



CASE STUDY AYURVEDIC MANAGEMENT OF ARTERIAL ULCER

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Abstract

Introduction: Arterial ulcers are often located distally and on the dorsum of the foot or toes with unbearable pain. These ulcers are mostly due to peripheral arterial disease and poor peripheral circulation. Atherosclerosis of the peripheral arteries is the commonest cause of this condition. It commonly occurs on the tips of toes and fingers. **Incidence:** Leg ulcers usually occur secondary to venous reflux or obstruction, but 20% of people with leg ulcers have arterial disease, with or without venous disorders. Between 1.5 and 3.0 in 1000 people have active leg ulcers. In Ayurveda this disease is not mentioned but it can be correlated with Vata-Pittaja Gambhir Vatarakta, Rakta-twak-mansa dushti and srotodushti lakshanas like sanga and siranam granthi. **Material and Methods:** A 32 year male patient was thoroughly examined and investigated for its classical clinical features of said disease in Shalya Tantra OPD in Parul University Vadodara. Patient has been planned for basti procedure followed by internal medication. **Discussion:** Due to the lekahana effect of kshara is does srotoshodhana and hence increases the peripheral circulation and helps in wound bed healing by increasing the blood flow to the wound bed . To improve the vitality and metabolites supply to aid healing the patient was given manjista which by virtue of its rakta sodhaka and praasdana property will increase the metabolites in the blood and helps in providing sufficient substrates in the wound bed for its healing and guggulu which contains rasa- Tikta,Katu Kshaya , Virya- ushna and Vata-kapha Shamak due to these properties it shows Varnya,Balya, Shophahar effect an dvolatile oil and its terpenoidal constituents. **Conclusion:** Considering pathogenesis, clinical features of this disease can be correlated with vata-pittaja gambhir vatarakta, rakta-twak-mansa dushti and srotodushti lakshanas like sangaand siranam grathi⁽¹⁾. Keeping this in mind patient was managed some Ayurvedic internal medications. This treatment gave satisfactory results. Patient had increased his claudication distance according to **Boyd's classification** ⁽²⁾ before treatment claudication distance was 200 meters. After treatment claudication distance was 700meters.

Keywords: Arterial Ulcer, Vatrakta, Peripheral Arterial Disease

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1. Introduction

Peripheral arterial disease (Peripheral Arterial Disease) is atherosclerosis of the extremities (virtually always lower) causing ischemia. Mild Peripheral Arterial Disease may be asymptomatic or cause intermittent claudication; severe Peripheral Arterial Disease may cause rest pain with skin atrophy, hair loss, cyanosis, ischemic ulcers, and gangrene. Diagnosis is by history, physical examination, and measurement of the ankle-brachial index. Treatment of mild Peripheral Arterial Disease includes risk factor modification, exercise and medication as needed for symptoms. Severe Peripheral Arterial Disease usually requires angioplasty or surgical bypass and may require amputation. Prognosis is generally good with treatment, although mortality rate is relatively high because coronary artery or cerebrovascular disease often coexists⁽³⁾⁽⁴⁾. There is no such description available in Ayurvedic samhitaas this disease but considering pathogenesis, clinical features of this disease can be correlated with *vata-pittaja gambhir vatarakta, rakta-twak-mansa dushti and strotodushiti lakshanas like sangaand siranam grathi*⁽⁵⁾. Keeping this in mind patient was managed some Ayurvedic internal medications. This treatment gave satisfactory results.

Case Report

Personal History: A 32 year male patient working as a farmer with no history of diabetes and hypertension, no any habit got admitted on 17/04/2023

Chief complaints -

- Patient complaints of multiple ulcers in the toes
- Pain in foot
- burning sensation in toes
- discharge from wound
- Lack of hair thinning of skin and brittle on nails.

History of Present Illness

According to patient he was apparently well before 2 months. But gradually he has felt some inconvenience during walking due to discomfort in bilateral foot. He has consulted his family physician and with his treatment patient was symptoms free for next few days. Then again he started ill feeling in the same region but in this episodes of symptoms where a serous discharge, and discoloration of the skin with blister was. Then patient came to Parul Ayurveda hospital Shalya Tantra OPD no. 106.

Past History

No any relevant past history of Hypertension, Diabetic mellitus, tuberculosis and any drug Allergic reaction.

Family History

No any relevant history found

General Examination

- G.C. – Fair
- CVS- S1 S2 HEARD
- CNS- conscious oriented
- RS – air entry bilateral clear
- BP – 120/70 MM & HG
- Pulse- 82/min
- Temperature – afebrile
- Bowel habit – regular
- Uro- genital system – NAD

Local Examination -

Inspection –

- Margin – well defined even margins
- Edges – punched out
- Floor - healthy granulation tissue
- Base – mild discoloration
- Discharge - Discoloration, serous discharge, blister
- Mild Swelling On The 2nd, 3rd, 4th And 5th Metatarsals
- Lack Of Hair Thinning Of Skin And Brittle On Nails
- Palpation- Tenderness present, mild bleeding with discharge, peripheral pulsation - anterior tibial , posterior

tibial and dorsalis pedes was felt as feeble and delayed blanching was also observed on bilateral foot.

Management

- 1) Manjistadi kshara basti on yoga Basti criteria

- 2) Tab. Kaishora guggulu⁽⁶⁾ 250 mg 1-1-1 after meal
 - 3) Manjishtadi kshaya⁽⁷⁾ 20ml with equal amount of warm water twice a day after meal
- oral medication for a period of 2 months.

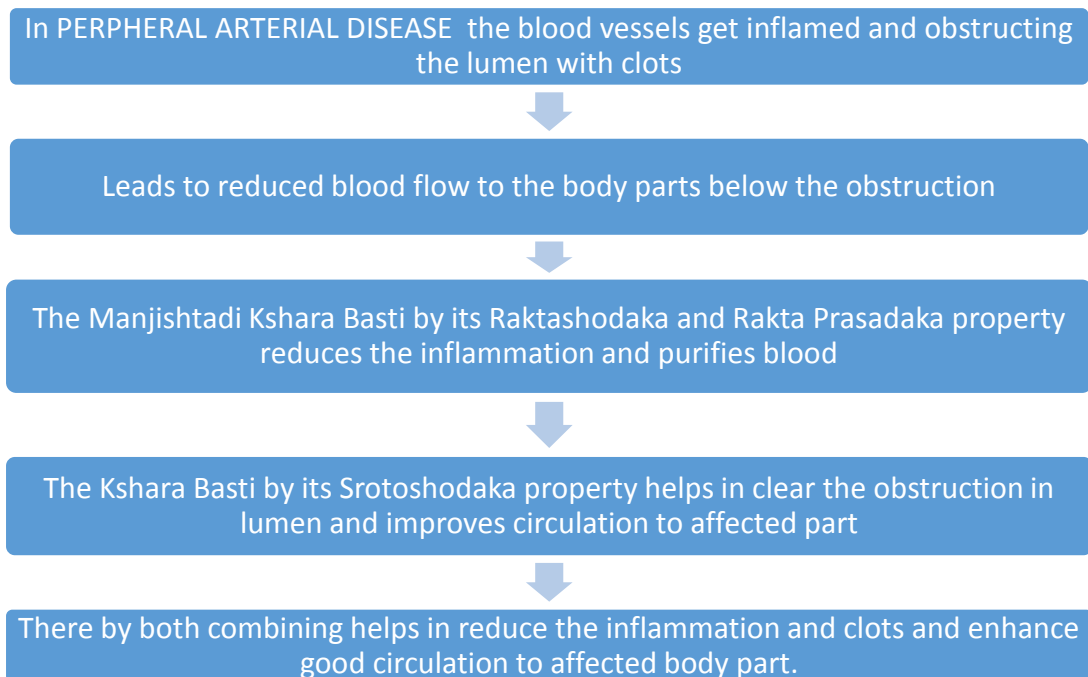
Table no 1: Showing Basti procedure schedule of 8 days

MANJISTADI KSHARA BASTI							
Anuvasan	Anuvasan	Niruha	Anuvasan	Niruha	Anuvasan	Niruha	Anuvasan
Day -1	Day -2	Day -3	Day -4	Day -5	Day -6	Day -7	Day -8

• Ingredients for Niruha Basti

1. Madhu – 20ml
2. Sandhav – 10gm
3. Manjishthadi tail – 60ml
4. Satpushpa Kalka - 30gm
5. Kshaya – Manjishtha Churana + Yashtimadhu Churana + Guduchi = 250ml

Probable Mode of Action of Manjishtadi Kshara Basti in Arterial Ulcer



In arterial ulcer the blood vessels get inflamed and starts obstructing the blood flow which will gradually leads to insufficiency of the blood in this condition manjishthadi kshara basti contains the Raktashodaka and Rakta Prasadaka⁸

property which reduces the inflammation and purifies blood and it also contains the Srotoshodaka property which helps in clear the obstruction in lumen and improves circulation of the affected part.

Table no 2: Showing contents of kaishore Guggulu

s.no	Name	Botanical name	Family	Part used	Quantity
1	Shuddha guggulu	Commiphora mukul	Burseraceae	Niryas	1536 gm
2	Haritaki	Terminalia chebula	Combretaceae	fruits	512 gm
3	Vibhitaki	Terminalia bellirica	Combretaceae	Fruits	512 gm
4	Amalki	Emblica officinalis	Euphorbiaceae	Fruits	512 gm
5	Guduchi	Tinospora cordifolia	Menispermaceae	Stem	3.08 Kg
6	Water decoction				

Table No: 3 Prakshepa Dravya

1	Haritaki	Terminalia chebula	Combretaceae	Fruit	16 gm
2	Vibhitaki	Terminalia bellirica	Combretaceae	Fruit	16 gm
3	Amlaki	Emblica officinalis	Euphorbiaceae	Fruit	16 gm
4	Marich	Piper nigrum	Piperaceae	Fruit	48gm
5	Pippali	Piper longum	Piperaceae	Fruit	48gm
6	Shunthi	Zingiber officinalis	Zingiberaceae	Rhizome	48gm
7	Vidang	Embelia ribes	Myrsinaceae	Fruit	44gm
8	Nishoth	Operculina turpethum	Convolvulaceae	Root	24gm
9	Danti	Baliopermum montanum	Euphorbiaceae	Root	24gm
10	Guduchi	Tinospora cordifolia	Menispermaceae	Stem	96gm
11	Goghrita				768gm

2. Result

Patient had increased his claudication distance according to Boyd's classification⁽⁹⁾ before treatment claudication distance was 200meters. After treatment claudication distance was 700meters

Ankle Brachial Pressure Index

This simple apparatus can be used to measure blood pressure at the ankle and at

the arm. Normally the ankle systolic blood pressure is greater than the brachial (arm) systolic blood pressure by 5 to 15 mm Hg. So, the ratio of the ankle blood pressure and arm blood pressure will also be greater than one and is known as 'pressure index'. If this pressure index becomes less than one it indicates some degree of arterial occlusion. When the ankle blood pressure goes down to 30 mm Hg. or less, it indicates severe ischemia and imminent gangrene.

Table no 4: Showing ankle brachial pressure index

ABI VALUE	INTERPRETATION	RECOMMENDATION
Greater than 1.4	Calcification / vessels hardening	Refer to vascular specialist
1.0 - 1.4	Normal	None
0.9 – 1.0	Acceptable	
0.8 – 0.9	Some arterial disease	Treat risk factor
0.5 – 0.8	Moderate arterial disease	Refer to vascular specialist
Less than 0.5	Severe arterial disease	Refer to vascular specialist

$$ABPI_{leg} = P_{leg} / P_{Arm}$$

Where P_{Leg} is the systolic blood pressure of dorsalis pedis or posterior tibial arteries

and P_{Arm} is the highest of the left and right arm brachial systolic blood pressure.

ABPI BEFORE TREATMENT	ABPI BEFORE TREATMENT
0.8	1.2

BEFORE TREATMENT



AFTER TREATMENT



3. Discussion

Discussion about the case

Ischemic ulcers, also known as arterial ulcers, are brought on by inadequate blood flow to the lower extremities. The subsequent oxygen deprivation of the

surrounding skin and tissues kills those tissues, resulting in the formation of an open wound. In addition, the scarcity of blood can cause minor cuts or scrapes to not heal properly and eventually turn into ulcers. Blood that is nutrient- and oxygen-rich is transported to the body's tissues by arteries. Ischemia, which generally refers to a restriction in the blood supply, can result in arterial ulcers if the artery is narrowed or if the small blood vessels in the extremities are harmed. The result of the decreased blood supply is tissue necrosis and or ulceration. Any patient approaching with a leg ulcer, it's quite essential to rule out properly for suitable management. The proper examination and utility of appropriate investigation, like angiography, in early diagnosis and minimize the risk of developing arterial ulcers in at-risk patients and to minimize complications in patients already exhibiting symptoms.

Discussion about the Drugs

Manjisthadi Kshara Basti: Due to the *lekahana* effect of *kshara* is does *srotoshodhana* and hence increases the peripheral circulation and helps in wound bed healing by increasing the blood flow to the wound bed to improve the vitality and metabolites supply to aid healing the patient was given manjistha which by virtue of its rakta sodhaka and praasdana property will increase the metabolites in the blood and helps in providing sufficient substrates in the wound bed for its healing.

Kaishore Guggulu Guduchi⁽¹⁰⁾

Guduchi is explained as agrya oushadhi in vata rakta as per Ashtanga Hrudiya and hence given as vyadhi pratyanneka oushadhi. It contains rasa- Tikta, Kshaya , virya- ushna and Tridoshagan due to these properties it shows Balya, Dipana, Rasayana, Raktashodhak effect.its also mentioned as the agra oushadha in vata rakta.

Guggulu: It contains rasa- Tikta, Katu Kshaya , Virya- ushna and Vata-kapha Shamak due to these properties it shows Varnya, Balya, Shophahar effect.

Volatile Oil and Its Terpenoidal Constituents

• Monoterpenoids⁽¹¹⁾

The gum resin of *C. wightii* yields about 0.4% of essential oil by steam distillation and its chief components are myrcene, dimyrcene, and polymyrcene [8]. Other components of the oil are eugenol, d-limonene, α -pinene, (\pm) linalool, cineole, α -terpineol, d- α -phellandrene, methylheptanone, bornyl acetate, (\pm) geraniol, and some other unidentified compounds.

• Sesquiterpenoids

The gum resin of *C. wightii* has been reported to contain bicyclic sesquiterpene, cadinene

• Diterpenoids

Diterpenoid constituents from guggulu include α -camphorene cembrene-A

- Triterpenoids⁽¹²⁾
- Steroids⁽¹³⁾
- Flavonoids⁽¹⁴⁾
- Guggultetrols⁽¹⁵⁾

Effect on Platelet Aggregation and Fibrinolytic Activity⁽¹⁶⁾

The purified steroid mixture from Guggulu completely inhibited ADP, adrenaline, or serotonin induced platelet aggregation. No difference was observed between the effectiveness of the steroid mixture and the purified guggulsterone E or Z . The effect of guggulsterones E or Z and was very similar to the inhibitory effect of clofibrate. This finding has therapeutic value in myocardial infarction and thromboembolism.

4. Conclusion

Considering pathogenesis, clinical features of this disease can be correlated with *vata-pittaja gambhir vatarakta, rakta-twak-mansa dushti and strotodushiti lakshanas*

like *sangaand siranam grathi*⁽¹⁷⁾. Keeping this in mind patient was managed some Ayurvedic internal medications. Hence it can be proved that a combined effect of these drugs would help in the management of *Gambhir Vata Rakta*. Patient had increased his claudication distance according to **Boyd's classification**. Before treatment claudication distance was 200meters. After treatment claudication distance was 700meters.

5. Reference

1. Bhaisajyaratnavali, revised and updated with English commentary by prof. dr gyanedrapandey, banaras Ayurveda series 8th edition 2005 vol II amvataadhikara page 544Pp-780
2. S das A manual on clinical surgery by s das 9th edition 2011 page no 81 chapter no 6 Pp- 650.
3. Zemaitis MR, Boll JM, Dreyer MA. Peripheral Arterial Disease. [Updated 2023 May 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan.
4. Star, Ava. "Differentiating Lower Extremity Wounds: Arterial, Venous, Neurotrophic." Seminars in interventional radiology vol. 35,5 (2018): 399-405. doi:10.1055/s-0038-1676362.
5. Bhaisajyaratnavali, revised and updated with English commentary by prof. dr gyanedrapandey, banaras Ayurveda series 8th edition 2005 vol II amvataadhikara page 544Pp-780 .
6. Lather A, Gupta V, Bansal P, Sahu M, Sachdeva K, Ghaiye P. An Ayurvedic polyherbal formulation Kaishore Guggulu: a review. *Int J Pharm Biol Arch*. 2011;2(1):497-503.
7. Kumawat RB, Mali PC, Sharma RA. Ethanomedicine and pharmacological activities of five traditionally used indian medicinal plants: a review. *Advances in Pharmacology and Toxicology*. 2015 Dec 1;16(3):45.
8. D Toshikhane he, Pandya r, Daga h, Bhatt d. Relationship between agni & rakta dhatusarata. Book rivers; 2022 may 11.
9. S das A manual on clinical surgery by s das 9th edition 2011 page no 81 chapter no 6 Pp- 650.
10. Rawat N, Roushan R. Guduchi: A potential drug in Ayurveda. *World J Pharm Res*. 2018 May 1;7(12):355-61.
11. V. K. Saxena and R. N. Sharma, "Constituents of the essential oil from Commiphora mukul gum resin," *Journal of Medicinal and Aromatic Plant Sciences*, vol. 20, pp. 55–56, 1998
12. L. O. Hanus, T. Rezankab, V. M. Dembitskya, and A. Moussaieffa, "Myrrh— Commiphora chemistry," *Biomedical Papers*, vol. 149, no. 1, pp. 3–28, 2005.
13. J. A. Francis, S. N. Raja, and M. G. Nair, "Bioactive terpenoids and guggulosteroids from Commiphora mukul gum resin of potential anti-inflammatory interest," *Chemistry and Biodiversity*, vol. 1, no. 11, pp. 1842–1853, 2004.
14. M. O. Fatope, S. K. S. Al-Burtomani, J. O. Ochei, A. O. Abdulnour, S. M. Z. Al-Kindy, and Y. Takeda, "Muscanone: a 3-O-(1'',8'',14''-trimethylhexadecanyl) naringenin from Commiphora wightii," *Phytochemistry*, vol. 62, pp. 1251–1255, 2003.
15. V. Kumar and S. Dev, "Chemistry of ayurvedic crude drugs—VII guggulu (resin from Commiphora mukul)—6: absolute stereochemistry of guggultetrols," *Tetrahedron*, vol. 43, no. 24, pp. 5933–5948, 1987.
16. L. Mester, M. Mester, and S. Nityanand, "Inhibition of platelet aggregation by 'guggulu' steroids," *Planta Medica*, vol. 37, no. 4, pp. 367–369, 1979.

17. Bhaisajyaratnavali, revised and updated with English commentary by prof. dr gyanedrapandey, banaras
-

Ayurveda series 8th edition 2005 vol II amvataadhikara page 544Pp-780