

Short communication

## Acute allergic reaction following contact with a spider

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### Abstract

Allergic reactions following contact or injury from arachnids are uncommon. There have previously only been reports of urticarial reactions following contact with large spiders from the family Theraphosidae. A 55-year-old male presented to hospital with a generalised urticarial rash following contact with a spider, identified by the person as a huntsman spider (Family: Sparassidae). The spider had crawled over both his arms for a period of minutes. About 30 min later, he developed a rash on the arms which spread to the trunk. He then developed bradycardia and hypotension that required treatment with atropine, adrenaline and histamine antagonists. He recovered within 6 h and had no further problems. The early allergic reaction in this case was most likely the result of contact with the spider. © 2002 Published by Elsevier Science Ltd.

**Keywords:** Allergic reactions; Arachnids; Urticarial rash; Spider; Allergy

### 1. Introduction

Allergic reactions due to bites and stings by various creatures are not uncommon, and are usually classified as early or immediate (seconds to minutes), or delayed (hours to days); (Norment, 1976). Early allergic reactions to Hymenoptera (bees, wasps, hornets and ants) are the best characterised of allergic reactions to arthropods. Delayed hypersensitivity reactions have also been reported following arthropod injuries and there is evidence to suggest that the pathogenesis of necrotic lesions of loxoscelism is at least partially due to a delayed hypersensitivity reaction (Norment, 1976; Maso et al., 1987).

It is sometimes suggested that spider-bites can cause hypersensitivity reactions (Davies and Raven, 1986). Despite this common notion, there is little evidence to support spider-bite being a cause of allergic reactions. However, contact with spiders has been reported to cause urticarial reactions, almost exclusively from large spiders from the family Theraphosidae (Cooke et al., 1973; Castro et al., 1995; Blaikie et al., 1997). These spiders have large numbers of urticating hairs on their abdomen that can be ejected from their body when they are disturbed (Cooke

et al., 1973). There are mainly reports of eye injuries following exposure to these spiders (Bernardino and Rapuano, 2000; Waggoner et al., 1997; Blaikie et al., 1997), but the hairs have also been reported to cause skin reactions (Cooke et al., 1973; Castro et al., 1995). There are no reports of allergic type reactions occurring following contact with other groups of spiders.

I report the case of an early allergic reaction or anaphylaxis following contact with a spider (Araneae), most likely belonging to the huntsman family Sparassidae.

### 2. Case report

A 55-year-old male was brought to hospital with a generalised rash and hypotension following contact with a spider. He had a history of hypertension and hypercholesterolaemia and had a normal exercise stress test 3 weeks prior to presentation. He was on 20 mg fosinopril and 20 mg of simvastatin daily. He had no history of allergies to medications or Hymenoptera. However, he had suffered from a significant generalised rash after contact with ruse and mango trees.

Whilst driving to the beach at 5.00 a.m., a spider crawled out from under the left sleeve of his shirt. He was confident that the spider was a huntsman spider, which was confirmed

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by a friend in the car. He did not fear spiders and left it alone. Three minutes later the spider re-appeared from the right sleeve and ran down his arm to his wrist, and he flicked it out of the car window. At no time did he feel pain or a bite. He subsequently arrived at the beach, walked 2 km up the beach, and started fishing, about 20 min after the spider had crawled on him. A rash appeared at this time on both arms, and spread to his trunk. Thirty minutes after the spider contact he felt 'hot' and went for a swim. He then felt dizzy and asked his friend to go back to the car. Ten minutes later while walking back he could not stand and started to lose his vision.

An ambulance was called and on arrival the man was drowsy and could not see at all. His observations were heart rate (HR) 43 and blood pressure (BP) 75/60, with a Glasgow coma score (GCS) of 15. Intravenous (IV) access was obtained and he was given 500 ml of colloid. He was administered 0.5 mg of IV atropine sulphate, 10 mg of IV metoclopramide and 300 mg of oral aspirin. His HR and BP responded and he was retrieved by helicopter to the closest tertiary hospital. During the transfer he had a second episode of bradycardia that responded to another 0.5 mg of atropine sulphate and he was commenced on 1000 ml of Hartmann's solution.

On arrival to hospital he was alert with a GCS 15. He had a generalised urticarial rash including both arms and torso. His observations were a HR of 62 (sinus rhythm), a BP of 114/86 and a normal cardiovascular and respiratory examination. He had no electrocardiograph changes consistent with myocardial ischaemia or infarction. He was treated with 1000 ml of normal saline, 25 mg of IV promethazine, 200 mg of IV hydrocortisone, 50 mg of IV ranitidine and 0.5 mg of adrenaline intramuscularly, for a suspected allergic reaction.

Six hours after the contact with the spider he was feeling much improved and the rash had almost resolved. His pulse rate and BP had remained unchanged so he was discharged home. On follow up during the next week he had no further problems.

### 3. Discussion

This is the first report in Australia of an immediate or urticarial allergic reaction following contact with a spider, most likely from the family Sparassidae. Unfortunately the spider was not caught at the time of the incident for accurate identification. Huntsman spiders are common in Australia and most people are able to correctly identify them. The author was unable to find any cases of anaphylaxis following spider contact using MEDLINE (1966–2002 February) and to the author's knowledge this is the first case of such a reaction to spider contact.

Although sparassids or huntsman spiders are common in Australia, they have a worldwide distribution. They include

many different species of large hunting spiders that are seen indoors and outdoors. They are one of the commonest causes of spider-bite in Australia but cause only minor effects (Isbister and Gray, 2001). They are often found in cars, compared to other spider families, and are more often responsible for creating fear and havoc for drivers (David Hirst, personal communication, 2002).

The patient in this case reported no pain or bite, so it is highly unlikely that the allergic reaction was due to a bite from the spider. The sequence of events is far more consistent with a contact reaction to the spider. This is supported by the duration (almost 5 min) in which the spider was in contact with the patient's skin, mainly his arms, where the rash commenced. In addition the time course of about 30–40 min, and the sequence of events, of a localised rash spreading to his whole body, followed by systemic effects, also supports a contact allergic reaction.

The patient had a previous history of contact allergies to plants and was on an angiotensin-converting enzyme (ACE) inhibitor. It has been suggested that ACE inhibitors may worsen the severity of anaphylactic reactions (Brown et al., 2001). Although he was initially treated by the ambulance service as a suspected myocardial infarction, there was no evidence for this on subsequent clinical examination or investigation.

Contact with other arachnids has been reported to cause allergic reactions. This has become a particular problem in researchers and persons handling spiders (Castro et al., 1995). Castro et al. demonstrated in a group of nine individuals regularly handling theraphosid spiders (tarantulas), that the urticating hairs of the spiders were actually allergens, rather than just mechanical irritants. These individuals appeared to develop hypersensitivity to the spiders over a period of years, with skin irritation, pruritus, coryza, sneezing, conjunctivitis, urticaria and finally angioedema. Titres of specific IgE to the urticating hair extracts, from the spiders, were significantly higher in the group of patients, compared to controls. Unfortunately the nine patients were all female and the study gives no indication as to the total number of persons exposed to the spiders (Castro et al., 1995).

It can only be presumed that contact with some element of the exoskeleton of the spider or something secreted by the spider caused the reaction. There has been no prior published reports of contact effects from huntsman spiders, but there is one report of contact with spider excreta causing an inflammatory reaction characterised by swelling and erythema of the forearm (McKeown, 1963). Huntsman spiders do not have the same type of urticating hairs as theraphosids, so investigation of other external parts of the spider would be required to define the allergenic nature of these spiders.

Although uncommon, contact with spiders should be considered as a cause of early allergic reactions, and not their bite. Persons with a history of contact allergies should

be advised to take extreme care when handling spiders, but in the general population this will not be a major concern.

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