

Jalaukavacharan (Leech Application): Para-Surgical Approach to Shlipada (Fileriasis): A Pilot Study

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Abstract

The disease Shlipada is described in the Ancient medical science i.e. Ayurveda which resembles to fileriasis. The prevalence of this disease is more in coastal area and is still challenge to the medical field due to its poor prognosis. The disease is manifested due to the infestation of organism filarial bancrafti. In Ayurveda the Shlipada is due to vitiation of tridosha and in classic different treatment methods were mentioned for curing the disease. In this work the attempt has been made to treat 13 patients of Shlipada with the help of leech application (Jalaukavacharan). The Jalauka were applied according to the involvement of the part of the body and bloodletting was done. Finally it was found the results are symptomatically positive and significant without any side effect.

Key words: Fileriasis; Jalauka; Leech; Shlipada.

Introduction

In Ayurveda Sushruta described Shlipada as one of disease that resembles filariasis¹ in the 12 chapter of Shlipada nidana. In this context; Sushruta mentioned site of disease in legs, more incidence in Anup desha (costal region), having three types i.e. vataj, pittaj and kaphaj Shlipada along with prognosis. He also described the treatment for Shlipada as per doshik involvement and notable thing is that in all types bloodletting by siravedha (venepuncture) method was advised.² Acharya Charaka³ also recommended bloodletting by siravedha method in management of Shlipada and then Kaphaghna treatment. In Shlipada the management as per dosha and siravedha in all three types of Shlipada was mentioned by

Astanga sangarahakara⁴. Madhavakara described the detail signs and symptoms of sleepada as per dosha⁵. All these symptoms described by all acharya at ancient times are resembles with fileriasis even today.

Shlipada is defined by Ashtanga Sangrahaakara as "Shilavat padam shlipadam"⁶ leg or hand which becomes sthul (coarsening) like sila (stone). So the persistent swelling of the dorsum of the foot, leg become hard, big in size may be termed as elephantiasis in modern science. It is caused due to infestations of *Wuchereria bancrafti* (98% cases) and *Brugia malavi* (2%) where as Ayurved emphasis that Vata, Pitta, Kapha all three doshas being vitiated and leads to Shlipada. Due to the causative factors get accommodation in localised part and give rise to local swelling which later on becomes hard to touch.

However, it is one of the burning medical problems for eradicator. Because the residual swelling in Shlipada cause not only cosmetic defect to the sufferers but also develops many other socio-pathological events. It is such a disease which makes man suffers for a long period. Though the world wide programme for eradication of fileria was undertaken by

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government, but intensive and effective medicinal treatments through different paths runs still unsatisfactory results. Hence there is need from all corners to explore the curative treatment for Shlipada.

A number of treatments have been advocated to cure this disease like scrapping/ amputation as surgical approach from both modern and Ayurvedic views. Clinical severity of lymphoedema and acute inflammatory episodes can be improved using simple measures of hygiene, skin care, exercise, and elevation of affected limbs. But the unsuccessful results from this angle are discouraged. Hence, Sushruta as the pioneer of surgery has explained some more ahead steps of success to obtain victory on the parasurgical treatment of Shlipada. Besides Shastrakarma, he has advised to treat Shlipada by some lepa, kshara karm, Agni karma, and Raktamokshana which is having its own parasurgical entity. Raktamokshana appreciation seems to be the correct approach among those therapies. It is ascribed that Raktamokshana (bloodletting) measure stands above all other therapies and applied in disease which do not respond to other therapies⁷ the bloodletting makes the body free from diseases earlier than other conservative remedies. This measure not only purifies the channels but also let the other parts become free from toxins and bacteria.

Prevalence rate

Filariasis is a major parasitic infection and it was first discovered in the Philippines in 1907 by foreign workers. More than 1.3 billion people in 72 countries worldwide are threatened by lymphatic filariasis, commonly known as elephantiasis.⁸ In India 17 states and 6 Union Territories were identified to be endemic with about 553 million people exposed to the risk of infection; and of them, about 146 million live in urban and the remaining in rural areas.⁹

Shlipada is more prevalent in tropical areas, which is widely spread in coastal regions. About 2/3rd border of India is surrounded by sea. Hence, it is quite logical to assume majority

of population of aquatic area having this disease entity. The sufferers as per statistical of Shlipada is found in more numbers in Kerala, Tamilnadu, Madhya Pradesh, Maharashtra, Orissa, & West Bengals while about 11% of population in Orissa particularly in the area of Puri, Khurda, Balasore, Cuttack, is having the elephantiasis. It is noted that males suffer more frequently than female and the number of sufferers are also more than female. It can be fixed to no certain age group. But as per study it is seen that the maximum incidents occurs in above the 19 years of age group. Two percent from 3 years to 12 years, 3% from 13 to 18 years, and 8% from 19 years to above are found. It is surprised that in Khurda 5% to 10% of leprosy patient have Shlipada.

The surgical manifestations are many like funiculitis (Inflammation of the spermatic cord), epididymities orchitis, cellulitis, arthritis, and hydrocele, elephantiasis in upper limb, scrotum, vulva, or breast. But gross elephantiasis only develops commonly in inhabitants of highly endemic area like puri, and surrounding of puri town. Out of all surgical manifestations, elephantiasis and hydrocele of scrotum are most common. There is great variation in regard of distribution of elephantiasis on East Africa while, elephantiasis of lower limb is more than hydrocele in India. Hydrocele, elephantiasis of leg and scrotum and chyluria are all quite common in China. But Chyluria or haemato chyluria is rare in India.

Aetiopathogenesis

Lymphatic filariasis, commonly known as elephantiasis, is a neglected tropical disease. Infection occurs when filarial parasites are transmitted to humans through mosquitoes (Image-1). As per Ayurvedic, frequent uses of stagnated cold water, inhabitancy in Anupadesh and causative factors for the vitiation of Vata, Pitta, Kapha gives rise to local inflammation.

Intense and repeated indications of *Wechereria bancrofti* causes the presence of

matured worms in the lymphatic vessels and nodes, lead to granulomatous change and allergic tissues, response with infiltration of eosinophils around the lymphatics. These cellular changes are associated with attacks of lymphangitis and lead to temporary lymphatic obstruction. But progressive enlargement of the limb or region beneath the obstruction is followed with thickening and fibres of tissues. Acute inflammatory manifestations are attributed to the helminthic toxins, liberated by worms. Particularly the dead worms undergoing absorption disintegration or calcification by causing toxicity produce, lymphangitis, and fever, etc.

Lymphoedema is due to narrowing and occlusion of lymph vessels. Following post inflammation and fibrosis of lymph glands. Permanent obstruction of the main lymphatic trunk of a limb cause progressive enlargement coarsening corrugation and fissuring of the skin and subcutaneous tissue with watery superficial excrescences, until a leg resembles that of an elephant (Image 3).

Prone Organs

Author of Ayurveda surgery depicts that, foot, leg, hand, ear, nose, lip, eyebrow, penis, vulva, breast, scrotum, etc. are generally affected by filariasis but most frequent parts are leg (Image 2) and scrotum as per observations.

Clinical Features

Manifestations are bouts of fever accompanied by pain and tenderness along with course of inflamed lymphatic vessel in which there is cutaneous erythema. There may be scattered urticaria, funiculitis, epididymitis and orchitis may be caused due to lymphangitis. After some days elephantiasis (filariasis) of scrotum may develop.

Treatment by GOI

The Government of India has accorded a high priority for elimination of this infection

through mass chemotherapy programme (annual, single dose of Diethylcarbamazine citrate, i.e. DEC - 6 mg/kg of bodyweight, plus Albendazole-400mg repeated four to six times). This campaign has become a part of the National Vector-Borne Disease Control Programme in 2003 under the National Health Policy 2002 and aims to eliminate filariasis by 2015.¹⁰

Material & Methods

The patients were collected from outpatient departments, of hospitals, and dispensaries irrespective of age, gender and religion. A detailed clinical history and pathological investigation were recorded before selection of case and starting the proper treatment.

Criteria for Selection

The diagnosed patients of Shlipada were grouped in to two categories duly based on their clinical findings in order to obtain the percentage of curing rate.

First Category

The first category consisted of the signs and symptoms of itching, little redness, inflammation; non pitting oedema examined by pitting on pressure & measurement in centimetre was recorded.

Second Category

The second category consisted of the residual hard swelling, hardness, nodules occurred on the lesions, and measurement by square c.m. was noted before the treatment. Important sign was that on pit on pressure was taken which was found in the lesion.

Treatment in Ayurveda

In ayurved classics Acharya were described very little information about the Shlipada and treatment as per dosha. After review of literature all acarya advised to do

raktamokshan in all types of Shlipada. Various methods mentioned in the Ayurved classics regarding Raktamokshana are available like-

(1) Siravedha

(Bloodletting by Vein-puncture with needle)

(2) Jalaukavacharana

(Bloodletting by Leech Application)

(3) Alabu Avacharana

(Bloodletting by Guard application)

(4) Goshring Avacharana

(Bloodletting by Cow Horns Applications)

(5) Prachhan Karma

(Bloodletting by Scrapping)

(6) Ghatyantra avacharan

(Bloodletting by Cupping glass applications)

Out of above mentioned methods in classics; most common and effective methods is to be leech applications. Perhaps the reason, being easily applicability to the part without any apparent frightening to the patient this para-surgical procedure was selected for the treatment of Shlipada. This method has been carried out as per directions available in the text with certain modifications. After Jalaukavacharan progress and relief is sign and symptoms in all the patients were recorded properly on the clinical basis. The procedure conducted in all patients of Shlipada is detailed below in trividha karma as per Sushruta.¹⁰

Procedure of Leech Application

Pre procedure

- Prepare the patient mentally for Jalauka application.

- Routine hematological investigations were done.
- Written informed consent of patient was taken.
- Clean the affected part and give mild fomentation.
- Leeches, turmeric powder, Shatdhauta ghrita and dressing materials kept ready.
- Selected leeches were kept in turmeric water for 5 minutes.
- Then took the leeches and kept in clean fresh water.
- The active leeches became ready for application

Procedure

- Patient was laid down comfortable in supine position.
- Applied at the site of lesion, if not stuck then tried next and if next also not bitten then pricked for drop of blood.¹¹
- When started sucking of blood by Jalauka then covered it with fine white wet cloth except the mouth and made wet continuously.
- After sucking to its capacity it was automatically wear off.

Post procedure

A. Leech

- Poured the turmeric powder on mouth of Jalauka to vomit the sucked blood.
- If incomplete then squeeze the Jalauka to vomit and removed all the sucked blood.
- Left the leeches into turmeric water for 5 min. and transferred to fresh water.
- Kept the Jalauka in separate container for second setting of that particular patient.
- Never applied used leech of one patient to another patient.

B. Patient

- Dusting of Sphatika in case of oozing.
- Dressing at the bite site with Shatadhauta ghrita.¹²
- Allowed to stay for one hour in recovery room for observation.

Criteria For Assement

1. The cases of above mentioned two categories were subjected to clinical observation and pathological investigation.

2. The patients were carefully watched for any aggravation as well as for any untoward complications. Similarly the relief in reduction of swelling was recorded.
3. The photograph and weight was taken before and after the treatments.
4. To assess the extent of affection of swelling and the area of impression was calculated by per square area of inflammation.

Observations

Table 1: Demographic Data

Sr. No.	Observations	No of patients (%)
1	Age (40-70 years)	75.00
2	Sex (Male)	66.50
3	Religion (Hindu)	67.00
4	Marital status (Married)	83.50
5	Socio economic status (poor class)	80.50
6	Occupation (Labor)	79.00
7	Diet habit (Virudhashana)	76.00
8	Types of diet (Non Veg.)	95.00
9	Addiction (Smoking)	60.00
10	Sleep pattern (disturbed sleep)	85.50
11	Prakriti (Kaphavataja)	70.00
12	Vyayam Shakti (Avara)	73.50
13	Satva (avara)	85.00

Table 2: Chronicity of Disease

Sr. No.	Chronicity	No. of Patients	Percentage
1	> 5 years	9	69.23%
2	< 5 years	4	30.76%

Table 3: Overall Result

Sr. No.	Result	No. of Patients	Percentage
1	Cured	8	61.53%
2	Improved	5	38.46%

Result & Discussion

Age, sex, residence, socio-economic states, chronicity and affected parts etc. were recorded in all patients. In this study, maximum (75%) patients were observed in 40 to 70 years of age; because in this age group patients were more prone to exposure and less immunity due to degenerative changes in body. Male patients were maximum (66.50%) in number as responsibility and working in the field might be infestation to Shlipada. Hindu religion (67) and married (83.50)

patients were maximum might be coincidence as there is no direct relation of the disease Shlipada. Socioeconomically poor (80.50) and labor (79.50) patients were observed maximum due to going for field work and might be increased chances for mosquito bite leading to disease. Non-vegetarian (95%) and virudhashana (76%) type of diet was observed in more number of patients as in coastal region particularly in Puri (Odisha) the main diet of person is non vegetarian. In case of addiction smoking was reported by maximum (60%) patients so leads to the atherosclerosis in arteries making the condition more worsen.

Sleep disturbance was noted by 85.50% of patients as the condition effect on social negligence and mental stress. In maximum (70%) patients Kaphavataj prakriti was observed; in this disease kapha dosha was mainly vitiated so the condition becomes kricchasadhya (poor prognosis). Avara Vyamashakti was observed in maximum (73.50%) patients as due to Shlipada immunity is lowered. Satva was avara in 85% of patients might be due to mentally patient was in mental stress.

The shlipada is the chronic condition so the observations showed that the maximum patients i.e. 69.23% noted chronicity more than 5 years. In this study out of 13 patients 9 patients were suffering since more than 5 years, while the duration of the rest 4 patients was less than 5 years. This showed that the disease is chirkari (chronic) and kricchasadhya (poor prognosis) in nature. Patients of both groups have received sufficient medicines from Ayurved, Homoeopathy and allopath in past but did not get relief from symptoms.

Total 13 patient of either group were undergone Raktamokshan therapy for a period 6 weeks among those 13 cases; 10 patients were male and 3 patients were female. It was observed that all the patients were having inflammation in minimum square area of leg form ankle to knee it was approx. 900 sq. cm where as the square are of foot was 700 sq cm. Many patients were also having more swelling area in sq.cm.

Further observation was made that the area of swelling began to reduce, even after one sitting of leech application in 1st group of patients, where as inflammation was locally reduced after 3-4 sitting. The complete cured of symptoms in 1st group varied from 10 to 15 sitting. The approximate 40% relief was obtained in 2nd group even continued for 20 sitting within 6 weeks. The chronicity with change of tissue structure plays an important role regarding the cause of the disease. In one sitting minimum 5 and maximum 10 leeches were applied as per the severity of the symptoms. The total quantity of blood expelled from one Shlipada case at one sitting with

leeches ranged from 80 to 100 ml blood without any untoward effect.

The study revealed that though this procedure was somewhat tedious to conduct, still it was found that the patients had liking for leech applications due to relief in the symptoms.

In this pilot study out of 13 cases treated with leech application 8 cases relieved significantly in sign and symptoms. They got complete reduction of swelling where as 3 cases got reduction about 40% and rest 2 cases were found improvement in the symptoms.

Mode of Action

The probable mode of action of the bloodletting by leech can be said that due to removal of the blood new RBC and WBCs were formed in the blood so immunity of the patient may be increased. Secondly the blood flow to the site will increase and proper nutrition to that tissue may lead to relief in symptoms. It can also be assumed that the toxins presents in the blood may be wears off by removal of blood. The enzyme present in the saliva is Hirudin which is anticoagulant so congestion at that places will reduce and helps in relief in oedema. So it can be said that this non pharmacological treatment modality is easy, economic and without any side effects.

However this present work is the primary and pilot study which needs an intensive clinical research. At this stage it is difficult to analyse and to present the process of its exact mode of action.

Conclusion

All the observation have revealed that this para-surgical approach i.e. Leech application is beneficial to the patient suffering from Shlipada. None of the patients complained of any adverse effect after leech application. No recurrence was observed with follow-up period of six months. So no doubt; it is the effective and encouraging; non

pharmacological and para-surgical modality for management of Shlipada.

Image 1: Life cycle of *Wuchereria bancrofti*

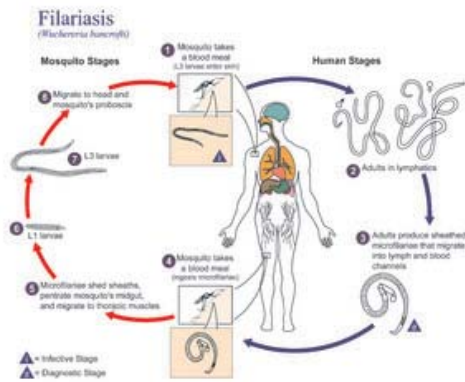


Image 2: Fileriasis of Right Leg



Image 3: Elephantiasis in Bilateral Leg



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