

Poisoning by Scorpion Sting in Adults: Experience in a Second Level Referral Hospital in Mexico

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Abstract

Introduction: Scorpion stings constitute a public health problem, and in rural areas, the severity of poisoning and the delay in the implementation of an adequate treatment are especially important. It is necessary to know the symptoms that occur most frequently in the population that inhabits these rural areas. The objective of this study was to characterize clinically manifestations after scorpion envenomation to prevent mortality and morbidity resulting from this poisoning.

Methods: This is a descriptive and prospective study of the clinical characteristics of scorpion sting cases registered in Morelos, Mexico. Patients were treated intravenously with antivenom; no deaths were recorded in this study period.

Results: A total of 117 cases were included in the present study, with a mean age of 20 years. The accidents occurred most frequently in the house and the workplace; and between the 6:00 and 14:00 hrs. Signs and symptoms began within a median time of 35 min. The most prevalent clinical manifestations were local pain, nasal pruritus and dysphagia.

Conclusions: The intoxication by scorpion sting in adults is variable, and the absence of complications or death in this study is attributed to the fact that the patients received opportune treatment, including antivenom.

Keywords: Scorpion Stings; Antivenom; Signs and Symptoms; Treatment

Introduction

To date, is known 1,500 species of scorpions are distributed all over the world. The predominant species in Mexico is *Centruroides limpidus limpidus*, in State of Morelos, Guerrero, State of Mexico, Michoacán, Puebla and Aguascalientes [1].

The epidemiological bulletin reported 288,819 cases in Mexico in one year and the State of Morelos reported 26,876 cases in 2018 [2].

In Mexico, there are highly effective antitoxins, which have been helpful in minimizing mortality and anaphylactic reactions produced by scorpion toxin [1-5].

Scorpion stings constitute a public health problem in Mexico, in the hospital of Tetecala, scorpion stings are one of the ten causes of morbidity in the emergency service.

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Objective of the Study

The objective of this report is to describe clinically manifestations after scorpion sting in adult.

Materials and Methods

A descriptive and prospective study was conducted from 2013-2014 in the general hospital of Tetecala.

Inclusion criteria were: Patients older of 18-years old with a history of a scorpion sting within the last 24 hrs who requested care from the general hospital of Tetecala and demonstrated envenoming by scorpion sting or showed compatible clinical symptoms.

Given that the present study is a case report including the clinical condition and the treatment scheme of patients with scorpion stings, participant informed consent was not required.

Patients were assigned to one of three clinical states (mild, moderate and severe envenoming) based on a clinical evaluation and according to commonly accepted standards [6-8].

The drugs administered to the patients were analgesics, and antivenom (Alacramyn[®], polyvalent anti-scorpion fabotherapeutic, produced by Bioclon Institute, Mexico City, Mexico) at adequate doses to counteract intoxication symptoms as determined by the attending physician as follows: Mild envenoming were treated only with paracetamol (500 mg) in order to control the pain in the site of the sting. Moderate envenoming was treated with analgesics, plus a single dose of hydrocortisone and one ampoule of fabotherapeutic since the beginning of the clinical event. Additional doses of anti-venom were given every 60 minutes whenever it was necessary, depending on the patient's reactions. Severe envenoming was managed with two or three ampoules of the antivenom initially, and by administering one more ampoules every 60 minutes till the patient's recuperation was observable. Administration was intravenous and asymptomatic patients stayed only for observation.

Results

A total of 117 cases of scorpion stings reported in our second level referral hospital were included in the present study, 59 males (50.4%) and 58 females (49.6%), with a male/female ratio of 1:0.9. The median age was 20 years with a minimum of 20 years and maximum of 80 years, the median weight was 50 kg with a minimum of 50 kg and a maximum of 100 kg.

There were no significant differences between gender/sex, ages and weight into the groups.

The time between the bite and the appearance of signs and symptoms of scorpion envenoming began within a median time of 0.35 hrs and the time from sting to admission to the emergency room was 0.24 hrs. Patients stayed in observation in the emergency room for an average of 2 hrs, The hospital stay was longer in severe cases, with a median of 2 hrs.

The most frequent areas of the body bitten by scorpions were the hands, arms and feet.

In general the intoxication signs and symptoms presented were: local pain (83.8%), nasal pruritus (70.1%), dysphagia (55.5%), sore throat (53%), hyperaemia (49.6%), paraesthesia (46.1%), irritability (26.5%), vomiting (18.8%), respiratory failure and tachycardia (13.7%), nystagmus (10.2%) and sialorrhoea (8.5%). None of the patients had comma, convulsive crisis, heart failure, pulmonary edema, low blood pressure or death.

The management of the patients in this hospital was based on analgesics, antivenom treatment; 100% of the patients were treated with paracetamol, all patients of group moderate and severe envenoming. The number of ampoules of antivenom for the treatment of moderate cases was 1 - 3 ampoules and severe cases received a minimum of 2 ampoule and a maximum of 4 ampoules. No deaths occurred, adverse reactions to the application of the antivenom.

Discussion

Generally the scorpion is found in the houses, inside the clothes or the shoes, the subject when dressing in the morning suffers the sting in the hand or in the feet, which explains why accidents are more frequent in the home, in the morning and without predominance of same kind (1/0.9) [9-15].

In adults, it is not common to find nistagmus, although several patients presented this symptom, however in children it is considered as a symptom of severe intoxication [6].

Severe poisoning was the group with the longest hospital stay, with the objective of identifying any data that could pose a risk to the patient's lives.

Conclusion

We conclude that scorpion sting poisoning in adults is variable, and the absence of complications or death in this study is attributed to timely treatment, with antivenom.

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None.

Disclosures

None conflicts of interest.

Ethical Approval

Given that the present study is a descriptive study and is a case report including the clinical condition and the treatment scheme of patients with scorpion stings, ethical approval and participant informed consent was not required.

Bibliography

1. Dehesa-Dávila M and Possani LD. "Scorpionism and serotherapy in Mexico". *Toxicon* 32.9 (1994): 1015-1018.
2. "Boletín Epidemiológico Sistema Nacional de Vigilancia Epidemiológica Sistema Único de Información 2018" (2018).
3. Gurrola GB and Possani LD. "Structural and functional features of noxiudtoxin: a K⁺ channel blocker". *Biochemistry and Molecular Biology International* 37.3 (1995): 527-535.
4. Dehesa-Dávila M. "Epidemiological characteristics of scorpion sting in León, Guanajuato, México". *Toxicon* 27.3 (1989): 281-286.
5. Chowell G., *et al.* "Epidemiological and clinical characteristics of scorpionism in Colima, Mexico (2000-2001)". *Toxicon* 47.7 (2006): 753-758.
6. Osnaya-Romero N., *et al.* "Clinical symptoms observed in children envenomated by scorpion stings, at the children's hospital from the State of Morelos, Mexico". *Toxicon* 39.6 (2001): 781-785.

7. Alagón A, *et al.* "Alacranismo (T63.2, X22)". *Practica Medica Efectiva* (2003).
8. Meki AR, *et al.* "Significance of assessment of serum cardiac troponin I and interleukin-8 in scorpion envenomed children". *Toxicon* 41.2 (2003): 129-137.
9. Jahan S, *et al.* "Scorpion stings in Qassim, Saudi Arabia-a 5-year surveillance report". *Toxicon* 50.2 (2007): 302-305.
10. Al-Asmari AK and Al-Saif AA. "Scorpion sting syndrome in a general hospital in Saudi Arabia". *Saudi Medical Journal* 25.1 (2004): 64-70.
11. Forrester MB and Stanley SK. "Epidemiology of scorpion envenomations in Texas". *Veterinary and Human Toxicology* 46.4 (2004): 219-221.
12. Isbister GK, *et al.* "Australian scorpion stings: a prospective study of definite stings". *Toxicon* 41.7 (2003): 877-883.
13. Yilmaz F, *et al.* "Epidemiologic and clinical characteristics and outcomes of scorpion sting in the southeastern region of Turkey". *Uluslararası Travma ve Acil Cerrahi Dergisi* 19.5 (2013): 417-422.
14. Pardal PP, *et al.* "Epidemiological and clinical aspects of scorpion envenomation in the region of Santarém, Pará, Brazil". *Revista da Sociedade Brasileira de Medicina Tropical* 36.3 (2003): 349-353.
15. Dabo A, *et al.* "Scorpion envenoming in the North of Mali (West Africa): epidemiological, clinical and therapeutic aspects". *Toxicon* 58.2 (2011): 154-158.

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