



Case Study

AYURVEDIC MANAGEMENT OF PERIPHERAL VASCULAR DISEASE

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ABSTRACT

Peripheral Arterial Disease (PAD) is a condition that reduces blood flow to the lower limbs due to arterial narrowing. It is commonly caused by atherosclerosis and aggravated by chronic smoking. In Ayurveda, PAD can be correlated with *Vataraktha*, a condition arising from vitiation of *Vata* and *Rakta* leading to obstruction and impaired circulation. The patient had severe pain, burning sensation, numbness, and difficulty in walking. A comprehensive Ayurvedic treatment was administered in four stages, including *Udwarthanam*, *Snehapana*, *Virechana*, *Dasamoola Ksheeradhara*, *Jaloukavacharana* (leech therapy), and *Shilajit Rasayana*. Internal medicines like *Guggulutiktakam Kashayam*, *Kaishora Guggulu*, and *Chandraprabha Vati* were also used. After completion of therapy, the patient showed complete relief from symptoms, restoration of peripheral pulses, and improved blood flow, with Doppler ultrasound revealing conversion of monophasic to biphasic flow in the anterior tibial artery. The treatment helped reduce inflammation, improve circulation, and rejuvenate vascular tissues. This case highlights the potential effectiveness of Ayurvedic therapies in improving both symptoms and hemodynamic parameters in PAD. Although the results are promising, larger clinical studies are needed to further validate the role of Ayurveda in managing peripheral vascular diseases.

INTRODUCTION

Peripheral arterial disease (PAD) is a circulatory problem causing a reduced blood flow through the arteries. PAD results from the isolated and/or combined loss of reduced flexibility in arteries, abnormal platelet clumping and damage to small blood vessels, is seen in cases of hypertension, hyperglycaemia, hyperlipidaemia, hypercholesterolemia, and smoking^[1]. This disease is usually caused by atherosclerosis. Atherosclerotic plaques in PAD narrow the arteries, restricting blood flow to the legs. This reduced blood flow can cause pain in the thigh or calf when walking, due to temporary muscle ischemia. This walking pain is known as intermittent claudication, characterized by limping or pain that subsides with rest^[2].

Uncontrolled, long-standing hypertension lowers the vasodilatory effects of endothelial cells and activates the renin-angiotensin-aldosterone system (RAAS), which leads to hyaline atherosclerosis and loss of arterial elasticity^[3]. Type II DM has been linked to PAD through WBC-induced endothelial dysfunction^[4]. Smoking causes decreased vasodilation and inappropriate platelet aggregation, leading to atherosclerosis and thrombotic events^[5]. Walsh et al^[6] found that heavy smokers and former heavy smokers have a significantly increased risk of developing superficial femoral artery atherosclerosis. In addition, passive smoking increases the risk of coronary artery diseases; smoking exerts its effect through cyclical short- and long-term mechanisms. The short-term mechanism involves the increased aggregation of platelets, contributing to the inflammatory response that leads to atherosclerotic plaque formation^[7]. Prior to vascular structural changes, inflammatory cellular modifications precede atherosclerotic formation, which includes declining contraction of the vessels^[8]. Smoking products such as benzo(a)pyrene

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injure the endothelial cells, exposing subendothelial factors and promoting atherosclerotic plaque formation^[9].

As per Ayurveda, PAD can be considered under *Vataraktha* spectrum of diseases. *Vataraktha* is a *Raktha pradoshaja vyadhi*, one among the *Mahavatavyadhi*. *Uttana* and *Gambeera* are the types of *vataraktha* depending on the involvement of *Dhathus*. *Uttana vatarakta* is the Ayurvedic term for peripheral blood vessel disease. Blockages (*Avarana*) occur when the *Kapha* and *Pitta doshas* accumulate in the blood channels, or *Marga*^[10]. Considering the symptoms of *Tvakvaivarnyata*, manifestations of diseases related to *Twak* such as *Vrana/ Dalitatwak/Tvaksphutana*, predominance of *Shoola/ Toda* in the area affected. *Dhamanisankocha* and *Margavarana* assessed in terms with the atherosclerosis in the distal arteries, *Vatarakta* may be considered as a parallel diagnosis to peripheral vascular diseases owing to the similarities in the symptomatology^[11].

Case Report

A 60-year-old male patient, who does farming activities for daily wages and has a habit of smoking 1-2 packets of cigarette for the past 35 years, visited the hospital with complaints of pain over both legs and foot associated with numbness and burning sensation for the past 4 months. He is also unable to walk continuously for more than 10 minutes due to pain on feet. The pain was sudden in onset. Burning sensation and difficulty in walking developed gradually and was followed by gradual development of numbness. Initially he applied some topical ointments without consulting a doctor. It did not relieve and as the complaints worsened, he consulted our hospital for further management. He had no history of any comorbidities and was not under any medication currently.

Clinical Findings

The patient was of lean built and moderate nourishment had antalgic gait associated with claudication on walking for 10 minutes. The intermittent claudication was of Stage II b (Fontaine classification). There was no discoloration, swelling, skin eruption or structural deformities on inspection. Grade 2 tenderness was elicited over bilateral foreleg and foot, markedly over the toes. There was perceivable hypothermia of foot and foreleg of both lower limb in relation with other

parts of the body. Pulse over the dorsalis pedis was absent (grade 0) and posterior tibial artery was faint but detectable (grade 1) on both limbs. Buerger's postural test was positive at 40 degrees and venous refilling was found in 30-40 seconds on both sides.

Timeline

First stage - 8/11/23 to 14/11/23

Udwarthanam with *Kolakularthyadi choornam* - 7 days

Second stage - 15/11/23 to 25/11/23

Snehapanam with *Sahacharadi Mezhlukupakam*-7 days *Abhyangam* and *Ooshmaswedam* -3 days

Virechanam with *Avipathi choornam*

Third stage -26/11/23 to 3/12/23

Dasamoolam ksheeradhara - 7 days

Jalukavacharanam- 2 sitting

Fourth stage - 4/12/23 to 18/12/23

Rasayanam with *Shilajath* - 15 days

Investigations

On doppler ultrasound study revealed monophasic flow of anterior and posterior tibial artery.

Diagnostic Assessment

Clinical finding and special investigations were suggestive of peripheral arterial diseases.

Therapeutic Intervention

After explaining about the planned procedures and having informed consent, the patient admitted to our hospital, and was administered with four stages of treatment along with internal medication (table1). The therapy commenced with *Udwarthana* for seven days with *Kolakularthyadi choorna*. Following that *Snehapana* (internally) with *Sahacharadi thaila* (*Mezhukupakam*) was done for seven days. Starting at a dose of _ml and dose was increased daily according to the *Agni* and *Dahana shakthi* of the patient. A total of _ml was consumed over the span of 7 days. After attaining features of *Samyak snehana* and undergoing proper *Poorvakarma*, *Virechana* was administered with *Avipathy choorna*. As the next stage *Dasamoola ksheera Kashaya dhara* was done for the seven days. *Jaluka* was done as two sittings with an interval of one week over the right mid-thigh region of the patient (table2). Treatment was concluded with *Shilajith rasayana* administration for 15 days. (Table 3)

Table 1: Internal Medication

Internal medicine	Dose	Time
<i>Gugguluthikthakam kashayam</i>	90ml	Bd-B/F
<i>T.Kaisoraguggulu</i>	1-0-1	A/F
<i>Pippalyasavam</i>	25ml	Bd-A/F
<i>T.Chandraprabha</i>	1-0-1	A/F

Table 2

Date	Treatment	Medicine
8/11/23 to 14/11/23	<i>Udwarthanam</i>	<i>Kolakularthyadi choornam</i>
15/11/23 to 21/11/23	<i>Snehapanam</i>	<i>Sahacharadi Mezhukupakam</i>
22/11/23 to 24/11/23	<i>Abhyangam & Ooshmaswedam</i>	<i>Sahacharadi thylam</i>
25/11/25	<i>Virechanam</i>	<i>Avipathy Choornam</i>
26/11/23 to 03/12/23	<i>Dasamoolam Ksheeradhara</i>	<i>Dasamoolam</i>
26/11/23 & 03/12/23	<i>Jaloukavacharana</i> done	Site- Both thighs
04/12/23 to 18/12/23	<i>Shilajith Rasayana</i>	

Table 3

Date	Medicine	Dose	Time
4/12/23 to 6/12/23	<i>Thikthakam ghritham</i>	25gm	Bd – B/F
7/12/23 to 9/12/23	<i>Shilajith</i>	25gm with <i>Triphala kashaya</i>	Morning B/F
10/12/23 to 12/12/23	<i>Shilajith</i>	25gm with <i>Padoladi kashaya</i>	Morning B/F
13/12/23 to 15/12/23	<i>Shilajith</i>	25gm with <i>Yashtimadhu kashaya</i>	Morning B/F
16/12/23 to 18/12/23	<i>Shilajith</i>	25gm with <i>Gugguluthikthakam kashaya</i>	Morning B/F

RESULT

After the treatment, the patient was relieved of his presenting complaints. Pain, burning sensation and numbness was completely alleviated with the treatment. There was no tenderness, hypothermia over the foreleg, foot or the toes. The bilateral posterior tibial and dorsalis pedis pulses became normal, palpable (grade 3) and the Buerger's postural test was negative. Doppler ultrasound taken on 02/24 revealed that the monophasic flow before treatment of the posterior tibial artery have become reduced to monophasic flow and that of anterior tibial artery have become biphasic flow.

Signs & symptoms	Before	After 1 st stage	After 2 nd stage	After 3 rd stage	After 4 th stage
Tenderness	Present	Present	Reduced	Absent	Absent
Pulsation	Feeble	Feeble	Feeble	Feeble	Good
Burning sensation	Present	Present	Absent	Absent	Absent
Hypothermic	Present	Present	Absent	Absent	Absent
Claudication	Present	Present	Absent	Absent	Absent

Doppler ultrasound

	Before	After
Anterior tibial artery	Monophasic flow	Biphasic flow
Posterior tibial artery	Monophasic flow	Reduced monophasic flow

DISCUSSION

Peripheral Arterial Disease (PAD) is a debilitating and progressive disease. It is characterized by the narrowing of the peripheral arteries, most commonly due to atherosclerosis, leading to thickening of the arterial wall, reduced elasticity and plaque formation which produced symptoms like intermittent claudication, numbness and burning pain. In the pathogenesis of these in this case, the history of chronic smoking has played a major role. Smoking is well documented in the pathogenesis of PAD as it promotes platelet aggregation, endothelial injury and inflammation.

The clinical examinations revealed a classic sign of Stage IIB PAD (Fontaine classification). Doppler ultrasound was confirmatory of the arterial compromise with monophasic flow in both anterior and posterior tibial arteries. From the ayurvedic perspective, PAD can be considered under *Vatarakta*, which represents the vitiation of *Vata* and *Raktha* in the *Srotas*, leading to obstruction and functional deterioration. Symptoms such as *Shoola* (pain), *Toda* (pricking pain), *Twakvaivarnyata* (skin discoloration), *Dhamani sankocha* (arterial narrowing), and *Margavarana* (channel obstruction) are relatable with the clinical features of PAD.

The treatment followed in this case as a whole address both systemic and local pathology. It can be dissected in to four phases. *Udwarthanam* provides a mild *Rookshana* required prior to the *Snehana*. It also promotes peripheral circulation through mechanical stimulation. *Snehapana* with *Sahacharadi Mezhukupakam*, followed by *Virechana*, could have enabled internal oleation and elimination of the doshas. It in turn improves the metabolic function and thereby helps in removal of obstruction. Anti-inflammatory and analgesic effects could have been provided by the *Dasamoola Ksheeradhara*, while *Jalukavacharana* (leech therapy) which is a local bloodletting, yet it would have promoted detoxification, potentially relieving stagnation and enhancing arterial perfusion. *Shilajatu rasayana*, is a classical rejuvenate medicine, may have helped in restoring the vascular structures and promote healing of the damaged tissue.

The improvement found in the patient was not only symptomatic, but also hemodynamic. The hypothermia was reversed; peripheral pulses were normalized and the improvement in the symptoms such as claudication indicates the restoration of the arterial function.

The findings in the Doppler study post treatment revealed a transition from monophasic to biphasic flow in the anterior tibial artery and improved posterior tibial artery flow. These results indicate improved arterial elasticity and perfusion. Even though individual response may vary, successful management of this condition emphasizes the importance of integration of Ayurveda treatment. The absence of comorbidities in this patient might have favoured the outcome.

However, this case highlights the potential benefits of Ayurveda treatment in PAD. Further controlled studies are required to evaluate the efficacy of these interventions on large scale for the better understanding of the pharmacological effects.

CONCLUSION

This case report shows that Ayurvedic treatment can offer significant relief in patients with Peripheral Arterial Disease (PAD). The patient, who had symptoms like leg pain, burning sensation, and numbness, responded well to a planned Ayurvedic therapy that included external treatments, internal medications, *Panchakarma* procedures, and *Rasayana* therapy. By the end of the treatment, the patient showed complete relief from symptoms and marked improvement in blood flow, as seen in Doppler ultrasound findings. The treatment not only reduced pain and improved walking ability but also helped restore vascular function. While this is a single case, it suggests that Ayurveda, when properly applied, may offer a valuable approach in managing PAD. However, more clinical studies on larger groups are needed to support these findings and understand the full potential of Ayurvedic therapies in vascular diseases.

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