



## Hyperesthesia Secondary to Centipede Bite- A Case Report

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### Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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Case Study

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### ABSTRACT

**Background:** Centipede bite is a major public health problem among rural communities of Nigeria. This can be attributed to thick bushes around residential homes and humid weather peculiar to these regions, which favor the survival of this group of arthropods. However, presentations of cases to hospitals are rare.

**Objective:** To report a case of hyperesthesia secondary to centipede bite in Nigeria.

**Methods:** The case note of the patient was retrieved and relevant data were extracted and summarized.

**Results:** An 80 year old retired civil servant, now a farmer, presented to the outpatient clinic, with a history of severe pains following centipede bite two weeks prior to presentation. Pains were so severe that he could not stand without support. He was later diagnosed with avascular Necrosis of right head of femur and presently on physiotherapy regimen.

*Keywords:* Hyperesthesia; centipede; bite.

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## 1. INTRODUCTION

Centipedes belong to a class of chilopoda and to a subphylum of myriapoda. The word "Centipede" means 100 legs. They are elongated metameric creatures with one pair of legs per body segment.

Approximately, 3000 species are found in the class of chilopoda. They are among the less well-studied arthropods [1].

Centipedes spend much of their time underground or on rock piles and usually come out at night to actively hunt their prey. They are capable of very fast movement when exposed [2].

The most dangerous specie belongs to the genus *Scolopendra*, with the largest members (*Scolopendra gigantea*) reaching length of 26cm. Main clinical features of Centipede bite include: Pain, tissue swelling, pruritus, redness, occasionally, chest pain, palpitations. These features may be complicated by amputation, tissue necrosis and psychological consequences. No antivenom exist. Management is done symptomatically. The precise incidence of centipede bite is difficult to determine and is often grossly underestimated, as many of the cases remain within the community and usually don't present to clinic. Centipede bites affects farmers, nomads, and rural dwellers of all ages [3]. The burden of human suffering caused by centipede bite has been ignored and neglected for long. Since most people affected are agricultural workers, their periods of incapacitations will affect their output in farming activities, this tends to result to low crop yield production. Financial instability also occurs in their homes, because the bread winners are usually the victims. This tends to lead to a cascade of problem within the home-children dropping out from school, malnutrition and occurrence of disease [4].

The crude venom of the Centipede-*Scolopendra subspinipes mutilans* shows a broad spectrum of anti-microbial activity against gram-positive and gram-negative bacteria as well as fungi. A homologous peptide scolopendrin possess anti-bacterial property [5].

The toxins in Centipede venom are imperfectly understood but cytolysin, proteinases and lipoproteins have been isolated. The venom is a lipid-toxin complex with properties, facilitating local cellular absorption and penetration, which leads to more serious tissue injury.

Occurrence of necrosis secondary to centipede bite was limited to one case, among several studies [6], and normally debridement, which may have to be repeated, is often indicated, but small lesions heal spontaneously [7,8].

Swelling deterioration after initial improvement is feasible and normally due to infection or hypersensitive reactions. The hypersensitivity reaction is normally associated with wells' syndrome [9].

## 2. ETHICAL CLEARANCE

Ethical clearance was gotten from Health Research Ethics Committee (HREC) Federal Medical Centre, Umuahia with assigned number of FMC/QEH/G.596/Vol.10/105.

## 3. CASE REPORT

An 80 years old male, of the Igbo ethnic group living in a rural community in Abia state of Nigeria, presented at Federal Medical Centre, Umuahia, Abia state, South Eastern Nigeria, with a two week history of severe pains following centipede bite while working at a foundation site. Site of bite was at the right inguinal region. Pain was sudden on onset, sharp in character, continuous, and radiating to the lower thigh of the affected limb. He immediately consumed onions (believed to have antivenom properties), then he also received tetanus toxoid vaccine, antibiotics and analgesics, from a nearby health center.

Five (5) days later after the bite, he discovered that the pains was so excruciating that he could not walk. He further tried other local treatment like applying fluid extract from Centipede to the bite site, but with no relief. There was no history of systemic involvement or cardiac symptoms. No past history of hypertension, cardiac disease or diabetes mellitus. On clinical examination, he was observed to be in painful distress. He was conscious and well oriented. His blood pressure, pulse rate and respiratory rate were 100/50

mmHg, 68 and 20 respectively. Examination of cardiovascular, respiratory and abdominal systems was unremarkable.

However, on musculoskeletal examination, there was one puncture site, tender, no erythema or local swelling. The region of bite was warm to touch, no visible wound. Power on affected limb was 4/5, hyperaesthesia was marked over the right thigh, and touch sensation was intact. A diagnosis of right thigh hyperaesthesia was made. Treatment regimen included:

- v Tabs Zerodol 100mg bd x 10/7
- v Tabs Neurobion T bdx 2/52
- v IM Diclofenac 50mg bd x 3/7
- v Caps Astyfer T xdlly 2/52.

Investigations carried out included Full blood count (FBC), Urinalysis, Serum electrolytes, Urea and Creatinine (S/E/U/Cr), X-ray of right hip and knee-joint, spinal X-rays. The FBC, Urinalysis, S/E/U/Cr, spinal and knee X-rays were normal. However the hip X-ray revealed avascular necrosis of right head of femur. He was then referred to the orthopedic team for further management.

#### 4. DISCUSSION

Centipedes are arthropods of public health importance. Centipedes are generally nocturnal carnivores favoring dark warm places. Cases of Centipede bite have been observed in Israel, Japan, Taiwan, Philippine, USA, and Australia-where the largest number of cases has been reported [9].

Bite can be caused by *Scolopendra gigantea*, *S. angula* and other species [10]. Bites predominantly occur on exposed parts, particularly the lower limbs [11]. However they can occur anywhere depending on activities being undertaken at the time of bite. According to a clinical review of patients presenting to two emergency departments after Centipede bites in Hong Kong between 2006 to 2010, it was revealed that commonest bite were frequently at nights, indoors, and on lower limbs [11].

This particular patient, had his bite during the day, outdoor and around his right inguinal region immediately above the right thigh.

Pain is a consistent symptom of centipede bite and is often severe, particularly with the genus *Scolopendra*. The index patient presented with severe pains complicated with inability to walk, though he did not come with the Centipede for genus identification. A descriptive study in Hong Kong revealed that centipede bite consistently resulted in pains [3]. Swelling and bite marks are normally the next presenting symptoms after pains [3]. This patient had only one bite mark, there was no swelling. Myocardial infarction has also been reported from Centipede bites [12]. Autopsy studies are very rare [13].

To increase diagnostic yield, blood testing should be guided by the clinical setting. Normally, a complete blood count will reveal a neutrophilic predominate leucocytosis (consistent with an acute stress response). The index patient is yet to do the outline investigations.

Concerning the treatment of pain, analgesics are very potent. Local application of ice may reduce some of the discomfort, however, others have anecdotally found that local heat application or immersion in hot (nonscalding) water is more comforting [14]. Centipede venom not only contains but also releases histamine. Histamine contributes to pain and to the haemodynamic toxicity in rodents exposed to histamine, and this effect can be blocked by anti-histamine [15].

Steroids have also been used clinically [3], their efficacy warrants further research. Steroids and anti-histamines were not part of our patient's treatment regimen.

This showed the serious consequence that can be gotten from unattended or delay in the treatment of centipede bite.

#### 5. CONCLUSION

Centipede bite is not as simple as people take it. It can result to a very serious consequence as seen in this patient if there is delay in treatment or left unattended to.

Preventive measures include educating the individuals of a community on the importance of preventing damp places within the house, sealing cracks in concrete foundations, and caulk spaces around doors and windows. Environmental

sanitation (clearing of refuse and organic materials), constant mowing of lawn as this would expose the centipedes to harsh weather. Also enlightening the individuals about the benefits of orthodox medicine in reducing morbidity and mortality is important.

Specific measures to prevent centipede bites are the use of long boots, work gloves and other forms of protective clothing for farmers while working in centipede-infested areas. The bite can also be prevented by the use of dehumidifier in damp areas of a house, like the bathrooms, closets and basement.

Early prevention of centipede bites include killing them instantly when seen, use of insecticides in areas where centipedes are numerous. The insecticides are also applied outside the house as well, especially up to 2-3ft of the foundation wall and a band of soil 2-4ft out from the foundation. In cases of unavoidable bites, prompt presentation to the hospital in order to prevent subsequent tissue damage and disability is advised.

## 6. RECOMMENDATION INCLUDES

- Surveillance and reporting systems that enables proper documentation of cases for epidemiological studies should be initiated and implemented.
- Research directed at improving the available methods of first aid, primary clinical care and patient rehabilitation has to be given due attention and properly financed at all levels.

## CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this case report.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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