

PARA-SURGICAL RESOLUTION OF VATAKANTAKA (PLANTAR FASCIITIS) UTILIZING MRUTIKA SHALAKA AGNIKARMA: A CASE REPORT

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ABSTRACT

Vatakantaka, commonly correlated with plantar fasciitis in modern medicine, is a painful heel disorder described in Ayurveda as a manifestation of aggravated *Vata Dosha* localized in the *Parshni* (heel) region. It significantly impairs mobility and daily functioning. *Agnikarma*, a classical para-surgical procedure involving controlled thermal cauterization, has been traditionally indicated in *Vata*-dominant disorders. This case reports a 59-year-old male with a two-year history of right-sided heel pain, particularly severe during the first steps in the morning and on weight-bearing, with radiological evidence of a calcaneal spur. The patient was treated with seven sessions of *Agnikarma* using a *Mrutika Shalaka* (earthen probe) on alternate days, with pain and function assessed through standardized measures. A steady and marked reduction in pain was observed across sessions, reflected in improved Visual

Analogue Scale (VAS) scores and symptom grading, without any adverse effects. By the end of therapy, the patient regained near-normal walking ability and daily function. This case suggests that *Agnikarma* with *Mrutika Shalaka* is a safe, minimally invasive, and effective approach for managing *Vatakantaka*, warranting further evaluation in larger clinical studies.

KEYWORDS: *Vatakantaka*; Plantar Fasciitis; *Agnikarma*; *Mrutika Shalaka*; *Shalya Tantra*; *Vatavyadhi*; Calcaneal Spur; Heel Pain; Para-surgical Ayurveda; VAS.

INTRODUCTION

Heel pain arising from the plantar surface of the foot is one of the most functionally disabling musculoskeletal complaints encountered in clinical practice, affecting a substantial proportion of ambulatory adults across all age groups. The condition known in Ayurvedic medicine as *Vatakantaka* — literally meaning a 'thorn of Vata' in the heel — corresponds closely to what modern orthopedic medicine designates plantar fasciitis, a degenerative enthesopathy of the calcaneal attachment of the plantar aponeurosis. The subjective experience of a sharp, stabbing pain at the medial calcaneal tuberosity, characteristically severe with the first few steps after rising from rest and on prolonged weight-bearing, is the defining clinical hallmark of both conditions.^[1] The great Indian surgeon “*Sushruta*” (800 BC) known as father of Surgery has described, *Vatakantaka* in *Vatavyadhi Nidhana*.^[1] While walking when the foot is placed unevenly on the ground, *Vata dosa* gets localized in *khuda* (ankle) and aggravated and produce pain in heel known as *Vatakantaka*.^[1] *Acharya Vaghbata* described that severe aching pain is perceived when the foot is kept in unusual posture or when the local area is fatigued due to excess function, *Vata dosa* get aggravated and localized in the ankle joint and heel. It is called as *Vatakantaka*.^[2]

Plantar Fasciitis is more commonly seen in athletes, overweight persons, dancers and people who wear shoes with inadequate support. It can be also seen as degenerative changes by growing age. It is estimated that 1 in 10 people will develop Plantar Fasciitis in their lifetime. Incidence occurs between 40 and 60 years of age. The condition demonstrates a bimodal age distribution, affecting both active young adults engaged in high-impact physical activity and middle-aged to older sedentary individuals in whom degenerative changes at the calcaneal entheses predominate.^[3] Management remains a persistent clinical challenge: while conservative measures including physiotherapy, non-steroidal anti-inflammatory drugs, corticosteroid injections, and orthotic devices produce variable and often incomplete relief, they carry a significant risk of adverse effects with prolonged use. Recurrence rates after conventional treatment remain high, underscoring the need for durable, safe, and definitive alternatives.^[4]

Acharya Sushruta in *Agnikarma vidhi adhyaya* mentioned that *agnikarma* can done in condition like, very severe pain in *twak*(skin), *mamsa*(muscle), *sira*(vein), *snayu*(ligament),

asthi(bone) *sandhi*(joint)^[5] and other treatment modalities like oleation, poultice, bandaging for management of *Vatakantaka*. *Vatakantaka* is a *Snayu Asthi Sandhi Ashrit Vyadhi* (Disease of tendon, bone and joint) and painful condition. According to the above reference, *Agnikarma* is used in this case to assess its efficacy in relieving pain in *Vatakantaka*.^[5]

The choice of *Shalaka* (probe) in *Agnikarma* is governed by the depth and nature of the tissue being treated. *Mrutika Shalaka* — a probe fashioned from medicinal clay (*Mrutika*) — is specifically indicated for treatments directed at skin and superficial tissue layers, where a gentler and more diffuse heat transfer is appropriate.^[6] Its thermal properties — slower heat absorption and more even distribution compared to metallic probes — make it particularly suited to the treatment of superficial *Vatavyadhis* involving the fascia and periosteum.

CASE PRESENTATION

A 59-year-old male patient, a resident of Patna, Bihar, presented to the outpatient department of Shalya Tantra, OPD No.14, Government Ayurvedic College and Hospital, Patna with a chief complaint of pain over the plantar surface of the right heel of approximately two years' duration. The pain had developed insidiously without any preceding trauma and had progressively worsened over the intervening period. It was most severe on bearing weight immediately after waking, during the first few steps of the morning, and after sustained periods of sitting. The patient reported partial and temporary relief on walking, with aggravation returning after prolonged ambulation. The pain was described as sharp, pricking, and occasionally burning in character.

The patient had previously sought treatment from multiple allopathic practitioners and had received oral non-steroidal anti-inflammatory drugs, local corticosteroid injections (twice, with temporary relief lasting approximately six to eight weeks each time), and physiotherapy for six weeks without lasting benefit. There was no history of trauma, systemic inflammatory arthritis, gout, diabetes mellitus, or peripheral vascular disease. Occupation involved sedentary desk work with occasional prolonged standing. Body mass index was calculated at 27.4 kg/m².

Clinical Examination

General physical examination was within normal limits. Local examination of the right foot revealed point tenderness at the medial calcaneal tuberosity, sharply elicited on deep palpation at the origin of the plantar fascia.

Windlass test: Patient was made to stand on a stool with the metatarsal heads just off the edge of the stool, with equal weight on both feet. Then first phalange was passively extended and interphalangeal joint to flex, continued to its end of range or until the patient's pain is reproduced.^[7]

Positive windlass test: Heel pain reproduced when passive dorsiflexion of the toes was done. No gross swelling, erythema, or skin changes were observed over the heel. The ankle joint exhibited a full and pain-free range of motion. Lower limb neurovascular status was intact bilaterally. The patient walked with a slightly antalgic gait, favoring the right foot. Ayurvedic clinical assessment revealed features of *Vatakantaka*: *Parshni Shoola* (heel pain), *Sthamba* (stiffness), *Toda* (pricking sensation), and *Sparshaasahishnuta* (tenderness to touch), consistent with *Vata Pradhana* presentation.^[1]

Radiological Assessment

Plain radiographs of the right foot (anteroposterior and lateral views) were obtained. The X-ray demonstrated a well-defined plantar calcaneal spur at the medial tubercle of the calcaneum with surrounding soft tissue changes.



Figure 1: X-ray Right Heel (AP and Lateral View).

DIAGNOSIS

Based on the clinical history, physical examination, and radiological evidence, a diagnosis of *Vatakantaka* was established according to Ayurvedic criteria, with a modern correlate of plantar fasciitis with calcaneal spur (right foot). The two-year chronicity, progressive course, failure of prior conservative management, and classic symptom pattern provided the basis for selecting *Agnikarma* with *Mrutika Shalaka* as the therapeutic intervention.

Treatment given

- ❖ **Agnikarma with Mrutika Shalaka:** At heel area
- ❖ **Duration:** 7 sittings at an interval of one day after each sitting (1st , 3rd , 5th , 7th , 9th , 11th , 13th)
- ❖ **Follow up** Up to 2 Months
- ❖ **Assessment criteria:** 1. Pain 2. Walking difficulty 3. Tenderness 4. Windlass test

Grades**Table 1: Grades of Visual analogue scale for Pain^[8]**

Pain Level	Severity	Description & Impact on Daily Function
0	None	Completely pain-free; no discomfort present.
2	Mild	Noticeable discomfort that can easily be ignored or sidelined during daily activities.
4	Moderate	Clear pain that actively distracts you or starts to hinder everyday tasks.
6	Severe	Intense discomfort that significantly disrupts your focus, concentration, and mental clarity.
8	Very Severe	Overwhelming pain that impairs your ability to manage basic physical needs (like eating or dressing).
10	Worst Possible	Incapacitating pain requiring immediate bed rest, immobility, or urgent medical attention.

Table 2: Walking difficulty

Score	Functional Mobility Status	Clinical Presentation & Impact
0	Pain-Free Ambulation	The individual can walk normally with zero physical discomfort, tension, or limitation in their stride.
1	Painful or Restricted Gait	Walking triggers active pain, discomfort, or physical distress, which may cause a limp, reduced speed, or a need for assistance.

Table 3: Tenderness.

Score	Tenderness Classification	Patient Response & Clinical Indicators
0	Non-Tender	The patient experiences zero discomfort during localized pressure and explicitly confirms the absence of pain when prompted.
1	Mild Tenderness	The patient does not show visible distress but verbally acknowledges mild, localized pain only when directly questioned during the examination.
2	Moderate Tenderness	The examination triggers an immediate, involuntary physical response; the patient visibly winces, frowns, or flinches during pressure.
3	Severe Tenderness	The localized pressure causes acute distress, prompting the patient to actively pull away, guard the area, or withdraw the limb.

Table 4: Windlass test: Based on VAS Scale.^[8]

Score	Diagnostic Result & Severity	Objective Facial & Physiological Indicators
0	Negative Test (Asymptomatic)	No pain elicited. The patient remains relaxed, alert, and comfortable (e.g., smiling or conversing normally).
2	Positive Test (Mild Pain)	Subtle discomfort. The patient loses their sense of humor, becoming uncharacteristically serious or stoic.
4	Positive Test (Moderate Pain)	Visible distress. Marked by furrowed brows, brief breath-holding, tightly pursed lips, or grimacing.
6	Positive Test (Severe Pain)	Acute distress. Characterized by a wrinkled nose, a raised upper lip, and noticeably accelerated or shallow breathing.
8	Positive Test (Very Severe Pain)	Overwhelming discomfort. The patient exhibits slow or delayed blinking, keeps their mouth open, and struggles to engage.
10	Positive Test (Worst Possible Pain)	Incapacitating distress. The patient keeps their eyes tightly shut, cries out, or explicitly communicates agonizing pain.

TREATMENT PROTOCOL

➤ Pre-procedure Preparation

Written, informed consent was obtained from the patient after a detailed explanation of the procedure, its anticipated outcomes, and potential adverse effects. Pre-procedure investigations including complete blood count, blood glucose (fasting and post-prandial), bleeding time, clotting time, and blood pressure were performed and found to be within normal parameters. The plantar surface of the right foot was cleaned with antiseptic solution. The precise area of maximum tenderness - identified at the medial calcaneal tuberosity - was marked with a dermatographic pen. Local anaesthesia was not employed, consistent with classical *Agnikarma* practice and to preserve sensory feedback during the procedure.

➤ Preparation of Mrutika Shalaka

Mrutika (medicinal clay) was sourced from a clean, non-contaminated site in accordance with the classical specifications. The clay was shaped manually into a rod approximately 10–12 cm in length and 3 - 4 mm in diameter, with a rounded, slightly tapered working tip. The probe was sun-dried for 48 hours and then heat-treated at a moderate temperature before use. Before each session, the *Mrutika Shalaka* was heated in a flame source (candle) until it attained a glowing red-to-orange colour, indicating adequate thermal loading for *Agnikarma*.

➤ Agnikarma Procedure

The patient was positioned supine with the right foot placed in a comfortable, accessible orientation. Then heel was cleaned with *Triphala Kashaya* and wiped with dry sterilized

gauze. The heated *Mrutika Shalaka* was applied with a brief, firm, and uniform contact pressure (*Dahanam*) to the marked site over the medial calcaneal tuberosity. Multiple punctate applications (*Bindu Dahanam*) were made in a clustered pattern across the area of maximum tenderness, each lasting approximately one to two seconds. The classical description requires that the skin surface show a yellowish-white (*Pandu-varna*) colouration at the contact points, signifying adequate thermal penetration without excessive burning. The number of contact points per session ranged from 8 to 12, depending on the area of tenderness at each visit.

Seven sittings of *Agnikarma* were administered on alternate days (Day 1, 3, 5, 7, 9, 11, 13) over a total period of thirteen days. To get relief from burning sensation Kumari (*Aloe barbadensis* Mill.) pulp was applied over burnt area. Then *Yashtimadhu Churna* (*Glycyrrhiza glabra* Linn.) applied over the treated area to mitigate the immediate burning sensation and to promote wound healing. Patients were advised to rest the foot for 30 minutes post-procedure, avoid soaking the treated area in water for 24 hours, and refrain from walking barefoot on hard surfaces. No systemic or local anti-inflammatory medications were co-administered during the treatment course.



Figure 2: Agnikarma with Mrutika Shalaka.

Outcome Assessment Protocol

Pain was the primary outcome measure, assessed using the Visual Analogue Scale (VAS, 0-10 scale) for walking-related pain.

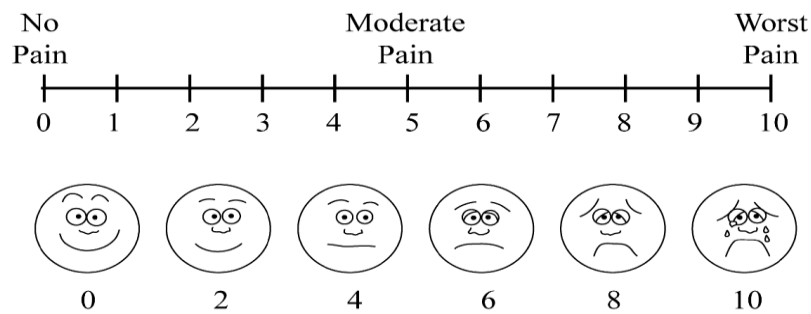


Figure 3: Visual Analogue Scale.

A set of four additional parameters was evaluated using a standardised ordinal grading scale developed from the classical symptom criteria of *Vatakantaka*:

➤ **Morning First-Step Pain**

- **0:** Absent – No discomfort experienced upon initial weight-bearing in the morning.
- **1:** Mild – Negligible or slight discomfort that does not hinder immediate movement.
- **2:** Moderate – Distinct pain that noticeably alters early morning gait.
- **3:** Severe – Intense, debilitating pain elicited by the first steps of the day.

➤ **Calcaneal Origin Tenderness**

- **0:** Absent – No focal pain elicited upon direct palpation of the plantar fascial insertion.
- **1:** Mild – Slight sensitivity or tenderness reported only under deep manual pressure.
- **2:** Moderate – Definite painful response or withdrawal reflex during standard palpation.
- **3:** Marked – Exquisite, acute tenderness triggered by minimal digital pressure at the calcaneal origin.

➤ **Ambulatory Restriction**

- **0:** None – Mobility is entirely unimpeded; the patient maintains a normal gait.
- **1:** Mild – Minor functional limitation; capable of walking but with slight discomfort during prolonged ambulation.
- **2:** Moderate – Clear functional impairment; the patient is noticeably limited in walking distance or speed.
- **3:** Unable to walk normally – Severe locomotive disruption; normal gait mechanics are impossible without significant compensatory strategies or assistive devices.

➤ **Localized Swelling and Inflammation**

- **0:** Absent – No visible or palpable edema or signs of localized inflammation.
- **1:** Mild – Trace, superficial puffiness or slight thickening noted around the hindfoot.

- **2:** Significant – Obvious, pronounced edema with unmistakable signs of localized inflammatory changes.

All parameters were recorded at baseline (BT) and at each alternate-day assessment point (AT1 through AT5), corresponding to the day before each successive treatment session.

RESULTS

Table 5 presents the pre-treatment and serial post-treatment scores across all five assessed parameters. The trajectory of improvement was progressive across all domains, beginning from the second session and accelerating through sessions four to seven.

Table 5: Serial Assessment of Clinical Parameters Before and After Agnikarma Treatment.

Parameter	BT	AT1 (2 nd Day)	AT2 (4 th Day)	AT3 (6 th Day)	AT4 (10 th Day)	AT5 (14 th Day)
Pain on Walking (VAS 0–10)	8	7	6	5	3	1
Morning First-Step Pain (0–3)	3	3	2	2	1	0
Tenderness on Palpation (0–3)	3	2	2	1	1	0
Restricted Ambulation (0–3)	2	2	2	1	1	0
Swelling / Local Inflammation (0–2)	1	1	1	0	0	0

BT = Before Treatment; AT1–AT5 = Assessment points at Day 2, 4, 6, 10, 14 respectively;

VAS = Visual Analogue Scale

Walking pain on the VAS declined from an initial score of 8 (severe) to a terminal score of 1 (minimal) by the final assessment, representing an 87.5% reduction in pain intensity over the course of treatment. Morning first-step pain - the most functionally disabling symptom - fell from Grade 3 (severe, requiring the patient to limp and hold support) to Grade 0 (completely absent) by the penultimate assessment. Tenderness on palpation at the medial calcaneal tuberosity was eliminated by the final session, and ambulatory restriction similarly resolved to nil. The mild perilesional swelling noted at baseline also cleared completely by the fourth assessment.

No adverse events were observed or reported at any session. The cauterised skin surface showed appropriate healing between sessions, with no evidence of secondary infection, excessive scarring, hyperpigmentation, or tissue necrosis. The patient reported that the procedural discomfort associated with *Mrutika Shalaka* application was well tolerated

characterised as brief, sharp, and subsiding within seconds - and that this was significantly less distressing than anticipated.

At a voluntary telephonic follow-up conducted two months after the final treatment session, the patient reported sustained improvement, with near-complete absence of morning pain and the ability to walk for extended distances without discomfort. No recurrence had been noted within the follow-up window, though long-term surveillance data were not formally collected.

DISCUSSION

Vatakantaka is explicitly described in Sushruta Samhita^[1] as pain arising within the *Parshni* (heel) due to stepping on sharp objects or sustained contact with hard, irregular surfaces, which drives aggravated *Vata* into the *Parshni Sira* (neurovascular structures of the heel). The resultant *Toda* (pricking pain), *Stambha* (stiffness), and *Sparshasahishnuta* (hyperaesthesia) mirror the cardinal symptoms of plantar fasciitis with a precision that has attracted considerable academic interest in the Ayurvedic literature.^[1,2]

The pathological substrate in plantar fasciitis involves micro-tears at the enthesis of the plantar fascia on the medial calcaneal tuberosity, with subsequent degenerate fibroplasia rather than classical inflammatory cell infiltration - a distinction that explains the limited and often short-lived response to anti-inflammatory drugs and corticosteroids. The resulting chronic pain state is mediated by a combination of peripheral sensitisation (lowered nociceptor thresholds at the enthesis) and central sensitisation, particularly in cases of two or more years' duration such as the present case.^[3,4]

Agnikarma achieves analgesia through a multi-mechanism pathway that aligns with contemporary neurobiological understanding of thermal pain modulation. At the histological level, controlled thermal injury induces the selective destruction of sensitised C-fibre and A-delta nociceptors at the treatment site, thereby interrupting the peripheral pain signal.^[9]

It simultaneously stimulates deep heat receptor pathways that gate spinal pain transmission (consistent with Melzack and Wall's gate control theory). At the tissue level, thermal coagulation promotes fibroblast activation, increases collagen synthesis, and improves local vascularity - all of which address the underlying degenerative enthesopathy.^[10]

The selection of *Mrutika Shalaka* over metallic probes in this case was guided by classical recommendations for superficial tissue pathology and skin-level applications. Clay-based probes offer a lower thermal conductivity coefficient than metals, which translates into a more diffuse, sustained, and penetrating heat transfer to the deeper fascial layer without the risk of focal overheating seen with metal probes. This property makes them particularly suited to plantar heel applications, where the treatment target lies at a depth of 3–5 mm beneath the skin surface in a biomechanically stressed region. The near-complete symptom resolution observed across seven sessions supports this rationale.

The outcome in the present case — 87.5% reduction in VAS pain score and complete resolution of all secondary symptom parameters within seven sessions - is consistent with and favourably comparable to results reported in earlier published case series on *Agnikarma* in *Vatakantaka* using metallic probes. Notably, the tolerance profile of *Mrutika Shalaka* appeared superior to what is commonly reported with metallic probes, with no patient-reported distress beyond the immediate procedural stimulus. The absence of any adverse wound healing events is consistent with the classical recommendation that *Mrutika*-based applications carry a lower tissue trauma index.^[6]

Several limitations of this report warrant acknowledgement. Being a single-case observation, no causal inference can be drawn regarding the relative contribution of the intervention versus natural disease history. The absence of a control arm, objective biomechanical measurements (e.g., ultrasound assessment of plantar fascia thickness), and long-term follow-up data beyond two months limits the generalizability of the findings. Biochemical markers of inflammation were not tracked. Future work should employ a randomised comparative design, include ultrasound outcome measures, and extend follow-up to a minimum of six months.

CONCLUSION

This case report documents the successful management of a two-year-old, treatment-resistant right-sided *Vatakantaka* in a 59-year-old male through seven sittings of *Agnikarma* with *Mrutika Shalaka* administered on alternate days. The intervention produced an 87.5% reduction in walking pain (VAS), complete resolution of morning first-step pain and tenderness, and restoration of normal ambulatory function, with an excellent safety profile and high patient tolerance. These findings affirm the clinical applicability of *Mrutika Shalaka*

as a therapeutic probe in *Agnikarma* for superficial *Vatavyadhi* conditions and contribute original clinical data to a field that remains underrepresented in the indexed literature.

DECLARATIONS

Patient Consent: Written and informed consent for clinical management and publication of de-identified case data was obtained from the patient.

Ethics: This report conforms to the principles of the Declaration of Helsinki. No institutional ethics committee approval was required for a single case report, but patient confidentiality has been maintained throughout.

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Conflicts of Interest: The authors declare no financial or non-financial conflicts of interest.

REFERENCES

1. Sushruta. *Sushruta Samhita*. Acharya YT, editor. Nidana Sthana, 1/79, Vatavyadhi Nidana. Varanasi: Chaukhamba Surbharati Prakashana.
2. Vagbhata. *Astanga Sangraha*. Sharma SP, editor. Shashilekha Sanskrit commentary of Indu. Varanasi: Chowkhamba Sanskrit Series Office; 2006; 416.
3. Riddle DL, Pulisic M, Pidcoe P, Johnson RE. Risk factors for plantar fasciitis: a matched case-control study. *J Bone Joint Surg Am.*, 2003; 85(5): 872-877.
4. Buchbinder R. Plantar fasciitis. *N Engl J Med.*, 2004; 350(21): 2159-2166.
5. Sushruta. *Sushruta Samhita*. Shastri A, editor. 12th ed. Sutra Sthana, Agnikarmavidhi Adhyaya, 12/10. Varanasi: Chaukhamba Surbharti Prakashana; 2001.
6. Gupta PD. *Agnikarma Technological Innovation (Treatment of Therapeutic Burning)*. Vol. 1. 1st ed. Nagpur: Prabha Publication, 1992; 32.
7. Physiopedia. Windlass Test. Available from: https://www.physio-pedia.com/Windlass_Test [Accessed 10th July 2026].
8. ResearchGate. Visual Analog Scale (VAS) for assessment of pain. Available from: https://www.researchgate.net/figure/visual-analog-scale-vas-for-assessment-of-pain_fig1_260391219 [Note: Fixed broken URL stub].
9. Sherkhane RN. Critical appraisal of Agnikarma and its therapeutic aspects. *Int Res J Pharm.*, 2013; 4(5): 75-77.
10. Dhurat R, Sukesh M. Principles and methods of preparation of platelet-rich plasma: a review and author's perspective. *J Cutan Aesthet Surg*, 2014; 7(4): 189-197. [Re: thermal mechanisms in tissue neuromodulation]