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EFFECT OF LEECH APPLICATION IN THE MANAGEMENT OF BURGER'S DISEASE:- A CASE STUDY

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Abstract:

The inflammatory response in the arterial wall that involves the surrounding veins and nerves and results in thrombosis of the artery is known as Burger's disease. Smoker's disease, also known as TAO (thrombangitis obliterans), primarily affects young males between the ages of 20 and 40. Early on, it affects just one limb, but eventually, both limbs are affected. As far as the genesis of this illness is concerned, there is a strong correlation between smoking, frequent small foot injuries, poor hygiene, and altered autonomic functions. In contrast to surgical intervention, which includes lumbar sympathectomy, omentoplasty, and amputation as the only option if gangrenous stage is present, allopathic management involves conservative treatment with the use of vasodilators, pentoxifylline, and low-dose aspirin. The aforementioned procedure is expensive and has drawbacks. Although the disease is not mentioned in Ayurveda, its symptoms can be linked to *strotas dushti lakshana*, such as *sanga* and *siranam granthi*. Additionally, because *rakta* is vitiated, *raktavaha strotasa dushti* is also involved; therefore, leech application was planned based on these two references into account all three factors. Before using leeches and performing the scheduled leech therapy, *poorva pradhan paschat* karma is conducted. Leech therapy was found to be helpful with fewer problems in a total of 6 sittings.

Keywords: TAO, *Raktawaha strotas*, Leech, Gangrene

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Introduction:

Ayurveda is the comprehensive science of life, with a wide range of medications and methods for treating people. One of Ayurveda's most significant advancements, which incorporates the leech application, is *Raktamokshan (Jalankavacharan)*. The finest treatment ever described for *vrana*, skin conditions, cellulitis, etc. is leech therapy. Buerger's disease- TOA (thromboangitis obliterans), which is characterized by thrombophlebitis of the superficial or deep veins, Raynaud's syndrome, and occlusive disorders of small and medium-sized arteries. One or two of the three manifestations are frequently all that are visible. The wall of veins and arteries exhibits histologically inflammatory alterations that cause thrombosis. It mostly affects men who are smokers. Smoke produces carboxy-haemoglobin when carbon monoxide and nicotinic acid interact with the blood.

Case study

Age: 60years old male patient

Occupation: farmer

OPD No: 7126

Date of 1st visit: 21/6/2022

Address: Dastur Nagar, Amravati

Desh: sadharan

Duration of study:45 days

Chief Complaints

Pain in right leg-since 8 months

Blackish discoloration of 2nd and 3rd toe-since 6 months

Wound over rt foot on the dorsal aspect below second toe – since 2 months

Pus discharge from wound.

Rest pain- since 6 months

History

History of the Patient: The patient was asymptomatic before 8 months then he gradually developed intense pain of the right leg, which didn't allow him to do his daily work, intermittent claudication lead to painful walking. There was black discoloration with ulceration over the lesser toe which did not heal. Amputation of the toe was recommended in a private hospital.

Past History: Known case of Hypertension IHD with DM type 2 since 2yrs and was on medication for the same. No history of any surgical illness or trauma. History of drug allergy-Patient was not allergic to any drug or substance.

Personal History

Diet: mixed

Addiction: Chronic smoking (10 Bidi per day for the 35 years)

Family History:

Maternal history: no specific

Paternal history: no specific

Social status: lower middle class

General Examination

GC: Good

Temperature: 99F

Pulse: 78/min

BP: 150/90 mmHg

Systemic Examination

RS: AE-BE, clear

CVS: S1 S2 normal

CNS: Conscious, Oriented

floor -

*covered with slough and hyper granulation tissues*2) *Gandh- foul smelling*3) *Vrana- blackish yellow*4) *Strava- blood stained frank pus discharge*5) *Vedana- pain and tenderness at the wound site***Local examination**

L/E: Blackish discoloration of the right leg's 2nd toe and blackish ulceration over skin under the 2nd toe

pus discharge noted over the ulcerated area which is foul smelling.

Tenderness noted at the site.

Wound present near the 2nd toe on dorsal aspect of the foot.

Vrana pariksha type: dushtavrana

Hetu : nij (due to claudication)

Vrana ashraya(Adhishthan)- Twak, rakta, mansa , meda , sira , asthi, sandhi.

Vranopadravas- vranasya-foul smell, pus discharge, pain and tenderness at wound site and toe.

vranitasya- kshudhamandya , nidraliptata

Vranapanchak -

1) *Akruti- dimensions- length- 6 cm(approx. measured by scale) breadth- 4cm.*

depth- uneven

margins- irregular

base - indurated

Aim: to study the role of leech application in the management of burger's disease.

Objectives:

1) To study the role of leech application in the management of burger's disease.

2) To minimize the claudication by use of leech with its anti coagulation properties.

3) To minimize wound healing duration

Case study : Single Case Study

Duration of Study : 45 Days

Investigations

Investigations

Hb-13.6gm%

WBC-5,400

RBC-4,200 millions/mm

Bleeding Time- 1min 4sec Clotting time- 4min 6sec

BSL-180mmg/dl

Urine routine- Nil

Microscopic- Nil

HbsAg-non reactive

HIV-non reactive

USG Doppler: Of bilateral lower limb suggestive of right side peripheral vascular disease

Materials and methods:

Materials:

Two small plastic jars, kidney tray, one big glass bowl and turmeric powder.

Sterile gauge, swab, gloves and normal saline with dressing material..

Method: (Application of leech)

Jalaukavacharan in 5 settings , 2 leeches applied on 2nd day and then applied in the intervals of 7 days.*Vranadhoopan* done on 3rd day and then after intervals of 2 days .*Triphala kwath Dhawan* done on alternate days.First purified and made them active by putting them in the water mixed with turmeric powder for 10 minutes. After that leeches were kept in plain water for 5 minutes. Then the patients made to lie in supine position and wound is cleaned with normal saline water and draped with hole-sheet.Then the leech is applied over the wound and starts sucking.Then a wet gauge was placed to cover leech's body and continuous pouring of water done.As the leech start sucking blood, it remained safely in that place only and then detached by itself (30- 45 minutes) .The site was cleaned with freshly prepared *Triphala Kwath* and bandage was given after applying turmeric powder over bleeding site. After that leech was made

to vomit the sucked blood in a turmeric powder and kept in a separate jar.Patient was undergone six sittings of leech therapy i.c. *Jaloukavacharan* (5 days of interval) on OPD basis. Leech therapy was done in a standard protocol as described by Acharya Sushruta.Leech therapy continued until complete healing achieved and the result were assessed at regular interval along with regular local dressing.

Along with leech therapy internal medicine was advised.

Triphala Guggula 2bd

Tab Pentoxyphylline 400 1od

Tab Ecosprine 1od

Tab Amlodipine 1od

Tab metformine 1od

Results:

Pain- subsided after 7 days. Claudication distance- was improved.

Rest pain- rest pain totally disappeared in 10 days.

Discoloration- skin color started to improve from 10 days and returned to normal in 1 month

After 1 month, the gangrenous part was healed.

Local temperature- the local temperature started to raise after 3rd sitting of leech application

Observations: (Table no.1)

Follow-up days.	Pain	Tenderness	Slough	Discharge
1 st	+++++	+++++	+++++	+++++
7 th	++++	++++	++++	++++
14 th	+++	+++	+++	+++
21 st	++	++	++	++
28 th	+	+	+	+
35 th	nil	nil	nil	nil
45 th	nil	nil	nil	nil



Before disarticulation



disarticulation



Day 1 after disarticulation



leeches applied on day 2



Vrana dhoopan



After *vrana dhoopan*

Triphala kwath dhawan



After *triphala kwath dhawan*



After 15 days



After 45 days

Discussion:

The more effective approach for treating Berger's disease is leech therapy. This treatment keeps the patient mobile during treatment, eradicates the disease with a low risk of problems and recurrence, and is also reasonably priced. Hirudin, which has superior anticoagulant properties (inhibits platelet aggregation) than heparin. Hirudin is present in the saliva of leeches. Saliva contains anesthetic and anti-inflammatory substances, including hyaluronidase, lipase, esterase, Bdelin, and eglin, which reduce pain and inflammation. Histamine-like substances have a vasodilator action. Leech therapy increased local blood flow, which aided in the treatment of pain and sped up the healing of wounds.

Conclusion:

In Burger's disease, leech application along with internal medicines can give good results in pain management & in the healing of wounds. Considering the result in a single case, this treatment regime can be applied to a larger sample to draw an appropriate statistical conclusion.

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