Centipede bite and its management – Overview in Siddha system

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Abstract

Siddha provides several emergency first aid for centipede bite treatment. Centipede bite is quite dangerous and if not treated properly a strong centipede bite can also cause death. Centipedes generally have a single claw at the end of each leg. The appendages of the first body segment have been modified to form large, poisonous fangs that are used to capture living prey during active predation & contain venom glands. Neurotoxic venom is injected through a venom duct. It is a neglected concept in the context to research so this topic was chosen & entitled as centipede bite and its management overview. It is conceptual type research so Siddha texts as well as Non-Siddha texts & various articles from journals are followed. The aim of this manuscript was to correlate the concept of centipede bite. All the references were composed, organized & considered to draw a fruitful conclusion.

Keywords: Siddha, Centipede, Treatment, Neurotoxic, Management

Introduction

Traditional medicinal systems predominate in modern India: Siddha, Ayurveda, Unani. Siddha medicine occurs in Tamil Nadu and part of Kerala, Karnataka, Andhra and Sri Lanka. This essay focuses on Siddha medicine mainly in urban areas5. Siddha provides several emergency first aid for centipede bite treatment. Centipede bite is quite dangerous and if not treated properly a strong centipede bite can also cause death. There are two types of poisons that have been described in the siddha system. One of the poisons that have plant origin and toxic minerals, metals or metal ores that are found inside the earth. Another one of the venoms of animals like snakes, scorpions, worms, insect’s etc6. In ancient time more number of people were affected by animal and insects as they were wandering the forest for their daily routine.

Various types of animal bites are described in Siddha. Description about snake bite, scorpion bite, centipede bite, spider bite, dog bite are usually seen in our textbook & more focused on it. This may be due to their toxicity fatal for human being. But unfortunately less importance has been given to other insects & arthropods bite. The centipedes are known by various names in India. Pooran in Tamil Nadu and Pazhuthara in Kerala. The fact is that it is a nocturnal arthropod having photonegative behavior that hides in dark places. Centipedes are fast moving, carnivorous, venomous in vertebrates. Centipedes are arthropods belonging to the class Chilopoda of the subphylum Myriapoda & are organic animal irritants8.

There are so many research papers published in context to toxicity of poisonous bites. But there are few research papers refound in the centipedes bites. This study was little effort to explain & highlight the centipede bite in siddha perspective literary. By this study now we can explain the centipede bite as Pooran in terms of Siddha.
Centipedes are a varied group composed five orders.

**Scutigeromorpha:** These are all fast moving species having 15 pairs of long legs & spiracles on the first 7 segments only. They are above ground predators. Scutigeralongicornis from India about 5-7cm long is one of the largest species known. Likescolopendris, they can autotomize their legs when under danger from predators. In some cases these legs remain to stridulate disturbing the predator from the whole animal.

**Lithobiomorpha:** This types centipedes live in stones & woods are turned belong to the group known as lithobiids or stone occupants. Small size centipedes is found commonly in temperate & hot areas. They have 20-50 antenatal segments, 15 pairs of legs & only 6 or 7 pairs of spiracles.

**Craterostigmomorpha:** There is only one genus in this order that occurs only in Australia and appears to represent a half way stage between the Scolopendrids & the Lithobiids. They have 15 pairs of legs & only 7 sets of spiracles.

**Scolopendromorpha:** This is large order. All of them have 21 pairs of legs & 17-30 antennal segments. One of the species scolopendra gigantean can be over 30 cm in length. Many of the larger Scolopendrids are colorful & venomous. Some of them are dangerous. The largest Indian centipede scolopendra hardwickei is easily recognizable by its alternate colored bands on tarsal segments & is common in India. The terminal legs are often modified. Some species autotomize some of their legs are often reformed. Some species autotomize some of their legs to distract potential predators. The order as a whole is more frequent in the tropics than in temperate regions.

**Geophilomorpha:** The centipedes most likely found living in the soil are relatively long & slim are known as geophilids which means ground lover. These are long worm like species adapted to burrowing in the soil. They have 31 to 177 pairs of legs, 14 segments.

Centipedes generally have a single claw at the end of each leg, which they walk or run on except the fast moving scutigera. They are plant grade. The appendages of the first body segment have been modified to form large, poisonous fangs that are used to capture living preys during active predation & contain venom glands. Neurotoxic venom is injected through venom duct⁹.

Venom is produced in a gland at the base of forcipules & is injected through ducts when the forcipules are driven into the victim’s tissues. In addition to venom some species exude defensive substances from glands found along the body segments. These secretions are usually nontoxic to humans, although at least one species of the genus Otostigmus secretes a vesicating substance. Some centipedes secrete phenol, quinone, and cyanogen from the base of their feet which may produce ulcer¹, despite the fact that no centipede shows real danger for human beings the bite of large centipede such as Scolopendra can be painful to an adult & dangerous to a small child.

Centipedes mainly use their antennae to seek out their prey. The digestive tract forms a simple tube, with digestive glands attached to the mouth parts. Like insects, centipedes breathe through a tracheal system typically with a single opening or spiracle on each body segment. They excrete waste through a single pair of malphigian tubules. All centipedes are principally nocturnal & are shy of light though some species of scutigeromorpha are seen actively at times in day time as well. Centipede eats insects, earthworms, spiders, slugs & other small animals. The largest centipede, scolopendragiga as eats rats & some small lizards.

**Life cycle of centipedes**

Centipede reproduction does not involve copulation. Males deposit a spermatophore for the female to take up. In one clade this spermatophore is dropped in a net and the male commences a courtship dance to encourage the female to consume his sperm. In other cases, the males just leave them for the females to find. In temperate areas egg laying take place in spring and summer but in subtropical and tropical areas there appears to be little seasonality to centipede breeding. There are a few known species of parthenogenetic centipedes.

The centipedes lay their eggs singly in holes in the soil, the female fills the holes with soil and leaves them. The number of eggs placed ranges from about
The young usually hatch with only 7 pairs of legs & gain the rest in consecutive sheds. The female in some species stays with the young after they have hatched, protecting them until they are ready to leave. If disturbed the female will either abandon the eggs or eat them, abandoned eggs tend to fall prey to fungi rapidly. Some species of Scolopendromorpha are matriphagic, meaning that the offspring eat their mother.

**Centipede Bite symptoms**

Centipedes are considered terrifying by humans due to their dozens of legs moving at the same time and their tendency to dart quickly out of the darkness towards one’s feet. The commonest genus encountered in India is scolopendra. The fangs of Centipedes of the genus Scolopendra can penetrate human skin and deliver venom that produces extreme burning pain, swelling, erythema, gangrene, lymphangitis and lymphadenopathy with inflammation of skin & subcutaneous tissues, ulceration & also in most cases a localized necrosis takes place.

Some species of centipede can be harmful to humans because of their bite. Although a bite to an adult human is usually very painful and may cause severe swelling, chills, fever and weakness. Bites can be dangerous to small children and those with allergies to bee stings. The degree of symptoms varies from person to person and bite to bite. Pain and oedema generally resolve naturally over a few days to one week but can continue for up to three weeks. However acute myocardial ischemia’s in an adult male as well as death in a 7-year-old girl after a bite to the head have been reported.

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**Siddha Review of Centipede Bites and Treatment (Internal Uses)**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Enumeration</th>
<th>Siddha Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The bark roots of Alincil (<em>Alngium salvifolium</em>) has soaked in goat urine and allow it dried and powdered to give for centipede toxin.</td>
<td>Guna Paada Mooligai</td>
</tr>
<tr>
<td>2</td>
<td>Nagathali chooranam (<em>Opuntia dillenii</em>) 10gm once a day for 6 days and cure for centipede poison.</td>
<td>Visa Murivu Vaihyam</td>
</tr>
<tr>
<td>3</td>
<td>Povanthippalam-2, Pepper-equal weight to the right both grind with mix and eat well.</td>
<td>Sarabendrar Vaihiya Muragil</td>
</tr>
<tr>
<td>4</td>
<td>Aavuri (<em>Indigo feratinctoria</em>) juice has mixed with pepper powder and have taken it internally the toxin will have cured.</td>
<td>Visa Vaihya Chinthamani</td>
</tr>
<tr>
<td>5</td>
<td>The preparation of Uppu Chenduram has been given with its indication for centipede poison.</td>
<td>Guna Padam Thathu Jeevam</td>
</tr>
<tr>
<td>6</td>
<td>The preparation of the Vellarugu Chooranam has been given with its indication for centipede poison.</td>
<td>Visa Murivu Vaihyam</td>
</tr>
<tr>
<td>7</td>
<td>Betal leaf and dried Arca-nut and chewed and blown on the bite site.</td>
<td>Siddha Toxicology</td>
</tr>
<tr>
<td>8</td>
<td>The leaves of <em>Eclipta prostrata</em> has crushed and mixed with white coat milk and then intake cure for centipede poison.</td>
<td>Visa Murivu Vaihyam</td>
</tr>
<tr>
<td>9</td>
<td>The leaves of Vanni - ½ has crushed and Nagathali root - ¼ have grind with mix and eat well.</td>
<td>Visa vaitiya chinthamani</td>
</tr>
<tr>
<td>10</td>
<td>The fresh leaves following plant are boiled and applied the body <em>Cephalandra indica, Pipper betale, Gossypiumindicum, Glucosmis pentaphylla, Crdiospermum halicacabum</em></td>
<td>Siddha Toxicology</td>
</tr>
<tr>
<td>11</td>
<td><em>Pipper longum</em> and <em>Boerhaavia diffusa</em> root grind with mix the hot water to give for 3 day centipede bite.</td>
<td>Visa Vaihiya Aaruda Noolkal</td>
</tr>
<tr>
<td>12</td>
<td>Vasambu (<em>Acorus calamus</em>) flower is grind and mix with water and take 465gm as internally and inhale it for recovery of centipede bite.</td>
<td>Anubava Vaihiyam</td>
</tr>
</tbody>
</table>
Siddha Review of Centipede Bites and Treatment (External Uses)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Enumeration</th>
<th>Siddha Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The leaves of <em>Acalypha indica</em> (Kuppaimani) has crushed and extract the juice have applied on bited site to recover centipedes toxin.</td>
<td>Thanjai Raja Vaithya Chinthamani(^{18})</td>
</tr>
<tr>
<td>2</td>
<td>Equal weight of the root of the following are ground well and made in to paste <em>Solanum trilobatum, Eugenia jambolana, Acacia pennata.</em></td>
<td>Siddha Toxicology(^3)</td>
</tr>
<tr>
<td>3</td>
<td><em>Acalypha indica</em> along with it salt, turmeric grind well and make it as paste and apply it on bited site as externally application.</td>
<td>Anubava Vaithiyam(^{13})</td>
</tr>
<tr>
<td>4</td>
<td>The leaves of <em>Acalypha indica</em> have grinded with gel of <em>Aloe vera</em> and applied this mixture as externally on bited site.</td>
<td>Siddha system of Toxicology(^3)</td>
</tr>
<tr>
<td>5</td>
<td>Mulli keerai has grinded with lemon juice and make it as paste applied it as on bited site.</td>
<td>Anubava Vaithiyam(^{13})</td>
</tr>
<tr>
<td>6</td>
<td><em>Acalypha indica</em> leaf extract and Chunnampu (Calcium carbonate) mixture as externally bited site.</td>
<td>Anubava Vaithiyam(^{13})</td>
</tr>
</tbody>
</table>

**Discussion**

Centipedes, bees, wasps, scorpions and other biting arthropods cause human fatalities but these are not often characterized as attacks. It may difficult to characterize some of these encounters as offensive or defensive. As per Siddha Centipede bite causes pain, swelling, redness locally & Same description is found in the centipede bite i.e. extreme burning pain, swelling, erythema, gangrene, lymhanginitis and lymphadenopathy with inflammation of skin & subcutaneous tissues, ulceration. Systemically centipede bite produces burning sensation in heart region, sweating, fainting & centipede bite may produces systemic features like nervousness, faintness, vomiting, headache, convulsions, irregular pulse & cardiac arrhythmias, rhabdomyolysis & renal failure in rare cases. As per treatment is concerned Siddha described mainly local application. Contemporary science also mainly focused on local treatment and symptom wise management.

**Conclusion**

Recently, the world health organization estimated that 80% people world wide rely on herbal medicine. The most ancient system of medicine Siddha has described a number of medicines for the cure of centipede bites but no sufficient explanation of their mode of action was available in other system of medicine. Thus these drugs are better alternative for centipede envenomation. Still lots of work has to be done, there are still number of drugs and combinations of drugs which are mentioned in Siddha text to have anti-venomous properties. These drugs need to be identified and research work should be done on each plant and combinations also so that alternative drug for anti-centipedes venom will put forward.

**References**


How to cite this article:
DOI: http://dx.doi.org/10.22192/ijrcrps.2017.04.06.001