

TWO CASES OF CHILOPODA (CENTIPEDE) BITING IN HUMAN FROM AHWAZ, IRAN

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SUMMARY

These are the first known case reports of biting with centipedes in the two patients from Ahwaz, Iran. Erythema has been found in both female cases. Both patients complained of pain, itching and irritation following centipede biting. Haemoglobinuria and haematuria were seen in the both cases. Both patients were bitten by *Scolopendra valid* (Scolopendromorpha: Scolopendridae).

KEY WORDS: Ahwaz, Chilopoda biting, Scolopendra sp.

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INTRODUCTION

Chilopoda or centipedes, which are among the less well-studied arthropods, include the true centipedes with only one pair of legs per body segment. Approximately 3000 species of centipedes are found in the class Chilopoda, phylum Arthropoda. There are 620 identified species of Scolopendromorpha including 2-3 families as the most medical importance of centipedes.¹⁻⁴ Their habitats include underground or rock piles. They are usually nocturnal arthropod predators, which are distributed widely, especially in warm, temperate and tropical regions.^{1,3}

Their first pair of appendages on the trunk is modified into a pair of claws (i.e., forcipules) with poison glands, which centipedes use to capture prey, usually other arthropods (Fig-1). The bite of large centipedes can cause some pain and discomfort in humans, although there are

no authenticated cases of human fatalities from centipede bites. Common effects included intense local pain, erythema, indurations, and necrosis, as well as mild constitutional symptoms.^{1,2,4}

The most dangerous species belong to the genus *Scolopendra*, with the largest members (*Scolopendra gigantea*) reaching lengths of 26cm. Nearly 5,000 centipede bites are reported every year in Turkey.² Unfortunately there is no documented report regarding centipede biting in Iran. Two cases of centipede bitings are described in two females from Razi University Hospital of Ahwaz (SW of Iran).

CASE REPORTS

Case 1: A 39-year-old patient presented to the emergency department with excruciating pain to her left gluteal since three days. There was a 9-10cm erythema within that area with complaint of itching and irritation. There was no pitted or ichemosis. After arriving her pain was managed with lidocaine, a local injectable anesthetic. Physical examination revealed no blood pressure with normal heart rate, respiratory rate, temperature and oxygen saturation.

Her laboratory Prothrombin Time (PT) and Activated Partial Thromboplastin Time (APTT) examinations were normal. Rate of her hemoglobin (Hb) was normal: 10.4 and 10.8 too. Her urinalysis tests showed 1 + haemoglobinuria during all the four tests. Haematuria

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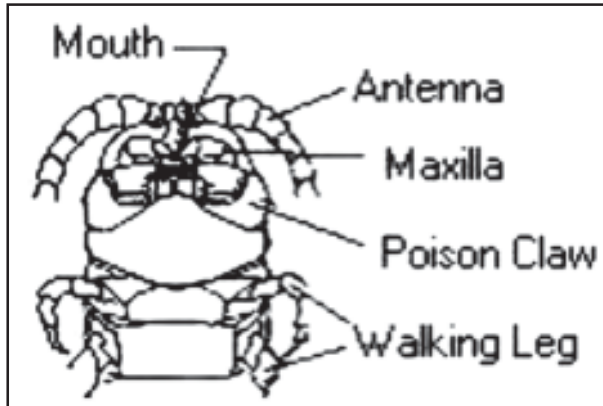


Fig-1: Ventral side of *Scolopendra* head showing poison claws over mouth.

were seen with an increasing rate: (4-5)-(4-6)-(10-12) and (14-15) in her urine tests too. This increasing Red Blood Cells rate may be linked with kidney disorders following centipede biting. The patient was successfully treated with oral antibiotic (ceftazidim), antihistamines and hydrocortisone and discharged a day later.

Case 2: A 40-year-old patient presented to the emergency department with excruciating pain to her right hemithorax (anterior axillary line). There was a 7-8cm erythema within that area. The patient complained of itching and irritation. There was no pichy or ichemosis. When she arrived in hospital, her pain was managed with lidocaine. Physical examination revealed no blood pressure with normal heart rate, respiratory rate, temperature and oxygen saturation.

Her blood tests showed normal PTT and PT and varying normal rate of Hb: 12.9,12.2 and 12.1. Her urinalysis tests showed a decreasing rate of haemoglobinuria from 1+ to negative in all of her urine tests. Decrease in haematuria was seen from (8-10) to (1-2) in her urine tests too. She was hospitalized for four days and treated with oral antibiotic, antihistamines and hydrocortisone.

Identification of Centipeds: The key of Pavel Stove was used as the reference of centipede identification. Both cases were recognized as *Scolopendra* sp. (Sclopendromorpha: Sclopendridae) (Fig-2), using an Olympus stereomicroscope.⁵ Then the species was confirmed as *S. valid*, using key of Lewis.⁶ The identifications were made in the Department of

Medical Parasitology and Mycology, Ahwaz Jundi Shapour Medical Sciences University.

DISCUSSION

There are numerous cases regarding centipede bites in Ahwaz hospitals which have never been considered as poisonous biting and the patients with centipede biting are discharged without any records very quickly. Centipede biting in this region can lead to some important medical implications like haemoglobinuria and haematuria in the patients. In addition all collected centipedes by the patients were identified as *Scolopendra* sp., which is the most important medical genus among centipedes. Therefore appropriate funding is required to maintain records of these important centipede bites.

The biochemistry of centipede venoms has not been studied extensively. Norris has explained that at least in some species contain 5-hydroxytryptamine, hemolytic phospholipase A and a cardiotoxic protein. Norris has also noticed that the venom of the North American giant desert centipede, *Scolopendra heros*, contains a cytolysin too.¹ However both serotonin and histamine, the presence of several protease-activities and non-toxic vesicating substance have been reported from the venom of *Scolopendra morsitans* and from body segments glands of some species like the genus *Otostigmus*, respectively, by Serinken *et al.* Other most likely, important components are present in these venoms, which require further study.²



Fig-2: *Scolopendra valid* (original photo)

According to Serinken *et. al.*,² usually *Scelopendra* bites produce a characteristic lesion with erythema, edema and pain that heal in a week with no complication. The inoculation of the bacteria into the subcutaneous space can also occur with no damage to the overlying skin sequencing to frank skin necrosis. These could be seen in patients with advanced age, immunosuppressive therapy, alcohol abuse, HIV infection, malignancy, diabetes mellitus, chronic renal failure or vascular insufficiency. Ozsarac *et al.* have reported changes in electrocardiography (ECG), which showed new ST-T wave changes, suggesting an acute ischemic process in a 60-year-old man, following a *sclopendra* centipede envenomation. In this case the patient experienced diaphoresis, dizziness, hypotension, and bradycardia too.⁷

Because all centipedes captured by patients, were recognized as *Sclopendra* in the Department of Medical Parasitology and Mycology, therefore treatment of centipedes biting and controlling these venomous arthropods should be considered as medical care and public health, respectively.

Treatment could be divided into: pre-hospital care, emergency department care and consultations. No specific pre-hospital care has been suggested except local application of ice, heat or immersion in hot water which may reduce some of the discomforts such as pain and swelling. Emergency department cares are included: a) taking vital signs and applying routine blood and urine tests. b) reducing pain using systemic analgesics or local injectable anesthetics e.g. lidocaine or bupivacaine. c) reminding tetanus status. d) treating secondary infections with appropriate antibiotics. e) examine the wound for any signs of secondary infection or necrosis. f) observing the patients for approximately four hours for evidence of systemic toxicity. Surgical consultation for compartmental pressure testing is necessary.^{1,8,9}

Measures to control centipedes include the following:

* Applying contact sprays of organo-carbamate or pyretheroid insecticides, respectively such as propoxur or pyrethrins, directly to

centipedes around their habitats, for quick control.

- * Spraying or dusting containing propoxur or pyrethrin around building, foundations, baseboards, cracks or other hiding places such as under clothes washers and dryers in utility rooms.
- * Removing objects that provide harborage such as trash piles, rocks, boards, leaf piles, compost piles and similar materials.^{1,8}
- * Never touch or handle centipedes.
- * Use caution when gardening, turning soil, or picking up rocks.
- * Work gloves are very helpful in preventing bitings.^{1,9}

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