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Case Report

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Ayurveda Management in Atherosclerotic changes – A Case Report

Mohan M.[1], Devan R.[2], Aswani M.[3], Jemima T.[4], Savita S.[5], Ashima[6]

1. Professor Vishnu Ayurveda College, Shoranur, Kerala
2. Associate Professor Vishnu Ayurveda College, Shoranur, Kerala
3. House Surgeon, Vishnu Ayurveda College, Shoranur, Kerala
4. House Surgeon, Vishnu Ayurveda College, Shoranur, Kerala
5. House Surgeon, Vishnu Ayurveda College, Shoranur, Kerala
6. House Surgeon, Vishnu Ayurveda College, Shoranur, Kerala

ABSTRACT:

Atherosclerosis is one of the common arterial diseases. The symptoms include intermittent claudication, rest pain and gangrene with arterial occlusion. In Ayurveda, there is no direct resemblance term for arterial thrombosis, but the term `Dhamani-Pratichaya(arterial thrombosis) described under kaphaja nanatmaja vikara can be correlated with arterial thrombosis. According to Ayurveda, arterial thrombosis is a rakthadhathu dhushtijanya disease. Rakthamokshana (jalaukavacharana) is an ancient and crucial parasurgical procedure for treating rakthadushtijanya disease. A 53-year-old male having atherosclerotic changes in both legs, complaints of severe leg pain and intermittent claudication, visited the hospital, where he was treated with jalaukavacharana (Bloodletting by leech application). This case is discussed.

KEYWORDS: Atherosclerotic changes, raktadushti, jalaukavacaharana, leech therapy.

CORRESPONDING AUTHOR:

Dr. Mrudul Mohan

Professor Vishnu Ayurveda College, Shoranur, Kerala

Email: dr.devanreghunath@gmail.com Mobile no : 9645374650

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INTRODUCTION:

Athero- changes are a chronic, complex inflammatory condition of elastic and muscular arteries, involving both systemic and segmental changes. It affects men more than women. Old age, cigarette smoking and diabetes mellitus, hyperlipidemia, hypertension and hyper- homocysteimia are also important risk factors are major risk factors. In atherosclerotic changes, the patient often complains that after walking a distance called the 'claudication distance,' the pain starts. Sometimes, if the patient continues to walk, the metabolites increase the muscles' blood flow and sweep away the P-substances produced by exercise, and the pain disappears. More often, the pain can still be managed with effort (Grade II). But mostly, the pain compels the patient to take rest (Grade III, Boyd's classification). [1] Accumulation of Kapha (biological humor) and Medha (fat) in blood results in Dhamani pratichaya, which is a Raktadoshaja (vitiated blood). This excess accumulation of Kapha (biological humor) and Medha (fat) in blood is called “Shonitabinshandan” (thickness of blood), which leads to Sirajgranthi (clot in artery). In Charaka Samhita, Dhamani Sankoch, Gambhir Vatarakta, is not only related to thrombosis but can also be correlated to vasospasm. [2]

CASE REPORT

Patient Information

A 53-year-old male patient residing in India presented with complaints of cramping pain in the left and right lower limbs below both knee joints for six years with intermittent claudication. The patient has a history of Type II diabetes.

- **Occupation -** The patient works in business abroad
- **Lifestyle** – The patient engages in moderate physical exercise
- **Diet –** non-vegetarian
- **personal history:** The patient has a **long-standing history of Type II diabetes** (diagnosed 10 years prior), managed with oral hypoglycaemic agents
- **Informed Consent:** Informed consent was obtained from the patient. Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

Clinical Findings

General Examination

The skin of both lower legs is normal. There is no pallor, icterus, cyanosis, clubbing, or lymphadenopathy. Mild oedema is observed around the ulcer.

Local Examination

Local examination shows tenderness below the left and right knee joints and on both thighs. There are no signs of discoloration on both legs, and the dorsal pedis popliteal artery pulsations were feeble.

Vitals

The patient's vitals were:
Pulse: 70 bpm
BP: 130/80 mmHg
Respiration: 12 times/min
Heart rate: 70 bpm

Prakriti Assessment

The patient's prakruti was kapha-vata predominant.

INVESTIGATION

Laboratory investigation suggests normal leukocyte (6900), bleeding time 10 minutes,

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and clotting time 3 minutes. SGOT- 46 IU/L, SGPT - 58 IU/L, Hb - 15.6 gm%, ESR - 10 mm/hr, Neutrophil- 52%, Lymphocytes- 48%.
Arterial Doppler of both lower limbs shows:
RIGHT LOWER LIMB:
Multifocal wall calcifications and diffuse wall thickening were noted in all lower limb arteries.
Common femoral and superficial femoral arteries demonstrate regular triphasic flow pattern with normal velocities.
A short segment of severe luminal narrowing was noted in the right popliteal artery for a length of 19 mm. Monophasic flow pattern noted distal to the narrowing.
Anterior, posterior, and proximal dorsalis pedis arteries show a monophasic flow pattern.
LEFT LOWER LIMB:
Multifocal wall calcifications and diffuse wall thickening were noted in all lower limb arteries.
The common femoral, superficial femoral, and popliteal arteries demonstrate a normal triphasic flow pattern with normal velocities.
The posterior tibial, anterior tibial, and dorsalis pedis arteries also demonstrate a normal triphasic flow pattern with normal velocities
Ankle Brachial Index Report shows
Brachial (Rt) - 140 mmHg
(Lt) - 140 mmHg
Posterior Tibial (Rt) - 120 mmHg
(Lt) - 140 mmHg
Dorsalis Pedis (Rt) - 80 mmHg
(Lt) - 80 mmHg
A.B Index (Rt) - 0.86
(Lt) - 1
Mild Right Arterial Disease
Patient was undermedication -
T. Glycimet PG2 (1-0-1)
T. SITAP 50 mg

Table no.1 Timeline of Events and Interventions

Event	Date/Duration	Description
First Symptoms	Six years prior	Cramping pain in the left and right lower limbs below both knee joints with intermittent claudication. Pain was increasing per day.
Diagnosis		Patient was diagnosed as bilateral atherosclerotic vessel wall disease involving lower limb arteries (Rt>Lt) at another hospital before visiting the current hospital. Short-segment nerve stenosis of the right popliteal artery with monophasic flow pattern in the distal arteries was noted.
Intervention	One day	Jalauka-avacharan (blood-letting by leech application) was performed at the calf region for one day. Internal medications (Manjishtadi Kashayam, Kaisora Guggulu, Chandraprabha Gulika, Pramehari Paneenyam) were also initiated.
Outcomes	After 4 days	Patient felt significant relief from pain and could walk twenty minutes without pain. No adverse effects were found from leech therapy.

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Follow-up	After one week	Patient was discharged after 4 days of observation and advised to come for a follow-up after one week.

Differential Diagnosis and Diagnostic Reasoning

Differential Diagnosis: While the primary diagnosis was atherosclerotic vessel wall disease, other conditions that present with similar symptoms, such as leg pain and claudication, could include:

- **Diabetic neuropathy:** Given the patient's history of Type II diabetes, diabetic neuropathy is a relevant differential, as it can cause nerve damage leading to pain, numbness, and weakness in the lower limbs.
- **Varicose veins:** Varicose veins can also cause leg pain, swelling, and discomfort, although claudication is less typical.
- **Spinal stenosis:** Lumbar spinal stenosis can mimic claudication (neurogenic claudication), causing leg pain during walking that is relieved by sitting or leaning forward.

Diagnostic Reasoning: Atherosclerosis was confirmed based on a combination of clinical presentation, physical examination findings, and diagnostic tools. The patient's chief complaints of cramping pain and intermittent claudication are classic symptoms of peripheral arterial disease (PAD). Physical examination revealed feeble dorsal pedis popliteal artery pulsations.

The definitive diagnosis was supported by:

- **Arterial Doppler of both lower limbs:** This revealed multifocal wall calcifications and diffuse wall thickening in all lower limb arteries. Specifically, a short segment of severe luminal narrowing was noted in the right popliteal artery, with a monophasic flow pattern distal to the narrowing, indicating significant obstruction.
- **Ankle-Brachial Index (ABI) Report:** The ABI for the right leg was 0.86, indicating mild right arterial disease. While the left leg's ABI was 1, the overall findings from the Doppler and clinical presentation confirmed the bilateral atherosclerotic changes, with the right leg being more affected.

- **Laboratory investigations:** While largely normal, these tests helped rule out other causes of symptoms and assessed overall health status

THERAPEUTIC INTERVENTIONS

Jalauka-avacharan (blood-letting) was done at the calf region for one day. For this, Jalauka was smeared with turmeric paste, kept in a water pot for 15 minutes, and all the turmeric paste was removed. Patient was made to lie down, the active Jalauka (Leech) kept over the right leg calf muscle region to bite and suck the blood. A soft, white, wet cotton cloth was kept over the Jalauka. With the appearance of pricking pain and itching at the site of bite, it is understood that Jalauka is sucking pure blood. Jalauka was detached from the bite site after turmeric powder was applied to it.

justification and Table for Internal Medications

The internal medications were chosen based on Ayurvedic principles to manage the underlying pathology of atherosclerosis, correlated with 'Dhamani-Pratichaya' and 'Raktadoshaja' conditions. The aim was to address vitiated blood (dushta rakta), reduce

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accumulation of Kapha and Medha, and improve blood flow.

Here is the table no 2 showing detailing the internal medications:

Medicine	Dose	Duration	Rationale
Manjishtadi Kashayam	30ml + 45ml lukewarm water, before food	7 days	Traditionally used in Ayurveda for purifying blood and addressing skin disorders and inflammatory conditions. It helps in detoxifying the blood (Rakta-shodhana) and is considered beneficial in conditions involving vitiated blood (Dushta Rakta) which is implicated in Dhamani Pratichaya (atherosclerosis).
Kaisora Guggulu	2 TID	7 days	A classical Ayurvedic formulation known for its anti-inflammatory, analgesic, and detoxifying properties. It is widely used in managing joint pains, gout, and other inflammatory conditions. It helps in clearing Kapha and Medha accumulations.
Chandraprabha Gulika	3 BD	7 days	A polyherbal-mineral formulation used in various urinary tract disorders, diabetes, and general debility. It is believed to have a balancing effect on all three doshas and supports overall metabolic health, which is relevant given the patient's diabetes.
Pramehari Paneenyam	Intermittently	7 days	This Anubhootha yoga formulation specifically for *Prameha* (diabetes). It would be used to help manage the patient's diabetes, which is a significant risk factor for atherosclerosis.

Follow-Up and Outcomes(Table no 3)

After the leech therapy and internal medications, the patient was carefully observed for 4 days and then discharged. He was advised to come for a follow-up after one week.

Pain Scale Name	Scale Range	Pre-Intervention Example	Post-Intervention Example
Visual Analog Scale (VAS)	0-100 mm	85 mm (severe pain)	20 mm (mild pain)
Numeric Rating Scale (NRS-11)	0-10	8/10 (severe pain)	2/10 (mild pain)
Wong-Baker FACES Pain Scale	Faces 0-10 (even numbers)	Patient pointed to Face #5	Patient pointed to Face #1

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- **Walking Distance Improvement:** Objectively, the patient "could walk twenty minutes without pain" after the leech therapy. This indicates a substantial improvement from his initial complaint of intermittent claudication where pain started after walking a certain distance, sometimes compelling rest.
- **Adverse Reactions:** No adverse effects were found in leech therapy

DISCUSSION:

This case report presents the successful Ayurvedic management of bilateral atherosclerotic vessel wall disease in a 53-year-old male patient with Type II diabetes, specifically highlighting the efficacy of Jalauka-avacharan (leech therapy) alongside internal medications. The patient presented with chronic cramping pain and intermittent claudication in both lower limbs, attributed to significant atherosclerotic changes and documented severe luminal narrowing of the right popliteal artery with monophasic flow distally. From an Ayurvedic perspective, atherosclerosis can be correlated with Dhamani-Pratichaya, an obstructive disease (margavarodha janya vikara) arising from dushta rakta dhathu (vitiated blood). Dhamani (arteries), being an upadhathu (sub-tissue) of rakta dhathu (blood), are prone to blockages caused by the accumulation of Kapha and Medha (biological humor and fat), termed Shonitabinshandan (thickness of blood). This Ayurvedic understanding aligns with the biomedical pathology of atherosclerotic plaque formation, which involves the deposition of lipids, smooth muscle cells, and connective tissue, leading to arterial narrowing and obstructed blood flow. Jalauka-avacharan (leech therapy) was chosen as a key intervention for its Raktamokshana (blood-letting) property, which is considered vital for managing dushtarakta (vitiated blood). The therapeutic benefits of leech therapy are further supported by biomedical research, identifying over 100 bioactive substances in leech saliva. These substances include natural anticoagulants (e.g., hirudin), platelet aggregation inhibitors, vasodilators, and tissue repair facilitators, which collectively improve local circulation, reduce thrombotic tendencies, and mitigate ischemia at the bite site[4,5]. In this patient, the application of leeches at the calf region, where arterial pulsations were feeble, directly targeted the affected area, leading to significant symptomatic relief. The objective improvement in walking distance (twenty minutes without pain) and subjective reduction in pain after therapy further underscore its immediate positive impact. The internal Ayurvedic medications (Manjishtadi Kashayam, Kaisora Guggulu, Chandraprabha Gulika, Pramehari Paneenyam) were administered for their respective actions in blood purification, anti-inflammatory effects, and metabolic regulation, particularly relevant for a patient with diabetes. These formulations are aimed at balancing the doshas and dhatus implicated in Dhamani-Pratichaya, thereby supporting the overall vascular health and potentially reducing further plaque progression.

CONCLUSION:

The present case highlights the effective role of Ayurvedic interventions, particularly Jalaukavacharana (leech therapy) combined with internal medications, in the management of bilateral atherosclerotic vessel wall disease with intermittent

claudication. The patient, a 53-year-old diabetic male, showed marked reduction in pain, improved walking tolerance, and no adverse reactions following therapy. From an Ayurvedic perspective, this aligns with the principle of addressing Dhamani-Pratichaya (arterial obstruction) arising from rakta-dushti and excess Kapha–Medha accumulation. From a biomedical standpoint, the benefits may be explained by the bioactive substances in leech saliva (anticoagulants, vasodilators, platelet inhibitors), which improve circulation and reduce ischemia, along with the supportive action of internal formulations in blood purification and metabolic regulation. Although this is a single-case observation, it demonstrates the potential integrative role of Ayurveda in managing peripheral arterial disease. Future systematic clinical studies with larger cohorts are needed to validate these findings, explore long-term outcomes, and establish evidence-based guidelines for the use of Jalaukavacharana in vascular disorders.

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