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### *Kaidaryayuktatakra Lepa as Sadyochikitsa in Vrishika Damsha: A Case Study.*

Ambili.T.S,<sup>1</sup> Sharon Jose,<sup>1</sup> Hema A.G,<sup>1</sup> Jayadeep. K.<sup>1</sup>

<sup>1</sup>Department of Agadatantra, M.V.R Ayurveda Medical College. Parassinikadavu, Kannur, Kerala, India.

#### ABSTRACT

Scorpion stings are a major cause of global public health issues associated with substantial morbidity and mortality next to snake bites. The estimated annual number of scorpion stings is 1.2 million leading to 3250 deaths. The common clinical feature of the scorpion sting is the sharp localised burning pain which gradually spreads to the whole limb followed by the variable nature of paraesthesia and swelling. Involvement of the central nervous system and autonomic nervous system along with respiratory and heart failure and even death is immediately seen in untreated cases of scorpion stings. Among *Jangama Visha Adhithanas* (animal poisons) mentioned in *Agadatantra*, the clinical manifestations seen in *Vrishika* resemble scorpion envenomation. Immediate acute pain at the site of the sting is an essential factor for the emergency search of medical care. Since *VrishikaVisha* (~Scorpion poison) is *vata* predominant in nature, *Dhara*, *Lepana* and *Dhoopa* procedures have prime importance in its management. In spite of the probable faster action of these treatments in acute symptoms of *Vrishika*, they are not being widely used in clinical practice. This is a case study of a scorpion sting with acute symptoms. Based on the study it can be concluded that *Kaidaryayuktatakra lepa* in "Kriyakoumadhi" has shown promising results in the management of acute scorpion envenomation.

**Keywords:** *Kaidaryayuktatakra lepa*; Scorpion sting; *Vrishikadamsha*.

#### INTRODUCTION

Scorpion stings are a major environmental health problem in many underdeveloped tropical and subtropical countries due to its incidence and ability of some species to induce severe clinical symptoms, fatal at times.<sup>1</sup> The venomous species, the age and health of the envenomated victim, and accessibility to appropriate medical care decides the impact of sting to humans. In India among 86 species, *Mesobuthus tamulus* and *Heterometrus swammerdami* are responsible for envenomation of medical importance. The estimated annual number of scorpion stings is 1.2 million leading to 3250 death.<sup>2</sup> It is an acute life-threatening, time-limiting medical emergency for farmers, villagers migrating population,

and hunters.<sup>3</sup> *Agada tantra* encompasses topics of toxicology including signs, symptoms and management of poisoning from Scorpions.

**Correspondence:** Dr.Ambili.T.S. PG Scholar,  
Department of Agadatantra, M.V.R Ayurveda  
Medical College. Parassinikadavu, Kannur  
670562, Kerala. Email: [ayurhealing20@gmail.com](mailto:ayurhealing20@gmail.com).  
Phone No. +91-8105685698.

The clinical manifestations seen in scorpions like excruciating pain, burning sensation, swelling and erythema resemble *Vrishchikadamsha* in Ayurveda. Immediate acute pain at the sting site is an essential factor for the emergency search of medical care. Though several simple external medicinal preparations have been mentioned in Ayurveda classics and *Keeraleeya Visha chikitsa Granthas* (~Kerala textbook of clinical toxicology management) to address the emergency, physicians are not trying those formulations in common Agada practice. Hence, this study is an attempt to throw light on *Kaidaryayuktatakra lepa* which finds its reference in *Vrishchikadamsha Prakarana* of “Kriyakoumadhi” in the acute management of *Vrishchika damsha*.<sup>4</sup>

## CASE REPORT

This is a case study of a 30-year-old male presented with severe pain, redness and burning sensation over the left wrist joint for the last 4 hours. The history revealed a scorpion sting before 4 hours and on examination a sting mark was found. The patient was presented with pain and burning sensation of grade 4 and redness of grade 2. (Table 1)

### Examination

All the systems were examined thoroughly and no abnormalities were detected except in the integumentary system. (Table 2)

### Therapeutic intervention:

The sting site was washed with lukewarm water and examined for the sting by using the lens and cleaned properly. The freshly prepared *KaidaryaYuktatakra lepa* was applied over the affected area in 1/3 *angula* (0.6cm) thickness twice with an interval of 2 hours. After every application the area was cleaned immediately before getting dried. (Table 3)

### Preparation of medicine

*KaidaryaYuktatakra lepa* contains *Kaidarya (Murrayakoenigii)* and *Takra (Buttermilk)*. 100 grams of *Kaidarya* leaves were taken in a *Khalvayantra* (mortar with pestle). To this 30 ml of freshly prepared *takra* was added and grinded well to prepare the *lepa*.

Symptoms	Criteria	Grading
PAIN	No pain	0
	Trivial pain	1
	Mild pain	2
	Moderate pain	3
	Severe pain	4
BURNING SENSATION	No burning sensation	0
	Not continuous	1
	Continuous not affecting function of affected part	2
	Continuous hindering the function of affected part	3
	Continuous disturbing routine activities	4
ERYTHEMA	No redness	0
	Diffused, only at point of sting	1
	Diffused, involving surrounding area up to 5 cm	2
	Marked, involving surrounding area up to 5 cm	3
	Marked, involving area more than 5 cm	4

VITALS	Blood pressure	120/70 mm of hg
	Heart rate	80/min
	Respiratory rate	16/min
INTEGUMENTARY SYSTEM	Inspection	Sting marks, redness at the bite site
	Palpation	Tenderness over the bite site
	Movements	Restricted on wrist joint
AYURVEDA	<i>Prakrithi</i>	<i>Vatapitta</i>
	<i>Dosha</i>	<i>Vatapitta</i>
	<i>Dhathu</i>	<i>Rasa, rakta</i>
	<i>Deha desha</i>	<i>Vama manibandha sandhi</i>

External application	<i>Kaidaryayuktatakra lepa</i>
Frequency	Twice with an interval of 2 hours
Thickness of <i>lepa</i>	1/3 <i>angula</i> (0.6cm)

Symptoms	Before	After 2 hours	After 4 hours
Pain	4	2	0
Burning sensation	4	2	0
Erythema	2	1	0

**Assessment Criteria and Outcomes:**

Criteria for assessment was based on the signs and symptoms of *Vrschikadamsha* mentioned in classics. The symptoms were assessed before treatment, 2 hours after first and 2 hours after second application of *lepa*. (Table 4)

**RESULTS:**

After *lepachikitsa* (~treatment with external application) there was complete relief of symptoms like severe pain, redness and burning sensation. (Figure 1)

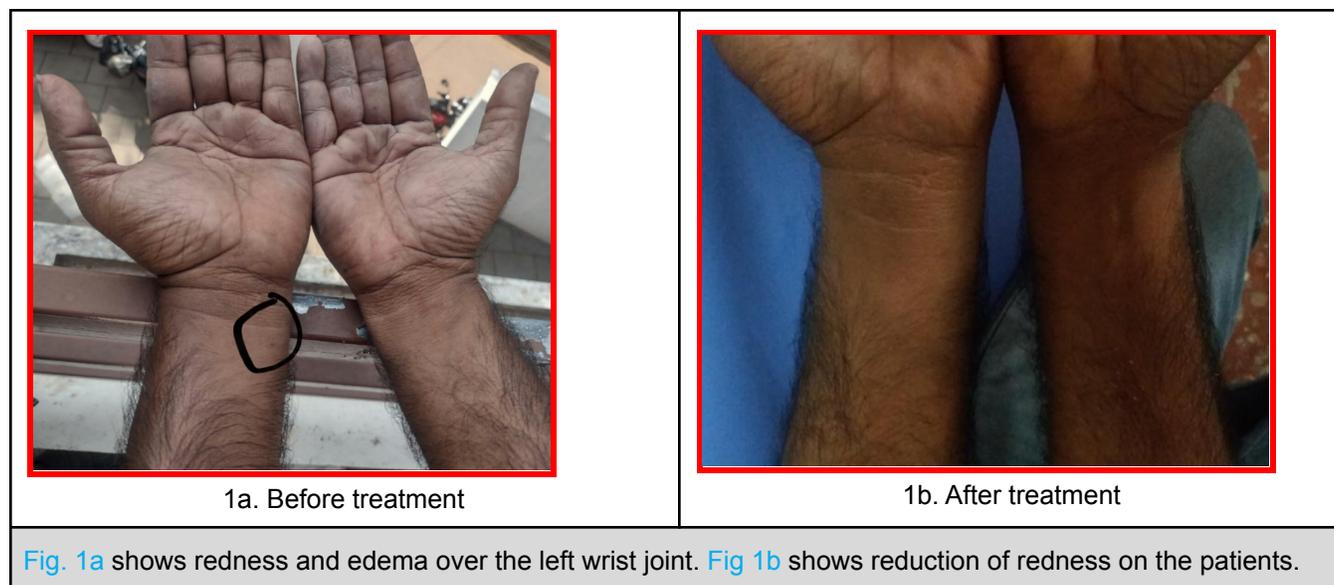


Fig. 1a shows redness and edema over the left wrist joint. Fig 1b shows reduction of redness on the patients.

**DISCUSSION**

As *Vrshikavisha* (~poison of scorpion) is of *vatholbana* (~*vata* predominant) in nature, *sweda* (~sudation), *lepa* (~external application of medicines), *seka* (~irrigating with liquids) and *dhoopa* (~fumigation) are described in general except in conditions such as inflammation, gangrene formation or fainting.<sup>5</sup> *Sira* (any tubular vessel

of the body especially veins) and *dhamanis* (~arteries) are bound to *roomakooapas* (~hair follicle) hence *lepas* applied over skin facilitates the quicker absorption of drug potency through hair follicles, *swedavahi* (~sweat glands) and *siramukha* (~blood capillaries). The potency of the drugs administered through *lepa* transverse into the body, after getting processed by *bhrajaka agni* (*digestive fire*) in the skin. Body is invaded by *urdhvagata* (~upward), *tiryaggata* (~oblique) and *adhogami* (~downward)

*dhamanis*. These *tiryaggata dhamanis* (~oblique arteries) again divided to form hundreds and thousands of networks.<sup>6</sup> Their openings are attached to hair follicles which carry sweat and *rasadathu* (primary product of digested food) inside and outside, through them the *veerya* (~potency) of *lepadravyas* (drugs for external application) enter the body. Here this *lepa* helps in reducing the severity of burning sensation and erythema due to *himaguna* (cold potency) and *raktapittaharatwa* (~decrease potency of raktapitta) *kaidarya* and *vata pitta samanatwa* of *takra*. The *kashaya rasa* of *takra* with the property of *asravishodhanam* (~clears blood) also accounts for this. The *takra* characterized by *ushnaveerya* (~hot potency), *vishaharatva* (~anti toxic effect) and *kapha pitta samanatwa* of *kaidarya* helps in reduction of pain. The *Srotosodhana* (~clearing channels) property of *takra* helps in removal of *srotosanga* (blockage of channels) created by *visha* in localized areas. Many functional bioactive compounds in *Kaidarya* like alkaloids, glycosides and phenolic compounds possess anti-inflammatory, anodyne and antioxidant properties. The physical and chemical properties of a drug like concentration, molecular size, shape and temperature in a topical dosage form affect that drug's trans-dermal delivery and bioavailability. The molecules of the formulation penetrate through the stratum corneum, then into the viable epidermis and dermis, producing its characteristic pharmacological response through receptors. Due to the high diffusional resistance of horny layer, it provides a small fractional area of 0.1% only as a permeable appendageal shunt route. Besides the appendageal shunt route, the drug molecule may penetrate through the hair follicles and sebaceous glands or through the sweat ducts also. In this way the substances, which are used in *lepas*, may be absorbed and enter in the blood and remove the pathology.

## CONCLUSIONS

*Kaidaryayuktatakra lepa* is found to be effective here in relieving severe pain, burning sensation and erythema in *Vrischikadamsha*. This *lepa* is easy to perform due to the availability of both *takra* and *kaidarya* in almost all places and in all seasons.

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**Conflict of Interest:** None Declared

**Consent:** The consent was signed by the patient and the original article is attached with the patient's chart.

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