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A Clinical Study of Efficacy of Agnikarm: An Ancient Treatment Method in the Management of Heel Pain

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ABSTRACT

Agnikarm is an Ayurvedic treatment technique for heel pain that is still in practice in many parts of India. In this study the efficacy of Agnikarm is clinically tested. Agnikarm proves to be very effective. This study indicates that Agnikarm may be a stand-alone technique. To de-mystify the underlying mechanism of Agnikarm, it is imperative to expand the current scientific understanding of the phenomenon to include the subtle energy physics of the human organism. This research perhaps be underappreciated by researchers and doctors who are seeking alternative/non-invasive modalities of treatments available in the World now.

Keywords: Agnikarm, Heel Pain, planter fasciitis, tendo calcaneal arthralgia, Ayurvedic-Para Surgical Procedure

Introduction

Agnikarm is an ancient pain treatment tool that has been practiced and documented for at least 3000 yrs [1, 2]. Due to the time gap, arcane status of the modern scientists, cultural limitations and linguistic barriers, the Ayurvedic-Para Surgical Procedure (APSP) [3] needs to be explained with a fresh new look that enables better understanding of this ancient technique. When compared with its counterparts, Agnikarm stands out with its efficacy [4-7]. Pain healing [8] can be observed in various conditions, such as fracture of heel bone or lover's heel, tendo calcaneal arthralgia, tendo achilis bursitis and planter fasciitis [9,10].

In the case of planter heel pain, the characteristic feature include pain in the ball of the heel, especially when standing or walking for a long period of time that causes tenderness on the

heel felt as pain distinctly at the attachment of the planter fascia to the medial tubercle of the calcaneus in addition to slight swelling at the attachment of the fascia as externally observable symptoms. For patients affected by heel pain, Roentgenogram radiographs reveal a calcaneal spur with a bony projection forward from the undersurface of the calcaneal tuberosity due to ossification of the planter fascia. Furthermore, the inflammation of the soft tissue or a bursa beneath the spur may also possibly contribute to heel pain.

Typical modern treatment regimen [8] for treating the heel-pain includes prescription of oral non-steroidal anti-inflammatory drugs, extensive bed rest, insole rubber heel cup-pads, radiant heat or diathermy [11] or the injection of hydrocortisone acetate and lignocaine into the tender area. In resistant cases, surgical procedures include release of planter fascia from tuberosity of the calcaneus, removal of any calcaneal spur, neurolysis of the nerve to the abductor digiti minimi, release of the flexor digitorum brevis, and excision of the anterior tuberosity of the calcaneus [10, 12]. However, in modern medical practices prognosis with both conservative and surgical treatment is not employed. This stagnation in current knowledge demands evaluation of an effective alternative, such

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as APSP, to tackle this painful heel condition. As a close analogy we may consider the ancient technique called 'Parshneeshool' as a synonym for heel pain, though the term cannot mean the same as the modern word as various other conditions may also possibly involve in the paradigm approach. The clinical features of heel pain can be associated with the ancient terms 'Vatkantak' which can be correlated with the disease referred in various *Vatvyadhi* context in the *classical text*. *Vatkantak* is reviewed in the article [3]. Agnikarm has been described as the most effective therapy in the management [13] of all painful conditions especially for musculo-skeletal disorders. Hence, the present study was carried out based on the literature research. In this study, we found that Agnikarm is very effective in reducing symptoms such as heel pain, swelling and tenderness of heel.

Materials and Methods

This open randomized non-comparative study entitled 'To study efficacy of Agnikarma in the management of Heel Pain' has been conducted at Dr. D.Y. Patil Ayurvedic Hospital, Navi Mumbai, Maharashtra state, India. A total of 30 patients were included in the study. Both male and female patients were randomly selected with pains ranging from 4-9 from a scale of 10. X-rays of the heel were observed manually for all patients. The tool used for Agnikarm was a silver-based heating probe

that generates a maximum heat with rod temperature as high as 350 °C. The type of Agnikarma practiced is called 'Bindu type' [2], that involves intermittent burn (as small circular patterns) with 6 *Bindu* burn per trial. Two trials at the interval of 15 days were performed, and the follow up assessment was carried out consequently after every seven days [Day- 0, 7, 15, 21, 30] a total of five times in a month. After Agnikarm, the 'Yashtimadhu siddha Ghrit' (specially prepared clarified butter or ghee) component [4] was applied over the post burn scars.

Inclusive criteria:

- i. Calcaneus spur
- ii. Planter fasciitis / policeman heel / bursitis (enlargement of ankle joint bursa)
- iii. Partial tears of achilles tendon / sabtaloid arthritis / tendonitis

Exclusive criteria:

- i. Local infection / Osteoporosis
- ii. Sarcoma / any other type of tumour pressing on tendon
- iii. Corn / Tropical ulcer
- iv. Fracture of calcaneus / ankle joint bone
- v. Foreign body in heel

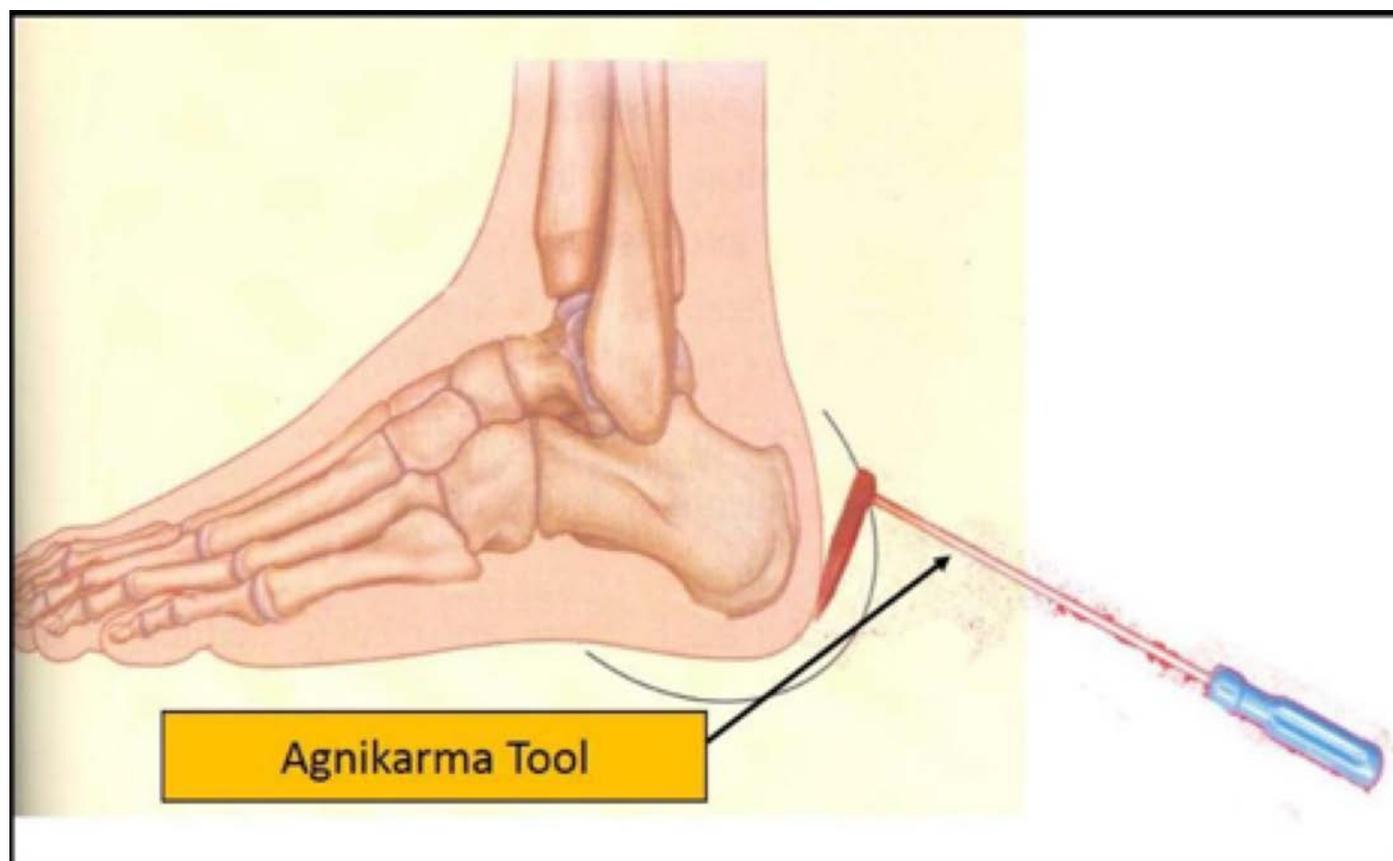


Figure 1: A typical Agnikarma Tool used to treat heel pain. The black line indicates the rough area covered in the treatment.

Table 1: Assessment of pain was carried out with the help of Memorial Symptom Assessment Chart (MSAC).

covered in a review paper.

| | | |
|---|-----------------|-----|
| <i>Parshni shool</i> (Heel pain) | Rarely | 0 |
| | Occasionally | + |
| | Frequently | ++ |
| | Almost Constant | +++ |
| <i>Parshni shoth</i> (Swelling on heel) | Rarely | 0 |
| | Occasionally | + |
| | Frequently | ++ |
| | Almost Constant | +++ |
| <i>Parshni Pidnaasahatwa</i> (Tenderness) | Rarely | 0 |
| | Occasionally | + |
| | Frequently | ++ |
| | Almost Constant | +++ |
| <i>Chankraman Kashtata</i> (Difficulty in walking) | Rarely | 0 |
| | Occasionally | + |
| | Frequently | ++ |
| | Almost Constant | +++ |

The demographic analysis on this study revealed a number of acceptable facts. The age group of maximum patients with heel pain was observed between 41 to 50. Heel pain was observed to be dominant in females (66.66%) compared to Males. It was dominant in *VatPitta* (26.66%) and *VatKaph* (23.33%)– *Prakriti* patients [14]. The condition was 80% prevalent in patients using footwear with hard sole, leather and high heels. Due to heel pain, most of the patients progressively developed symptoms such as difficulty in walking, swelling and tenderness in the region of pain. As per demographic

Assessment of Severity of Symptoms

| | |
|-------------|-----|
| No symptoms | 0 |
| Mild | + |
| Moderate | ++ |
| Severe | +++ |

Results and Discussion

It has been found that mild degree of heating (180 °C) is effective in relieving pain, possibly as a result of the sedative effect on the sensory nerves. However, strong superficial heating (350 °C) procedure has been observed to have potential to relieve pain due to *counter irritation effect*. Our hypothesis here is that the released heat could have caused irritation on the superficial sensory nerve endings thereby relieving pain from the concept of '*counter irritation*'. It has been suggested that pain may be possibly caused as a result of the accumulation of metabolic waste products in the tissues, and an increased flow of blood in the region is the possible mechanism that is responsible to remove these substances and relieve pain. Another possibility is that the pain releasing mechanism is associated with muscle relaxation. Pain due to acute inflammation or recent injury is relieved most efficiently by mild heat. When pain is long standing or of chronic type, heating temperature may be increased up to 360 °C. A possible mechanism using paradigm shift approach is not described here but will be

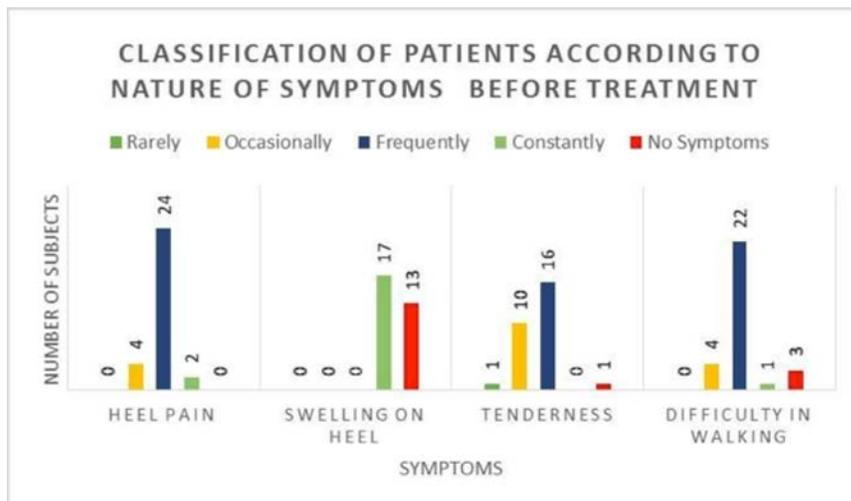


Figure 2: Classification of patients according to their nature of symptoms pre-treatment

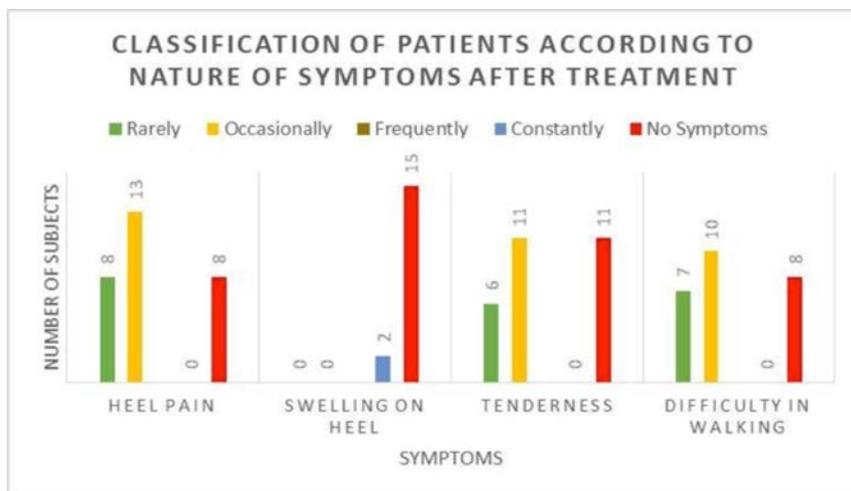


Figure 3: Classification of patients according to their nature of symptoms post-treatment

information (straight line scale), 77.57% patients got relieved from heel pain after treatment. Most of the patients got immediate pain relief after Agnikarm therapy. There were no changes found in calcaneal spur present in X-Ray readings

during and after the study. After the second sitting of Agnikarma, all the patients were observed for 30 days (total duration of follow up) and the results obtained after Agnikarm was sustained in patients 100%.

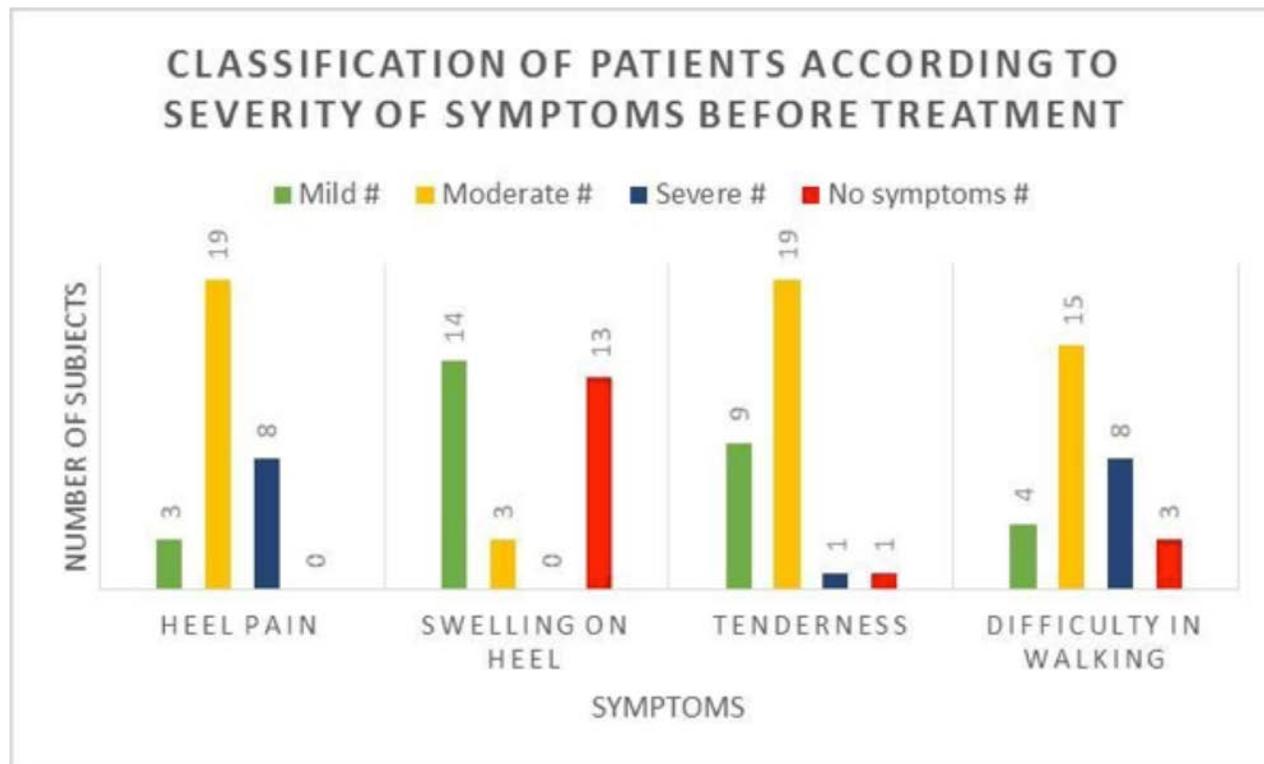


Figure 4: Classification of patients according to severity of symptoms pre-treatment

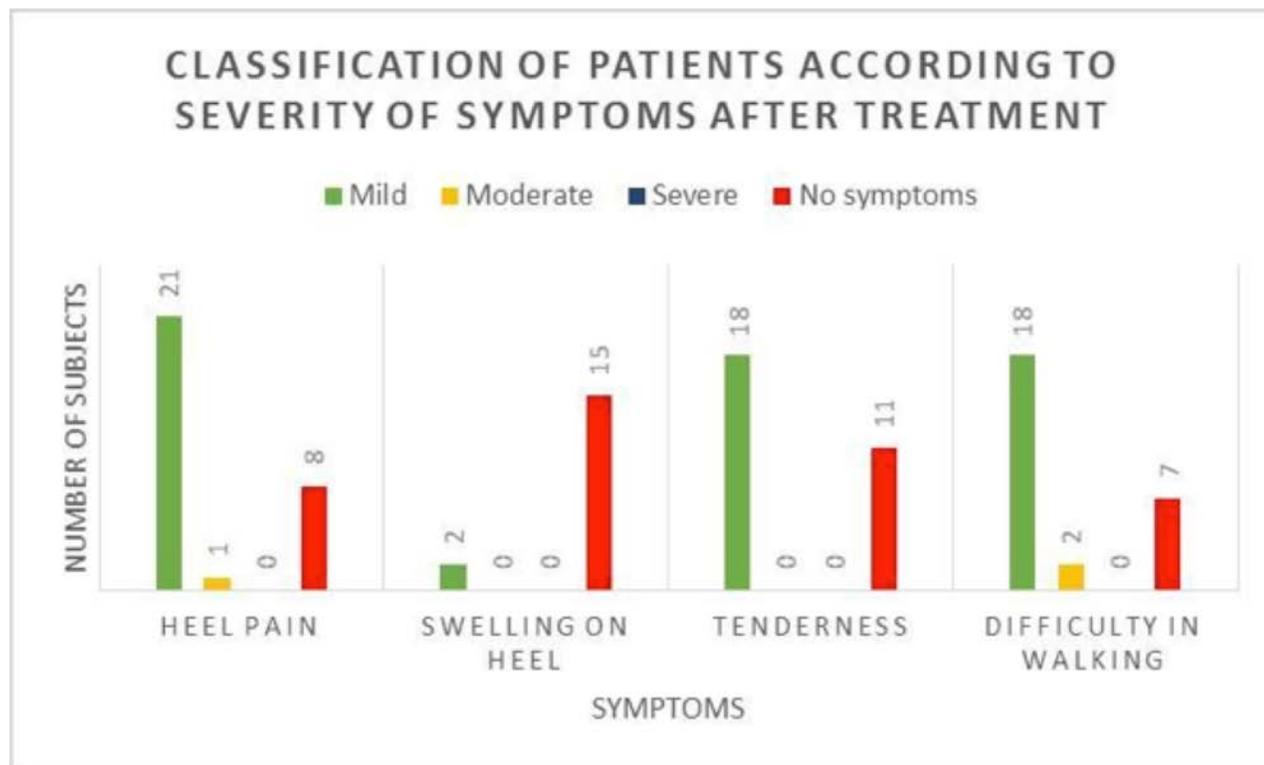


Figure 5: Classification of patients according to severity of symptoms post-treatment.

Table 2: Classification of patients according to relief after treatment

| # | Symptoms | Number of Patients | Patients with Symptoms | Relieved or Cured | | Symptomatic Relief | |
|---|-----------------------|--------------------|------------------------|-------------------|------------|--------------------|------------|
| | | | | Patients | Percentage | Patients | Percentage |
| 1 | Heel pain | 30 | 30 | 8 | 26.6 | 22 | 73.03 |
| 2 | Swelling On heel | 30 | 17 | 15 | 88.2 | 2 | 11.80 |
| 3 | Tenderness | 30 | 29 | 11 | 37.9 | 18 | 62.10 |
| 4 | Difficulty In walking | 30 | 27 | 7 | 25.92 | 20 | 74.08 |

Table 6: Effect of Agnikarm therapy in heel pain by comparing averages (mean) of two samples in which observations in one sample can be paired with observations in the other called as the paired 't' test

| # | Groups Numbers | Difference of Mean | Standard Deviation | Standard Error | 't' Value | Probability (P) |
|---|------------------------|--------------------|--------------------|----------------|-----------|-----------------------|
| 1 | Heel pain After 1 week | 101.5±3.4 | 0.74 | 0.13 | 26.15 | P < 0.001 Significant |
| 2 | Heel pain After 2 week | 101.5±3.4 | 0.74 | 0.13 | 26.15 | P < 0.001 Significant |
| 3 | Heel pain After 3 week | 146.5±4.9 | 0.89 | 0.16 | 30.24 | P < 0.001 Significant |
| 4 | Heel pain After 4 week | 184±6.13 | 0.9 | 0.16 | 38.31 | P < 0.001 Significant |

Conclusion

In this preliminary clinical research, the efficacy of Agnikarm in the management of heel pain was clinically demonstrated on 30 patients. Over all our clinical research and statistical analysis proved the significant role of Agnikarm in the effective management of heel pain. In comparison with "standard"-established medical intervention, Agnikarm is a cost effective, easy to practice, less complicated, quick relief treatment that does not require surgeries or hospitalization. Agnikarm can be an acceptable alternative to contemporary heel pain modalities. However, further research is needed to establish the complication levels as well as expanding the study with involvement of broader cohort of study specimens. Moreover, to understand and interpret the study results, "modern" cellular level mechanistic studies, in order to further our understanding the findings, are warranted. Over all we conclude that Agnikarm is a cure of underlying causes, rather than just treating pain; it not only relieves pain, but also help restore the body to fundamental health by addressing root causes. The authors hope this paper can bring a lot of light on the ancient ways of healing that can be beneficial to the humanity as a whole.

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