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Efficacy of *Agnikarma* and Ultrasound Therapy in Heel Pain WSR to *Vatakantaka*— A Short Review



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ABSTRACT

Vatakantaka is an *Ayurveda* condition characterized by foot pain, particularly in the heel region. It is a clinical diagnosis because patients typically present with significant pain in the morning shortly after waking up. The ailment is known as *Vatakantaka* in *Ayurveda*, and it is caused by the vitiation of the *Kapha-Vata doshas*. Although it is a self-limiting illness, medical assistance is frequently sought due to the severity of the pain. Symptoms typically improve faster when risk factors are reduced and numerous treatment modalities are initiated as soon as possible.¹ *Ayurveda* has also mentioned the use of para-surgical procedures, for instance, *Agnikarma* for the treatment of *Vatakantaka*. This article discusses heel discomfort due to *Vatakantaka* and the efficiency of *Agnikarma* and Ultrasound therapy as efficient treatment techniques for *Vatakantaka*.



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INTRODUCTION

Vatakantaka is caused due to the vitiation of *Vata dosha*, hence is incorporated within *Vatavyadhi*. It does not find direct reference in *Ayurveda* classical texts. Even *Acharya Charaka* has not mentioned the word '*Vatakantaka*' in his treatise, but he has explained several other *Vatavyadhi* in his *Vatavyadhi chikitsa adhyaya* (ch. Chi.28) based on their site in the body and symptoms presented by them. Since the prime symptom of *Vatakantaka* is a pain in *Gulfa sandhi*, it is concluded in *Vatavyadhi*.²

Acharya Sushruta and *Vagbhata* in *Nidansthana vatavyadhinidana adhyaya* states that walking in improper pattern, uneven pathways or excessive walking is the cause of disease.^{3,4} Heel pain is also referred to as Plantar Fasciitis or Heel Spur Syndrome. In *Ayurveda*, it is described as *Vatakantaka*, particularly caused by walking on uneven surfaces or by *Ati Shrama* (excessive hard work/tiredness) which produces *Ruja* (pain) in *Khaduka Pradesha* (*Parshni or Padajangha Sandhi*). In today's world, the incidence of *Vatakantaka* i.e., heel pain is increasing equally affecting both men and women. The reasons for the high prevalence of this disease can be attributed to wearing high heels, hard or improper-fitting footwear, walking long distances, and engaging in strenuous exercise for prolonged periods. Thus, it is a widespread condition in the current scenario found in people from all walks of life.⁵ The prevalence of plantar heel pain in the population was estimated to be around 9.6% (95% CI: 8.8, 10.5) and 7.9% (7.1, 8.7) for disabling plantar heel pain.⁶

As per the clinical presentation and *samprapti* of the disease, *Vatakantaka* can also be effectively paralleled with Calcaneal Spur. Calcaneal spur is a small osteophyte projection that is located on the calcaneum and is said to occur when calcium deposits build up on the calcaneus bone causing a bony protrusion. The presenting symptoms of Calcaneal spur are usually unbearable pain over the heel in the morning when the patient put their foot on the floor after a long period of inactivity, tenderness on the plantar aspect of the heel, and swelling. As per a study, the incidence of calcaneal spur in the Indian population with posterior heel pain was found to be 59% of which 60% of people affected were females between the age group of 40-50 years.⁷

RISK FACTORS OF HEEL PAIN:

The development of heel pain i.e., *Vatakantaka* in an individual can be attributed to exposure to a multitude of risk factors, some of which are -

1. Walking on irregular or uneven ground
2. Structural deformity of the foot, causing increased pressure on heels
3. Excessive strain on heels
4. Prolonged pressure over the heel or ankle joint
5. Repeated trauma
6. Improper footwear and use of high-heeled footwear
7. Overweight
8. Barefoot walk
9. Repeated attacks of plantar fasciitis⁸

As is quite evident from the above-mentioned factors, improper or excessive pressure in the heel region is one of the most prominent features in the etiopathogenesis of the condition.

COMMON CAUSES OF HEEL PAIN –

1. Plantar fasciitis
2. Calcaneal spur
3. Calcaneal apophysitis
4. Heel bump
5. Achilles tendinopathy
6. Heel neuritis
7. Heel bursitis⁹



PRODROMAL SYMPTOMS

There is no mention of *Purvaroopā* (Prodromal symptom) of *Vatakantaka* in *Ayurveda* classical text. According to *Acharya Charaka*, *Avyakta lakshana* is the *Purvaroopā* for all *Vata vyadhi*.¹⁰

According to *Vijayarakshita's* commentary on *Madhava nidana Avyaktham*, '*Na Ati Abhivyaktham*' signifies symptoms that are not manifested are known as *Poorvaroopam*, making it a clinical diagnosis.¹¹

SYMPTOMS

Pain is said to be the most common clinical manifestation of *Vatakantaka*. Similar symptoms of *Vatakantaka* are mentioned in all traditional literature in *Roopavastha* (state of disease manifestation), namely *Ruja* (pain). Even though there is agreement on the clinical presentation of *Vatakantaka* as pain, there is disagreement on the location of the pain as reported by different *Acharyas*. *Acharya Sushruta* mentions the *Ruja's* location as *Khudakapradesha*(sole region), while *Acharya Vagbhata* mentions the *Rujaas Gulfa sandhi*(ankle joint region). Because *Vatakantaka* is linked to plantar fasciitis, the location of pain in plantar fasciitis is said to be in the medial tubercle of the calcaneum.¹²

The most common clinical manifestation of Plantar Fasciitis is "first-step pain" which is characterized by pain or irritation in the heel region after a prolonged period of rest or inactivity, such as getting out of bed in the morning after sleep, standing for several hours, or driving for a long time.¹³The pain is very typical as it is very severe in the morning because the fascia tightens overnight due to inactivity, but it eases after a few minutes of mild to moderate activity when the foot warms up. The pain can also arise when the inside of the heel and sometimes the arch is pressed, hence the stretching of plantar fascia can be unpleasant for the person. If the illness progresses, the pain can worsen throughout the day if the activity is continued. There may also be pain along the lateral edge of the heel at times. This could be caused by walking on the outside border of the foot to relieve pressure on the uncomfortable side of the foot.

UPASAYA-ANUPASHAYA

There is no mention of any specific *Upashaya* or *Anupashaya* for the ailment. Because *Vatakantaka* is a *Vatavyadhi*, *ushnaupachara* may give *Upashaya*. And, because of the *Nidana* (cause), *Vishrama*(rest) may provide *Upashaya* to the discomfort.¹⁴

SAMPRAPTI (PATHOPHYSIOLOGY AS PER AYURVEDA)

The aforementioned elements contribute to the vitiation of *Vata Dosha*. Because aggravated *Vata* gets stuck in the ankle joint, particularly in dependent areas like the heel, discomfort

occurs in the heel and surrounding region. If the patient stands up after a long rest, he experiences sharp heel pain. Pain is most noticeable after walking up the stairs in the morning, standing for an extended period, running, and walking.¹⁵

SAMPRAPTI GHATAKA¹⁶

<i>Dosha</i>	<i>Vata</i>
<i>Dooshya</i>	<i>Mamsa, Rakta</i>
<i>Srotas</i>	<i>Raktavah, asthivaha</i>
<i>Srotodusti</i>	<i>Sanga, Vimargaman</i>
<i>Agni</i>	<i>Raktadhatvagni Mamsadhatv agni Ama Raktadhatv agnijanya, Mamsadhatv agnijanya</i>
<i>RogaMarga</i>	<i>Madhyama</i>
<i>Udbhavasthana</i>	<i>Pakvashaya</i>
<i>Vyaktasthana</i>	<i>Gulphasandhi, padatala Adhishtana Gulphasandhi, padatala</i>

INVESTIGATION

Laboratory tests are frequently undertaken to rule out underlying endocrine and inflammatory disorders. X-rays are essential to rule out other causes of heel pain, notably calcaneal stress fractures. MRI is used on patients who are resistant to treatment to rule out alternative diagnoses that were not shown on the X-ray, such as a calcaneal stress fracture, calcium deposit, or soft-tissue tumor.¹⁷

PHYSICAL EXAMINATION

The patient's foot must be examined both at rest and in a weight-bearing position during the physical examination. Swelling, bone abnormalities, bruises, or skin tears may be seen on a visual examination of the foot. The examiner should palpate bony prominences near the heel and midfoot, looking for any discomfort or palpable deformity.

The passive range of motion of the foot and ankle joints should be evaluated for signs of restriction.

Additionally, when the patient is bearing weight, the foot posture and arch development should be visually examined: the physician should look for aberrant pronation or other anomalies. Observing the patient's foot while walking may allow the examiner to notice gait irregularities that provide additional diagnostic evidence.¹⁸

TREATMENT:

I. Modern management

- Lifestyle management
- Exercise
- Medicine
- Shoe recommendations
- Taping or strapping to rest stressed muscles and tendons
- orthopedic molds
- Extracorporeal shock wave therapy
- Ultrasound therapy
- Surgery



II. Ayurveda management:

- *Agnikarma*
- *Raktavsechana*
- *Snehan*
- *Upnah*
- *Eranda tailapanam.*

In Ayurveda texts, *Agni karma* is considered superior to any other treatment modality.

AGNIKARMA:

Agnikarma is a thermal para-surgical method in which *Agni* is used to burn the affected tissue intentionally for therapeutic purposes. It is recommended for *Vata-Kapha* imbalances. In

comparison to *Bheshaja, Shastra* and *Kshara karma*, is a highly promising approach. It is critical in eliminating the possibility of disease recurrence. If done correctly, there is no risk of infection or other complications.

PROCEDURE

I. *Purvakarma*

- Informed written consent is obtained from the patient.
- A clinical examination is done.
- The patient is then taken to the procedure room.

II. *Pradhan karma*

- The point of maximum tenderness is identified.
- The affected part is cleaned with normal saline. Then it is wiped with the dry cotton gauze.
- Heat is applied with *Shalakaby* direct method and with the help of an appropriate heating element.
- Apply *Shalakawith Bindu vishesh* till *Samyak dagdha lakshanas* is observed.

III. *Paschatakarma*

- Apply *Shatdhauta ghruta* over *Agnikarma* site.
- It will help to get relief from the burning sensation.

MODERN MANAGEMENT:

Ultrasound (US) therapy is a regularly utilized physiotherapy treatment method in people with heel pain. The amplitude, width, and pulse interval of ultrasound are all constant. The strength, frequency, pulse shape, duration of action, and mode of application all affect tissue. Mechanical vibration bundles created by the action of longitudinal waves create variations in shape and intracellular pressure which function as an “internal tissue massage”. Ultrasound therapy is a noninvasive therapy that can be administered for 7 days with mild to moderate efficacy.

For the treatment, intensities of 0.5-1.5 w/cm² for 10 minutes have been indicated.¹⁹

DISCUSSION

The main reason for *Vatakantaka* in *Gulf Sandhi Pradesh* is vitiated *Vata- dosha*, which occurs as a result of poor walking patterns, irregular paths, or heavy walking. This vitiated *Vata* induces *Ruja* (pain) over *Gulfsandhi*, as well as morning stiffness. Treatment for *Vatakantaka* involves removal of vitiated *Vata* by *Bahyasnehan*, *Upanaha*, *Raktamokshana*, *Viddhakarma*, *Bandhana*, and *Abhyantar errand snehapana*, according to different *Samhita*. All of the *Vatashamanachikitsaupkramas* can be used to cure the illness.

According to Ayurveda theory, this disease might arise from the vitiation of *Vata* with *Anubandha* of *Kaphadosha*. *Vata* and *Kapha Dosha* are thought to be major factors in the development of *Shotha* (inflammation) and *Shoola* (pain) in the heel.

Agni is introduced to the damaged area using hot *Shalaka* in *Agnikarma*. *Twak dhatu* receives physical heat from hot *Shalaka*, which produces *Samyaktadghavrana*. *Agni's Ushna*, *Tikshna*, *Laghu*, *Sukshma*, *Vyavayi*, *Vikasi*, and *Aashukari* qualities serve to relieve *Strotoavarodha*, pacify the vitiated *Vata-kapha* dosha, break the etiology, and lessen pain and inflammation. In addition, the *Ushnaguna* of *Agni* calms the *Shitaguna* of *Vayu* and alleviates pain. It decreases *Kaphanubandha*, reducing inflammation and causing *Pachan* of *Ama*.

The *Agni* also improves blood circulation in the heel area, resulting in optimum tissue nutrition. This improved circulation aids in the removal of pollutants from the bloodstream as well as the reduction of pain and local inflammation. Therapeutic heat stimulates the lateral spinothalamic tract, causing stimulation of descending pain inhibitory fibers and the release of endogenous opioid peptide, which blocks the transmission of the pain pathway. The temperature at the applied site is raised, which reduces nerve reflexes and causes muscle relaxation, resulting in reduced stiffness.

CONCLUSION

Agnikarma is a basic, easy, and inexpensive technique that can be performed at the OPD level. It relieves *Vata* and hence aids in the relief of heel pain, stiffness, and inflammation. Based on this conceptual study, we can conclude that *Agnikarma* and Ultrasound therapy can effectively treat heel pain, particularly *Vatakantaka*.

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