

## Case Report

# Scrotum Injury by Scorpion Sting

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## Abstract

*Androctonus crassicauda* is the second most frequent causes of scorpion sting in south-west Iran. Its venom can cause sever pain, autonomic, central nervous system (CNS), muscle function disturbances, and death. Appropriate medical and nursing cares can lead to complete recovery with no sequel. The majority of scorpion stings are oligosymptomatic, occurring mainly on the hands and feet (about 90%). Here one rare case of a scorpion sting on the scrotum is reported from Kashan, central Iran.

**Keywords:** Scorpion sting, *Androctonus crassicauda*, Scrotum, Iran

## Introduction

In Iran 45000-50000 scorpion stings are reported every year (Dehghani 2003). According to the reports a total of 32 species of scorpions are found in Iran (Kovarik 1997). Three species of *Hemiscorpius lepturus*, *Androctonus crassicauda* and *Mesobuthus eupeus* play an important role in almost all cases of scorpion stings in Iran. The black scorpion *A. crassicauda* (Fig.1) and the Gadim (the local name of *H. lepturus*) are considered as the most dangerous scorpions exist in sub-tropical areas of Iran. Scorpion stings recorded in Khuzestan and Hormozgan Provinces have significant social hazard. About 5 species of scorpions were found in the Kashan (Dehghani et al. 1999).

The city of Kashan (33°58'28" N; 51°26'07" E, altitude ca. 850 m asl) in Esfahan Province (central Iran), is one of the oldest cities of Iran. This city is situated in a peculiar natural area. Its west borders Kavir salt desert (Dasht-e Kavir), which is one of

the seven desert plains of Iran and one of the driest and the hottest parts of Iran. On the east, the Karkas Mountains are located, while further to the west, there also is a large mountainous area, the north-eastern portion of the Zagros Mountains (Dehghani 2003).

*A. crassicauda* with sting being common and fatalities on record is of medical importance in the Middle East. *A. crassicauda* is the first and most dangerous cause of scorpion sting in Kashan. At serum therapy center of Kashan, two-hundred cases were observed per year. Thirty percent of the cases of scorpion sting in Kashan and the total of mortality are caused by *A. crassicauda*. The rate of mortality was 1.5% (Dehghani et al. 1999). *Androctonus* genus is very toxic, with symptoms of envenomation including malignant hyperthermia, myocarditis and pulmonary edema and with many lethal stings on record (Nouira et al. 1995). Typical effects of the sting are pain and tenderness at the injection site, with severe neurological effects and hypertension (Nouira et al. 1995). *A. crassi-*

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*cauda* is the second frequent of scorpion sting in south-west Iran. Its venom can cause severe pain, autonomic CNS, muscle function disturbances and death. Appropriate medical and nursing cares can lead to complete recovery with no sequel (Radmanesh 1990). The majority of scorpion stings occurring mainly on the hands and feet (about 90%) are oligosymptomatic and fatality is rare.

Here we report a rare case of a scorpion sting on scrotum from Kashan, central Iran.

### Case report

A 38-yr old man with 88 kg weight, when had been wearing his work trousers was stung on his scrotum by *A. crassicauda*. It was associated with burning pain at the site of sting. Administration of alcohol and pressuring on the sting site were used by victim without success to relieve pain. He received medical assistance one hour after the event when he suffered from diffuse erythema, edema and severe local pain on the scrotum and inguinal lymph node and when severe systemic manifestation including: sweating, thirsty, dry mouth, agitation and restlessness and local muscle spasm were observed. He did not complain of visual disturbances, sensory disturbances or weakness of his limbs. Lidocaine was administered subcutaneously for the immediate relief of the pain. Antivenin to scorpion sting was not administered because it was not available at that time in the center, but he was managed with atropine in order to antagonize the muscarinic effect of Ach and chlorpromazine as a tranquilizing of the agitation and restlessness.

### Discussion

Envenomation by scorpion stings is a major public health problem especially in children in Iran (Radmanesh 1990). Scorpions are held responsible for a lot of injured annually, especially in the rural areas and dur-

ing the hot seasons (Dehghani 2003). Envenoming by the Iranian scorpion *A. crassicauda* can cause massive discharge of catecholamine. The relationship between these effects and the clinical situation is unclear (Vatanpor 2003). *A. crassicauda* venom can specifically stimulate the acetylcholine receptors through the body, so it can be considered as neurotoxic venom (Radmanesh 1990). The classical clinical picture of scorpion stings is characterized by local pain, which may extend to regional lymph nodes, hyperemia and edema (Garcia et al. 1999). Systemic manifestations are meiosis, lacrimation, strabismus, increased salivation, dry mouth, thirst, increase bronchial secretion, sweating, nausea, vomiting, priapism, urinary incontinence, confusion, coma, local muscle spasm, general muscle paralysis, convulsion, more commonly in children and old people (Radmanesh 1990). Hypertension, hypothermia, cardiac arrhythmia and pulmonary edema may also occur.

There are only three reported cases of stings on unusual areas of the body: one on the face (Nishioka et al. 1992) by *T. serrulatus* and two on the penis (Nishioka et al. 1993), both by *T. serrulatus* and *T. trivittatus* (Garcia et al. 1999). In addition to unusual site of the sting, our patient showed a clinical picture of mild intensity. Self-administration of alcohol may have contributed to augmenting the pain. A sting on the scrotum should be treated like stings on any other part of the body. Local analgesic block with 1% lidocaine for pain relief is usually resorted to. For those cases of systemic manifestation, a specific antivenin is indicated. Using prazosin for treatment of hypertension and acute pulmonary edema has been reported to be successful. In our case report the scorpion was the *A. crassicauda* species, and mild systemic manifestations were observed. *A. crassicauda* venom can increase the release of acetylcholine at the neuromuscular junction by both increasing quantal content as well as the release after single shock

stimulation (Vatanpor 2003). In addition injection of *A. crassicauda* venom in animal laboratory such as rat, clinical manifestations were occurred include: paralysis, irregular pulse, twitching, rhinorrhea, salivation, hemorrhage from eyes, nosebleeds and death (Dehghani et al. 2006). The venom of *A. crasicuda* predominantly parasympathetic effects but it is possible that under special circumstances it may also cause sympathetic activities (Radmanesh 1990). The venom of *A. crasicuda* is a potent autonomic stimulator. Severity of symptoms depends on the size of the victim, season, and duration lapse between sting and hospitalization. So therapy should disappear such effects. First aid measures should include putting ice on the sting site and elevation of the affected part. General supportive measures include the use of anti-

histamines, corticosteroids, and analgesics. Barbiturate therapy is recommended to control seizures and excessive neuromuscular activity (Carbonaro et al. 1996). We recommend that the treatment for scorpion stinging in Kashan should be based on the neurotoxic effect of their venom produced in victims (Dehghani et al. 1998).

In many cases, the patients were stung by scorpions due to their lack of knowledge and carelessness such as in putting their hands into scorpion homes, walking barefoot, lifting up stones carelessly, and putting on their clothes and shoes without shaking them to check for scorpions (Ozkan et al. 2005).

In conclusion, people living in those regions where most scorpion stings were seen must be educated and informed about scorpions and their stings.



**Fig. 1.** *Androctonus crassicauda* (scorpion from Kashan)

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