A PRELIMINARY STUDY ON EVALUATION OF CLINICAL EFFECT OF AGNIKARMA CHIKITSA ON PARSNISULA (PLANTAR FASCITIS)

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Females of late 30’s commonly suffer with a clinical condition called Parsnisula. In this condition the patient experiences severe pain under the heel (parsni). The characteristic feature of parsnisula is pain which will get increased during walking or standing from sitting posture. After few steps the pain will get reduced.

Not much description is available in classical literature of Ayurveda regarding Parsnisula. It can be compared with plantar fascitis of modern medicine based on the symptomatology.

Modern practitioners usually prescribe NSAID’s and protect heel by a resilient cushion on an insole. If pain is not relieved then local injection of hydrocortisone into the tender area is the alternate.

Whereas in Ayurvedic system of medicine Agnikarma-an Ayurvedic para-surgical procedure has been indicated and practiced in this condition by ancient physicians of Ayurveda since centuries.

In support of this, a preliminary study has been carried out by Central Research Institute, Cheruthuruthy, Kerala and 30 patients in total have accepted the trial procedure and Agnikarma therapy was performed over the affected heel. On the basis of clinical improvement by symptomatic observation encouraging results were obtained by the study.

Introduction

Parsnisula is a common clinical condition found especially among females in late 30's. In this condition, the patient experiences unbearable pain under the parsni (heel) (S.Sa.5/19) particularly during walking or standing from sitting posture when the weight of the body is carried by the heel and quite common during early morning after getting up from bed.

Not much description is available in classical literature of Ayurveda regarding Parsnisula. As Vata is mainly responsible for pain in the body, so Parsnisula can be considered as a Vata predominant disorder where characteristic pain is the cardinal symptom.

Parsnisula of Ayurveda can be compared with plantar fascitis of modern medicine. Plantar fascitis is a common cause of heel pain in adults. It is otherwise popularly known as Policeman's heel or tender heel pad and is characterized by pain beneath the hind part of the heel (anterior part of the calcaneus) (Fig.10 & Fig.11) on standing or walking from sitting posture. The cause may be a small tear in the attachment of plantar fascia to the os calcis (Fig.9). Non specific infection from non specific urethritis or from specific gonococcal infection may also develop in this condition. Sometimes a bony spur at the attachment of the plantar fascia may be the cause. This may or may not be the cause of pain. The site of the tenderness is the tough fibro-fatty tissue beneath the prominent weight bearing part of the calcaneus. In most cases mild inflammation of uncertain origin will be there but in some cases the lesion is only a simple contusion. Pain beneath the heel extending medially and into the sole on standing or walking is the only symptom. The disability is sometimes severe. On examination there is well marked local tenderness over the site of attachment of the plantar fascia to the calcaneus on firm palpation over the heel pad. The site of tenderness is farther forward than it is in tender heel pad. Radiographs usually do not show any abnormality. There is a tendency to slow spontaneous improvement. Recovery may be hastened by providing a sponge-rubber heel cushion on an insole and by local injection of hydrocortisone or by a course of short-wave diathermy to the tender area.

Central Research Institute (Av.), Cheruthuruthy is a reputed Institute of the area and popularly known as Institute of excellence in Panchakarma wherein Panchakarma procedures are practiced regularly with good results. Patients suffering with Parsnisula visit to O.P.D of this Institute very frequently. Agnikarma (a Para-surgical procedure) has been indicated and practiced in Parsnisula by ancient physicians of Ayurveda since centuries. This has drawn our attention towards the disease and made us to carry out a pilot study of 6 weeks treatment with Agnikarma over 36 selected patients at O.P.D level.
Material and Methods

1. Selection of Patients

Those Patients were selected from OPD who have suffered from Parsnisula (with special reference to Plantar fascitis) having less than 2 years of history with all cardinal features irrespective of age, sex, religion and occupation etc.

1.1 Inclusion criteria

* Age between 12-60 years.
* Patients of either sex.
* With less than 2 years of history.
* With all cardinal features of the disease (i.e. Tenderness, Pain, localized swelling, Pain increased during walking from sitting posture/rest)

1.2 Exclusion criteria

* Any concomitant serious disorder of the liver, kidneys, lungs, eye and/or multi-systemic involvement, i.e. Diabetes mellitus, Chronic Renal failure, Bronchial asthma etc.
* Any other drug treatment being received simultaneously that influenced the positive study outcome.
* Without clear signs and symptoms.
* Other related cases like fracture or diseases of Calcaneum (Osteomyelitis or tumor or Paget’s disease), arthritis of the subtaloid joint, Calcaneum Spur, Tendo Achilis bursitis, retrocalcaneum bursitis, Apophysis of the Calcaneum (Sever’s disease) and rupture and paratendinitis of the tendo Achilis, infracalcaneum bursitis, Rheumatism, local Cellulitis etc. Ski graphic views were taken for exclusion from the study.
* Age below 12 years and above 60 years.

1.3 Number of Patients

36 (Thirty Six)

1.4 Duration of therapy (Agnikarma)

6 weeks

2. Agnikarma Chikitsa is the method of producing Samyak Dagdha Vrana at diseased part of the patient. It is a therapeutic burn. This Upakrama (method of treatment) is divided into three parts (S.Su.5/4) i.e. Purvakarma (pre-operative preparation), Pradhanakarma (Operation proper) and Pascatkarma (post-operative management). Disease produced by Vata and Kapha dosa may be treated successfully by this method of treatment.

2.1 Purvakarma (Pre-operative procedure/preparations)

Collection of the materials required for the Agnikarma therapy forms the prime pre-requisite. Panchaloha Shalaka, Patra of Ghritakumari (Aloe vera) and mixture of Ghrita
and Madhu is kept ready prior to the actual procedure.

Localized anti-septic dressing (ASD) of affected part of the patient was done every time before principal procedure. Patients were allowed to take langhu ahara (light food) 30 minutes before the actual procedure to avoid fasting condition and associated weakness.

2.2. Pradhanakarma (Principal procedure)

After anti septic dressing (ASD), the proper procedure i.e. Agnikarma Cikitsa was done with Shalaka made up of Panchaloha (Gupta P. D.,) 1993) as panchaloha Shalaka is said to be ideal produce Samyak Dagdha Vrana (S.Su.12/8). Panchaloha Shalaka was kept on fire and heated red hot and applied over the affected area or diseased part i.e. heel frequently to produce Samyak Dagdha Vrana along with the application of the pulp of Ghritakumari (Aloe vera) in between to prevent burns if excess heat is applied and to reduce dagdha Vedana (burning pain). The type of Agnikarma adopted is Twakdagdha S.Su.12/7) and is done in Bindu Akriti or dot pattern(S.Su.12/11). This method of Agnikarma Chikitsa is result oriented having no complication and easy to carry out.

The total procedure may be continued for maximum 15 minutes and the sittings of Agnikarma Chikitsa varies depending on the severity and chronicity of the disease and patient’s condition. Agnikarma was done in 6 sittings. 1 sitting per week i.e.6 sittings in 6 weeks.

2.3. Paschatkarma (Post-operative procedure)

As per guidelines of Susruta (S.Su.12/13), mixture of Ghrita and Madhu (may be due to its soothing effect) is anointed over the heel after the principal procedure.

2.3. Assessment criteria for evaluation

The results were on before treatment, 14th day, 28th day and after treatment (42nd Day). The four cardinal signs & symptoms were taken for assessment like Pain in morning, tenderness of heel, typical pain increased when standing/ walking/ running after getting up from sitting posture and localized swelling. The clinical improvement of disease condition was evaluated on the basis of signs and symptoms by means of arbitrary scoring index, where 04 indicated severe and 03 indicated marked or fair, 02 indicated moderate, 01 for mild or poor and 0
for nil or none. The results were evaluated before treatment, 14th day, 28th day, and after treatment (42nd Day).

Observation & Results

1. Demographic data

1.1. Age & sex ratio

Total 36 patients were selected for this present study where 30 patients have completed the 28 days trial. All patients were female (100%) and no male patients have been seen. Most of patients (14 cases) were belongs to middle age group (31-40 years) in the pre-menopausal age (fig.1).

1.2 Religion wise classification

From the present study it is observed that 76.6% patients belong to Hindu community and 23.4% patients are from Muslim community (fig.2).

2. Symptomatological assessment

The signs and symptoms were assessed by the scoring index on 0 day, 14th day, 28th day and 42nd day of treatment. Pain in rest and morning had been reduced significantly after treatment (p<0.001) when compared with 0 day value (Table-I, fig.3). One of the most common objective criteria of (plantar fascitis) is tenderness of heel. It was also scored by arbitrary index and treated patients have got highly signification response (p<0.001) when compared with the value of before treatment (Table-II fig.4). It is also observed that treated patients have got good response from typical pain increased when walking/ running after sitting or resting posture. Treated patients have got significant response (p < 0.001) when compared with 0 day Value (Table-III, fig 5). Treated patients also have got very good response from local swelling or edema (p<0.01) when compared with 0 day value (Table-IV, fig.5 & 6).

![Fig 1: Age- Sex ratio of trial cases of Parsnisula](image1)

![Fig 2: Religion wise demographic data of Parsnisula cases](image2)
Table I: Clinical improvement of tenderness of heel in *Parsnisula* cases

<table>
<thead>
<tr>
<th>0 day</th>
<th>7th day</th>
<th>14th day</th>
<th>21st day</th>
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<tbody>
<tr>
<td>2.57 ± 0.160</td>
<td>1.83 ± 0.128*</td>
<td>1.03 ± 0.148*</td>
<td>0.5 ± 0.142*</td>
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* p<0.001, values are mean ± SEM, where n =30

Fig 3: Clinical improvement of Local 12ed-pain in heel of *Parsnisula* cases

Fig 4: Clinical improvement of tenderness of heel in *Parsnisula* cases
Table III: Clinical improvement of typical pain in standing/walking just after sitting or laying in *Parsnisula* cases

<table>
<thead>
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<th>0 day</th>
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<th>14th day</th>
<th>21st day</th>
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<tbody>
<tr>
<td>2.1± 0.140</td>
<td>1.37 ± 0.139*</td>
<td>0.90 ± 0.129*</td>
<td>0.40 ± 0.132*</td>
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</table>

* p<0.001, values are mean ± SEM, where n =30

Fig 5: Clinical improvement of typical pain in standing/walking just after sitting or laying in *Parsnisula* cases

Table IV: Clinical improvement of localized swelling in heel of *Parsnisula* cases

<table>
<thead>
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<th>0 day</th>
<th>7th day</th>
<th>14th day</th>
<th>21st day</th>
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<tr>
<td>0.47 ± 0.120</td>
<td>0.26 ± 0.095*</td>
<td>0.13 ± 0.079*</td>
<td>0.10 ± 0.073*</td>
</tr>
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* p<0.001, values are mean ± SEM, where n =30

Fig 6: Clinical improvement of localized swelling in heel of *Parsnisula* cases
Fig 7: Global assessment on symptomatic improvement in *Parsnisula* cases.

Fig 8: Individual assessment as per subjective scoring of *Parsnisula* cases.
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Fig 9: Showing Plantar fascia

Fig 10: Showing most common site (lateral view) of pain in *Parsnisula*

Fig 11: Showing most common site (Inferior-superior view) of pain in *Parsnisula*
Discussion

Plantar fascitis is an inflammation of the plantar fascia. "Plantar" means the bottom of the foot; "fascia" is a type of connective tissue, and "itis" means "inflammation".

Pain in the heel may be subdivided into 3 types.

(a) Pain within the heel
(b) Pain behind the heel
(c) Pain beneath the heel

In conditions like fracture or disease of the calcaneus (osteomyelitis or tumor or Paget’s disease) and arthritis of the subtaloid joint there will be pain within the heel and in tendo Achilis Bursitis, retrocalcaneum bursitis, apophysitis of the calcaneum (Sever’s disease) and rupture and paratendinitis of the tendo achillis pain will be behind the heel.

Whereas in infra-calcaneum bursitis and plantar fascitis (Policeman’s heel) pain will be beneath the heel.

Sometimes parsnisula is wrongly correlated with Calcaneal spur. Calcaneal spur is a bony projection forwards from undersurface of the calcaneal tuberosity and is usually revealed in X-Ray. It’s nothing but ossification of the plantar fascia at its calcaneal end. This has very little significance so far as the pain in the heel is concerned. That means if a patient complains of pain in the heel and on X-Ray one can find the presence of calcanean spur, the clinician cannot infer that the calcanean spur is the cause of pain. Very often inflammation of the soft tissue or a bursa beneath the spur gives rise to pain.

Heel spurs are soft, bendable deposits of calcium that are the result of tension and inflammation in the Plantar fascia attachment to the heel. The plantar fascia encapsulates muscles in the sole of the foot. It supports the arch of the foot by acting as a bowstring to connect the ball of the foot to the heel. When walking and at the moment the heel of the trailing leg begins to lift off the ground, the plantar fascia endures tension that is approximately two times body weight. This moment of maximum tension is increased and "sharpened" (it increases suddenly) if there is lack of flexibility in the calf muscles. A percentage increase in body weight causes the same percentage increase in tension in the fascia. Due to the repetitive nature of walking, plantar fascitis may be a repetitive stress disorder (RSD). Moreover, the lesion affects the soft tissues at the site of attachment of the plantar aponeurosis to the inferior aspect of the tuberosity of the calcaneus.

From this present study it has been observed that Parsnisula or Plantar fascitis is commonly seen in female subjects specifically in pre-menopausal age (31-40 yrs.). Plantar fascitis is a common cause of heel pain in adults. The pain is usually caused by collagen degeneration at the
caused by collagen degeneration at the origin of the plantar fascia at the medial tubercle of the calcaneus. This degeneration is similar to the chronic necrosis of tendonosis, which features loss of collagen continuity, increases in ground substance (matrix of connective tissue) and vascularity and the presence of fibroblasts rather than the inflammatory cells usually seen with the acute inflammation of tendonitis.

Conclusion

Agnikarma Chikitsa as heat therapy is practiced in parsnisula since ancient era by Ayurvedic scholars Parsnisula is mostly similar to the conditions of plantar fascitis as per clinical features. The classical sign of Plantar fascitis or Parsnisula is that the worst pain occurs with the first few steps in the morning. Patients often notice pain at the beginning of activity that lessens or resolves as they warm up. The pain may also occur with prolonged standing and is sometimes accompanied by stiffness and tenderness by examination associated with slight swelling of heel. In the present study it was seen that female were mostly affected those who were belongs to pre-menopausal may due to sudden weight gain and less movement or activities. From this study it was observed that all patients have got highly significant clinical improvement on the basis of subjective scoring and it may be concluded that Agnikarma is the right solution for the treatment of Parsnisula. It is also revealed from this study that 15 patients have got excellent response, 11 patients have got fair response whereas 4 patients have got no response on the basis of individual assessment of symptoms. Moreover, it is also very much cost effective and cost benefited treatment and no adjuvant therapy or drugs required.

The probable mode of action of Agnikarma Chikitsa is by doing Agnikarma the Agni from the stove/gas flames is taken by Shalaka and it becomes red hot. Then this Agni (heat) is transferred from the Shalaka to the Dushya-Dhatu (skin). The time taken for this transfer of heat is two to three seconds. The Dhatu-Agni in the skin becomes Utklesita (activated) and the disease producing Dosa becomes neutral by Dosha-pachana action of the Utklesita Dhatu-Agni.

So it can be concluded that local disorders produced by Vata dosha or Kapha dosha are beneficially treated by this result oriented method of Agnikarma Chikitsa.

Acknowledgement

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सारांश

प्लांटर फॉस्सैटिस् (Plantar Fascitis) पर अग्निकर्म चिकित्सा — एक सहायक पद्धति के चिकित्सकीय प्रभाव का मूल्यांकन—एक प्रारंभिक अध्ययन

जी. कुशुमा, ए. मित्र, वी. सी. दीप, वी. मधुविक्कुटिट, वी. के. एस. नायर, वी. ए. प्रभाकरन एवं एन. जया

पार्श्व शूल एक सर्व साधारण चिकित्सा अवस्था है जो विशेष रूप से तीस साल से ऊपर होनेवाली महिलाओं में देखा जाता है। इस अवस्था को बैठने के बाद ठहरने या उठके खड़े होने में ज्यादा दर्द एड़ी में महसूस होता है। कुछ कदम चलने के बाद दर्द कम हो जाता है।

आयुर्वेद के शास्त्रों में इस व्याधि का अधिक उल्लेख नहीं मिलता। इस व्याधि को लाभार्थीक आधार पर आधुनिक शास्त्र के प्लांटर फॉस्सैटिस (Plantar Fascitis) से तुलना कर सकते हैं।

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आधुनिक वैद्य सामान्यतः NSAID’s का निर्देशन करते हैं और एडे को लचीलापन उपधान (Resillient cushion) से रक्षा करते हैं। दर्द कम नहीं होने पर हेड्रोकॉर्टिसोने (Hydrocortisone) के स्थायिक इन्जेक्शन ही विकल्प हैं।

परन्तु आयुर्वेद के चिकित्सा पद्धति में अग्निकर्म (एक सहशल्यक पद्धति) को सदियों से प्राचीन वैद्यों ने इस अवस्था में उपयोग का संकेत दिया है।

इसके समाधान में, एक प्रारंभिक अध्ययन केंद्रीय अनुसंधान संस्थान (आयु), चेतुलुन्तित, तृण्यूर, केरल में किया गया और तीस रोगियों ने इस परीक्षण पद्धति को स्वीकार किया। प्रभावित पैर पर अग्निकर्म को किया गया और इस अध्ययन में लाभार्थिक प्रेक्षण द्वारा चिकित्सकीय सुधार के आधार पर औद्योगिक परिणाम प्राप्त हुए।