analogue Scale). A unique scoring pattern was adopted to observe the relief in other signs and symptoms. Table 5 explains the grading of signs and symptoms. Table 6 shows the assessment of the results.

A photo of the patient's right heel was taken before and after Agnikarma [Figures 6 and 7].

**Table 5: Grading of signs and symptoms**

Signs and symptoms	0	1	2	3
Difficulty in walking	No difficulty in walking	Mild difficulty in walking	Moderate difficulty in walking	Severe difficulty in walking
Tenderness	No tenderness	Mild tenderness	Moderate tenderness	Severe tenderness
Swelling	No swelling	Mild swelling	Moderate swelling	Severe swelling

**Table 6: Assessment of result**

Assessment criteria	Before treatment	After 1 <sup>st</sup> sitting	After 2 <sup>nd</sup> sitting	After 3 <sup>rd</sup> sitting
Pain – VAS	7	5	4	3
Difficulty in walking	3	2	1	0
Tenderness	3	2	1	1
Swelling	3	2	2	1



**Figure 1: Materials required for Agnikarma**



**Figure 2: Heating of Panchaloha shalaka**



**Figure 3: Preparation of patient – cleaning right heel with spirit**



**Figure 4: Administration of bindu dagdha type of Agnikarma**



**Figure 5: Application of aloe vera**



**Figure 6 - Before Agnikarma**



**Figure 7: After Agnikarma**

**DISCUSSION**

Agnikarma is a para-surgical procedure which is of utmost importance due to less recurrence of the diseases after being treated with therapeutic heat. It is indicated in intense pain in the skin, muscle, blood vessels, ligaments, joints and bones. Pain around the spur region or heel pain is the main symptom of a calcaneal spur. This can be understood and correlated as vatakantaka in Ayurveda, where vata gets accumulated in the khudaka or joint of the feet producing pain in the feet. Agnikarma is an effective treatment to reduce the pain and inflammation in this condition.

Administration of Agnikarma in the bottom of the heel in a horse-shoe shape reduces the pain caused by a plantar calcaneal spur,

while Agnikarma done near the Achilles tendon minimises the pain caused by a posterior calcaneal spur.

As this patient had both plantar and posterior calcaneal spur, the bindu dagdha type of agnikarma was done in horse-shoe shape from the heel region towards the Achilles tendon by decreasing the number of agnikarma bindu. Agnikarma was administered for three consecutive sittings. After the 1<sup>st</sup> sitting of agnikarma, the heel pain was partially reduced. In the successive sittings, tenderness and swelling decreased further, and the patient could walk without difficulty.

#### Probable mode of action of Agnikarma in Vatakantaka

Agni is characterized by ushnatva (hotness); this property of agni helps alleviate the vitiated Vata, which has sheeta guna (cold), thus reducing pain. It also acts on the anubandha kapha, causing a reduction of swelling in the heel region.

Agnikarma leads to vasodilatation, thereby increasing blood circulation at the local site. It increases the temperature at the applied site, which reduces nerve reflexes, thus resulting in the relaxation of muscles and causing a reduction of symptoms.

In agnikarma, the heat is transferred to twak dhatu with red hot panchaloha shalaka, producing samyak dagdha vrana. Properties of Agnikarma like ushna (hot), tikshna (sharp), laghu (light), sukshma (subtle), vyavayi (pervade), vikashi (looseness) and aashukari (quick action) removes the srotovarodha (blockage of channels) thereby pacifying the vitiated doshas, thus reducing pain and inflammation.

Gate control theory states that when non-noxious (non-painful) input is applied, it closes the gate to painful input, preventing pain sensation from reaching the CNS. The heat in agnikarma acts as non-noxious stimuli, resulting in decreased pain in the heel region.

The burn caused by agnikarma helps in reducing pain by increasing the perfusion to the spur region. The burn caused by the panchaloha shalaka can be taken as a first-degree burn or superficial burn. In a first-degree burn, the damage is only to the epidermis, which can be taken as injury in the zone of hyperemia. Zone of coagulation, zone of stasis and zone of hyperemia are the three zones of injury, where the zone of hyperemia has increased perfusion.<sup>8</sup> Thus, by inducing injury through agnikarma, we increase the blood circulation to the heel region, which reduces the pain caused due to vatakantaka or calcaneal spur.

There are seven dhatvagni (digestive fire of tissues) for the sapta dhatus (seven tissue elements). Dhatvagni plays a vital role in the poshana (nourishment) of the dhatus. If there is any vishamata (deviation or vitiation) of dhatvagni, it may lead to dhatu vikara (disease of that particular tissue element). Pain in the calcaneal spur may be due to agnimandhya (weak digestive fire) of mamsa dhatu (muscle), medo dhatu (fat) and asthi dhatu (bone). The administration of agnikarma helps regulate dhatvagnimandhya (weak digestive fire of tissue element) as the local heat causes dhamaniprasarana, which increases the rakta pravahana.<sup>9</sup> This results in the reduction of pain in the spur region.

#### CONCLUSION

Agnikarma is a safe, simple and cost-efficient procedure that can also be done on an OPD basis. It gives quick relief to the pain caused due to vitiated vata in the joints of the foot in vatakantaka. Administration of horse-shoe shaped bindu dagdha agnikarma reduces pain caused by plantar calcaneal spur and posterior calcaneal spur. Therefore, agnikarma provides promising results in calcaneal spur.

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**Patient Consent:** Informed consent from the patient was taken for publishing the case report and posting the images without disclosing the patient's identity.

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