

Ayurvedic Conservative Management in Lower Limb Popliteal Artery Aneurysm with Thrombosis - A Case Report

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ABSTRACT:

Lower limb popliteal arterial aneurysm is the second commonest peripheral arterial aneurysm in clinical practice. The popliteal artery is defined as aneurysmal when focal dilation in its diameter is more than 50% of the normal vessel diameter. Due to the cause like smoking, atherosclerosis etc arterial wall strength is decreased associated with inflammatory cell infiltration results in aneurysm formation. Later these aneurysms are prone to filling with mural thrombus which can occlude the artery causing popliteal artery aneurysm with thrombosis. A 65-year-old man diagnosed with left popliteal artery aneurysm with complete thrombosis came to OPD, Govt. Ayurveda hospital, Tripunithura, Ernakulam, Kerala, India, presented with rest pain associated with blackish discolouration in his left foot and numbness for 2 years. He had undergone popliteal aneurysm repair with stent graft 1 year back. Even after the repair, he had severe pain. The case was managed with protocol of *vatarakta chikitsa* including *jaloukavacharana*, *matravasti* and *silajatu rasayana*. The patient had a symptomatic relief in pain, numbness and discolouration of left foot. Hence this case highlighted that symptomatic relief was achieved through ayurvedic conservative management in popliteal arterial aneurysm with thrombosis showed a symptomatic relief using *vatarakta chikitsa* including *jaloukavacharana*, *matravasti* and *silajatu rasayana*.

Keywords: *Jaloukavacharana*, *Matrabasti*, Popliteal artery aneurysm with thrombosis, *Silajatu rasayana*, *Vatarakta*.

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INTRODUCTION

The popliteal artery is defined as aneurysmal when focal dilation in its diameter is more than 50% of the normal vessel diameter. ^[1] They account for approximately 70% of all peripheral aneurysms with an incidence estimated to be less than 0.1. Popliteal artery aneurysms (PAAs) account for 85% of all peripheral aneurysms. They are more common in elderly men with a known cardiovascular disease or with smoking, atherosclerosis etc. Due to the causes like smoking, atherosclerosis etc arterial wall strength is

decreased associated with inflammatory cell infiltration results in aneurysm formation. Later these aneurysms are prone to filling with mural thrombus which can occlude the artery causing popliteal artery aneurysm with thrombosis. When an aneurysm acutely thromboses, the most common symptoms are acute lower extremity ischemia resulting in the acute onset of pain, paraesthesia which needed an emergency repair to avoid risk of possible limb loss. Asymptomatic patients with thrombosed popliteal artery aneurysms are not a candidate of surgery despite require medicines with thrombolytic

property to limit the extension of the thrombus and to forestay the further impending gangrene.

Vascular occlusive diseases and *vatarakta* share a similar pathogenesis. When both *vata dosha* and *rakta dhatus* get vitiated by *nidana sevana*, the *dooshita raktadhatus* get occluded by aggravated *vata dosha* and that obstructed *vata* becomes more powerful and leads to the *sanga* in the *rakta marga* which culminate into *vatarakta* which eventually produces the severe pain, burning sensation and coppery discolouration of affected area. [2] As both *vata* and *rakta* are equally responsible for the manifestation of the condition, treatment should be based on nature of both. When it is affecting deeper tissues like *rakta*, internal medications will not be enough for relieving the symptoms. So along with internal medications some complimentary therapies are also made into consideration. The different treatments mentioned in *Vatarakta* are *parisheka*, *raktamokshana*, *basti karma* and *rasayana dravyas*, in addition to *shamana* to reduce the severe painful inflammation of the condition. [2]

In this case report *raktamokshana* was done with *jaloukavacharana* along with internal medications and external therapies like *matravasti karma* and *parisheka* popliteal artery aneurysm with thrombosis.

CASE HISTORY:

A 65-year-old male patient was admitted to Shalyatantra department of Government Ayurveda College, Tripunithura, Ernakulam, Kerala, India on 28.03.2023 complaining of rest pain and numbness and blackish discolouration of left foot for the last two years. The patient had no history of hypertension, diabetes mellitus or dyslipidaemia but was a heavy smoker for past forty years and addicted to alcohol for past 15 years. More than that he was a farmer for 45 years for that he used to stand for long duration.

Before two years he developed pain at left lower limb suddenly followed by weakness which made him difficulty to walk. Pain got reduced at next day morning. Later the same was happened after one month. Then they consulted Allopathic physician and took

medication for one week. As the pain persisted after 1 week, he again consulted the Allopathic physician and suggested peripheral angiogram. On the peripheral angiogram report, he was diagnosed as left popliteal artery aneurysm with complete thrombosis. (Fig. 1 and Fig. 2) So, they suggested surgery and he had undergone popliteal aneurysm repair with stent graft. Pain reappeared at left foot after 1 year of surgery. Then he consulted same hospital and was advised to do surgery again. As he refused to do surgery, he was prescribed with heavy painkillers like Morphine which also didn't give him a better relief. So, he came here for management.

The patient used to take mixed diet with moderate appetite and regular bowel. He had a habit of standing for long time as he was a farmer. He had addiction of alcohol intake (30 ml weekly) for past 15 years and cigarette smoking (25 beedis/ day) for past 40 years. Sleep was disturbed in nature due to pain.

At the time of admission, he was taking Allopathic medications like

1. Tab Ecospirin 150mg Once a day
2. Tab Clopilet 75mg Once a day
3. Tab Pantop 40mg Once a day
4. Tab Morphine 10 mg $\frac{1}{2}$ four times per day

Examination of right and left lower limb (28.03.2023)

Right and left lower limb was examined. Blackish discolouration over left foot and brittle nails with ridges was noted on left finger nails. On palpation local warmth was reduced on dorsal aspect left foot when compared to right. Peripheral pulses of lower limb: Popliteal, anterior tibialis, posterior tibialis and dorsalis pedis was feeble over left lower limb and was normal volume on right lower limb. Peripheral sensation to temperature, pressure, vibration was reduced on dorsal aspect left foot and was intact on right lower limb. Claudication distance of left limb noted was less than 500m.

Blood pressure, Respiratory rate, Heart rate and Body temperature were normal on 28.03.2023.

THERAPEUTIC MANAGEMENT:

1. *Jaloukavacharana*- 3 times over dorsal aspect of left foot on 09.05.2023, 16.05.2023 and 23.05.2023
2. Internal medication (Table. 1)
3. External therapies (Table. 2)

Timeline

During the internal medication and external therapies, the patient felt no symptomatic relief in the first two weeks. Gradually claudication distance of left lower limb improved to 500 metre in 3rd week, but the numbness and blackish discolouration of left foot persist. After 3-week Dose of morphine reduced to ½ with bearable pain. After one

and half month, claudication distance of left foot improved to 1000m, Morphine stopped completely with slight reduction in numbness and blackish discolouration. Dorsalis pedis of left foot become normal in volume.

Advised *pathya* and *apathyā*

Pathya: Fruits, vegetables, whole grains, fibre rich food, 2L of water, walking for long distance

Apathya: Avoid spicy food items, non-vegetarian diet, tuberous vegetable, alcoholic beverages, smoking, prolonged standing

Table- 1. Internal medications:

Date	Sl No.	Internal medications	Dose	Time
28.03.2023- 12.04. 2023	1	<i>Maharasnadi kashayam</i> ^[3]	90ml	before food twice daily
28.03.2023- 27.05. 2023	2	<i>Chandraprapha guggulu</i> ^[4]	01 no s	before food twice daily
	3	<i>Kaisora guggulu</i> ^[5]	02 no s	before food- twice daily
13.04.23- 27.05.23	4	<i>Varanadi kashayam</i> ^[6]	90ml	before food twice daily
13.04.23- 27.05.23	7	<i>Silajatu rasayana</i> ^[7]	5gm	With <i>Varanadi kashayam</i> before food

Table 2. External therapies:

Date	Sl No.	Procedure	Medicine	Site
28.03.2023- 05.04. 2023	1	<i>Dhanyamla dhara</i>	<i>Dhanyamla</i>	B/L lower limbs- 20 minutes
06.04.2023- 12.04.2023	2	<i>Thailadhara</i> (With mild heat)	<i>Madhuyashtyadi thaila</i>	B/L lower limbs- 20 minutes
02.05.2023- 08.05.2023	3	<i>Kashaya dhara</i>	<i>Guloochyadi kashaya</i>	B/L lower limbs- 20 minutes
16.05.2023- 27.05.2023	4	<i>Matravasti</i>	<i>Sahacharadi mezhukupakam</i>	60ml- Twice daily

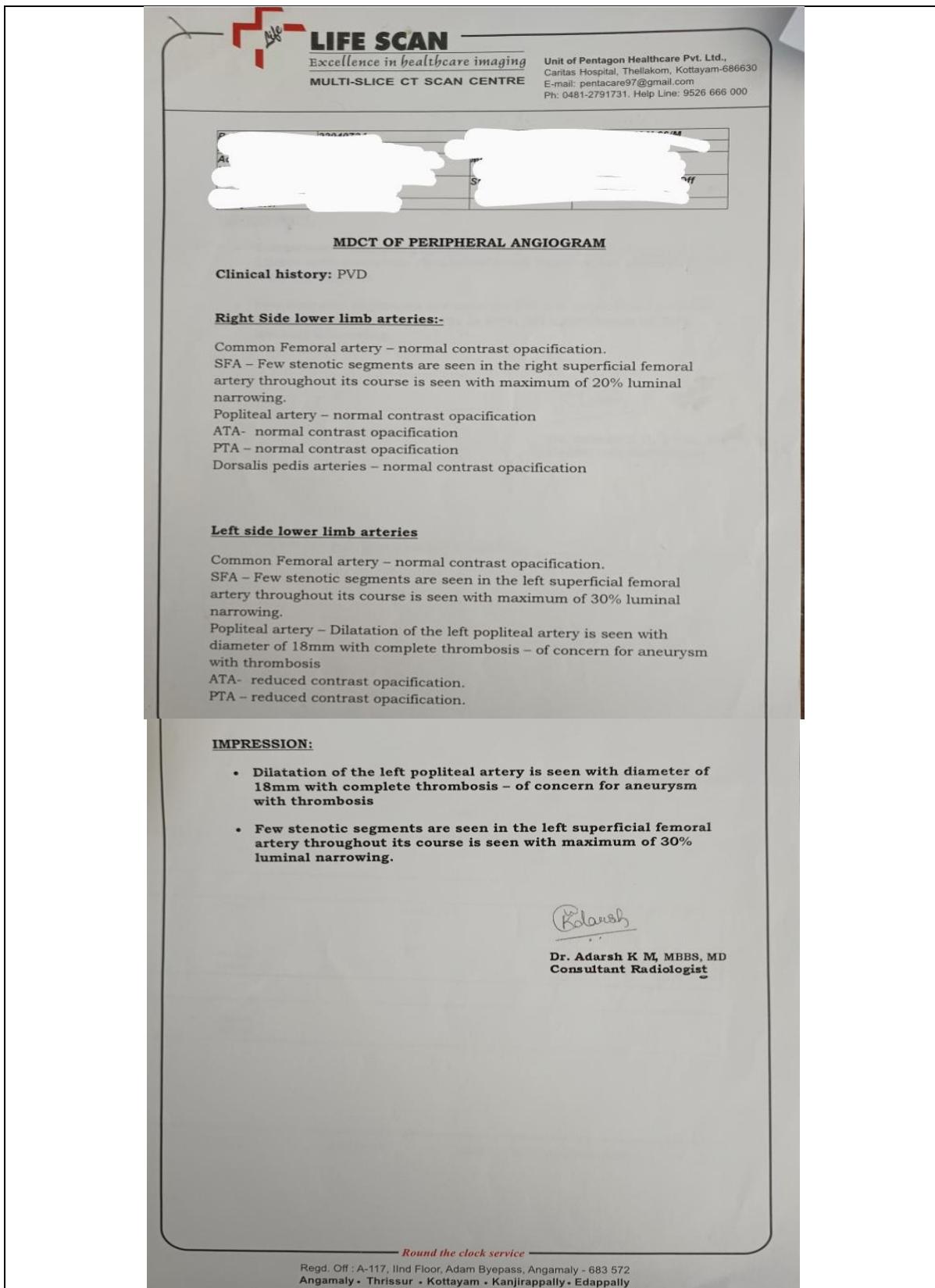


Fig. 1 Before treatment MDCT of Peripheral angiogram

RESULT AND DISCUSSION:

After 2 months of ayurvedic management, Popliteal artery aneurysm patient with thrombosis showed peripheral pulses of popliteal, anterior tibialis, posterior tibialis and dorsalis pedis become normal volume. Claudication distance was improved to 1000m. Blackish discolouration over dorsal aspect of left foot and numbness got reduced greatly. Morphine was gradually tapered during the treatment and was completely stopped on 20.05.2023 and there was complete relief in pain.

Most feared complications of popliteal artery aneurysms are thrombosis which can cause fatal complications like gangrene formation, pulmonary embolism and death. If thrombosis had attained, management for thrombus is to be focused to avoid the complications and to prevent progression. As the pathophysiology in occurrence of thrombus is similar to *vatarakta*.

Raktamokshana using *jaloukavacharana* mentioned in *vatarakta* was the adopted as it has a significant thrombolytic, vasodilator, anticoagulant and anti-inflammatory effect by eliminating local blood impurities and toxins. [8] The saliva of *jalouka* contains hirudin, hyaluronidase, destabilase, hirustasin, bdellins, which helps in dissolving fibrin clots and inhibiting thrombus formation. [9] Leeches preserve tissue oxygenation and promote circulation in cells that are at risk of necrosis by their sucking action. [10] For this reason, they encourage the repair of capillary anastomosis. [11] There by *jaloukavacharana* helps in reduction in pain and *vidaha avasta* of the condition.

Maharasnadi kashaya is very effective in *vatavyadhis*, so reduction in pain was achieved to an extent with this. *Silajatu rasayana* is *agrya aushada* for all diseases especially in diseases which are non-curable at appropriate time in combination with suitable drugs and by adopting the

prescribed method. [7] It may have thrombolytic action and thereby clearing the *srotorodha avastha* and also improve the endothelial health thus preventing further thrombus formation. Here *silajatu rasayana* is administered along with *varanadi kashaya* which possess the property of *antavidhradhinashana*.

Bahya chikitsa like *dhanyamla dhara*, *thailadhara* was adopted to reduce the localised inflammation, numbness and discolouration of left foot. *Matravasti* using *sahacharadi mezhupakam* helps in reducing pain caused by *vata* in *adhakaya*, reducing *twak vaivarna* of *adhakaya*, and reduces the *vidaha avasta*. Among the different treatment protocols mentioned for *vatarakta*, the combined effect of all management helps to reduce the painful condition of popliteal artery aneurysm with thrombosis symptomatically.

CONCLUSION:

Popliteal artery aneurysm patient with thrombosis got symptomatic relief through Ayurvedic conservative management. Pain, numbness and blackish discoloration of left foot were reduced. Pain killers were stopped completely.

Limitation of study:

This is a single case report; more research on a sizable group is anticipated to provide scientific proof.

Strength:

This case report paved a way of Ayurvedic conservative management in lower limb popliteal artery aneurysm with thrombosis. Effective administration of *jaloukavacharana*, along with internal medications and external therapies have given a symptomatic relief in the disease.

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Informed consent:

The written informed consent has been obtained from patient for treatment and publication of data and photos.

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