



MYGALOMORPH SPIDER BITES: A REPORT ON 91 CASES IN THE STATE OF SÃO PAULO, BRAZIL

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S. M. LUCAS, P. I. DA SILVA JR., R. BERTANI and J. L. C. CARDOSO. Mygalomorph spider bites: a report on 91 cases in the State of São Paulo, Brazil. *Toxicon* **32**, 1211–1215, 1994.—From 1966 to 1991 91 cases of bites due to mygalomorph spiders were recorded at the Hospital Vital Brazil, Instituto Butantan, São Paulo, Brazil, representing less than 1% of all spider bites. The diagnosis was confirmed by positive identification of the spider involved. Envenoming is generally mild, the main symptom is local pain, and there is minor oedema and erythema. The data confirm the assumption that these nonaggressive spiders pose no health problem.

INTRODUCTION

REPORTS on bites in humans caused by mygalomorph spiders, commonly named tarantulas or bird spiders, are rare. Generally, these bites are not considered to be of medical importance (BAERG, 1958; BÜCHERL, 1962; WHITE *et al.*, 1989; SCHMIDT, 1992). However, bites by the spiders of the genus *Atrax*, mainly *A. robustus*, the Sidney funnel-web spider of Australia, are exceptional, producing severe envenoming symptoms (SUTHERLAND, 1972).

In laboratory tests venoms of some other mygalomorph species, such as from *Pterinochilus* sp. (FREYVOGEL, 1972) and from *Trechona venosa* (BRAZIL and VELLARD, 1925), exhibited considerable toxicity in vertebrates. However, no serious consequences of bites in humans involving these species have been reported.

This paper presents epidemiological and clinical data concerning mygalomorph spider bites recorded at the Hospital Vital Brazil, Instituto Butantan, São Paulo, over 25 years (1966–1991), where bites from venomous animals which occurred in the city of São Paulo and its vicinities are treated.

MATERIALS AND METHODS

In this study, hospital records were analysed for the period between 1966 and 1991. Only those accidents where the spider was available for identification have been considered.

TABLE 1. NUMBER OF SPIDERS INVOLVED IN BITES PRESENTED TO THE HOSPITAL VITAL BRAZIL AND SENT FOR IDENTIFICATION TO THE ARTHROPOD LABORATORY DURING 1976–1991

Spider species	Hospital	Arthropod Laboratory
Mygalomorphae	63 (0.9%)	12,747 (18.1%)
<i>Phoneutria</i> sp.	4644 (67.3%)	19,373 (27.5%)
<i>Loxosceles</i> sp.	73 (1.1%)	6993 (9.9%)
Others	2120 (30.7%)	31,433 (44.5%)

RESULTS

Bites caused by mygalomorph spiders represented only 0.9% of all arthropod accidents registered at the Hospital Vital Brazil from 1976 to 1991, whereas spiders of the genus *Phoneutria* were involved in 67.3% in these cases (Table 1).

The majority of mygalomorph spider bites were caused by species belonging to the family Theraphosidae, mainly *Acanthoscurria gomesiana* (Table 2). Mygalomorph spiders which live in burrows below ground (families Actinopodidae, Nemesiidae and Idiopidae) were responsible for 25.0% of all bites. The only species of the family Dipluridae which caused bite accidents was *Trechona venosa*.

Mygalomorph spiders represented 18.0% of the total number of arthropods received by the Arthropod Laboratory of the Instituto Butantan for identification, whereas spiders of the genera *Phoneutria* and *Loxosceles* represented 27.0% and 10.0%, respectively (Table 1).

Children between 1 and 7 (25.3%, 23 cases) and adults between 21 and 35 years of age (20.9%, 19 cases) are mainly involved in bites; males (68.0%) more than females (32.0%). The bites usually occurred during the day, mainly between 6:00 and 12:00 noon (48.4%, 44 cases). The body parts most frequently affected were hands and fingers (42.9%, 39 cases) and feet (31.9%, 29 cases).

The clinical symptoms observed were characterized by local signs and symptoms, without late complications such as necrosis. Of the 91 registered bites only 48 required treatment. The main symptoms were local pain only (47 cases), pain and local oedema (16 cases) and pain and erythema (6 cases). Formication and itching were observed in a few cases. Treatment normally consisted of an anaesthetic local block and oral administration of an analgesic and/or an antihistaminic drug (Table 3).

TABLE 2. MYGALOMORPH SPIDERS INVOLVED IN BITES REGISTERED IN THE HOSPITAL VITAL BRAZIL DURING 1966–1991

Family	Genus/Species	No. of bites	Percentage
Theraphosidae	<i>Acanthoscurria gomesiana</i>	37	41
	<i>Vitalius</i> sp.	7	8
	Unidentified	4	4
Actinopodidae	<i>Actinopus</i> sp.	5	5
Idiopidae	<i>Idiops</i> sp.	1	1
Nemesiidae	<i>Rachias</i> sp.	9	10
	Unidentified	8	9
Dipluridae	<i>Trechona venosa</i>	3	3
Unidentified		17	19
Total		91	100

TABLE 3. CASE SUMMARIES

Spider (Family)	No. of bites	Local effects	Systemic effects	General treatment
<i>Acanthoscurria gomesiana</i> (Theraphosidae)	37	21 local pain 8 local pain and oedema 3 local pain and erythema 2 local pain, oedema and erythema 1 local pain and itching 1 assintomatic 1 not registered	none	24 cases* treated with anaesthetic local block and oral administration of an analgesic and/or an antihistaminic drug†
<i>Vitalius</i> sp. (Theraphosidae)	7	3 local pain 2 local pain and oedema 2 not registered	none	4 cases treated with anaesthetic local block and oral administration of analgesic drug†
<i>Rachias</i> sp. (Nemesiidae)	9	5 local pain 1 local pain and oedema 2 local pain and erythema 1 local pain, oedema and erythema	none	4 cases treated with anaesthetic local block or oral administration of analgesic drug†
<i>Actinopus</i> sp. (Actinopodidae)	5	2 local pain 1 assintomatic 2 not registered	none	1 case treated with oral administration of antihistaminic drug†
<i>Trechona venosa</i> (Dipluridae)	3	1 local pain 1 local pain and oedema 1 local pain and formication	none	1 case treated with anaesthetic local block†
<i>Idiops</i> sp. (Idiopidae)	1	1 local pain, oedema and erythema	none	1 case treated with oral administration of analgesic drug
Nemesiidae	8	1 local pain 2 local pain and oedema 1 local pain and itching 2 not registered	none	2 cases treated with oral administration of analgesic drug†
Theraphosidae	4	1 local pain 1 local pain and oedema 1 local pain, oedema and erythema 1 not registered	none	1 case treated with anaesthetic local block†
Unidentified	17	9 local pain 1 local pain and oedema 1 local pain and erythema 3 local pain, oedema and erythema 3 not registered	none	10 cases treated with anaesthetic local block and oral administration of an analgesic and/or antihistaminic drug†

*1 case (intense local pain) treated with anaesthetic local block and scrotherapy (SAA, antiarachnidic serum: 2 ampoules).

†In the other cases treatment was not necessary.

DISCUSSION

Mygalomorph bites registered at the Hospital Vital Brazil between 1966 and 1991 represented less than 1.0%, a small proportion, of all treated spider bite accidents. The number would be higher if all bites where the spider was not captured and brought for identification were considered. However, these spiders are sent to the laboratory in large numbers every year (18.0%), probably due to their large size which attracts attention. With

few exceptions these spiders do not live inside or near human dwellings and do not bite easily.

As shown in Table 1 the non-aggressive brown spiders of the genus *Loxosceles* present a similar percentage of bites compared to those caused by mygalomorph spiders. They frequently live near or inside the human dwellings, sometimes even in dense populations (HUHTA, 1972; RIBEIRO *et al.*, 1993). However, due to their small size and their secret habits, they are rarely sent to the Arthropod Laboratory. In contrast, spiders of the genus *Phoneutria*, which are aggressive and bite easily, are responsible for most spider bite accidents in São Paulo. These medium-sized spiders live inside or near human dwellings and are frequently captured and brought to the laboratory.

Spiders of the family Theraphosidae are responsible for the majority of mygalomorph bites (53.0%). The species *Acanthoscurria gomesiana* (Fig. 1), which is commonly found in and around the city of São Paulo, is responsible for many of these bites. This fact can be explained by its abundance, moreover this spider species bites easily. A relatively high percentage (25.0%) of mygalomorph spider bites involves species which normally live in burrows below ground. These bites usually occur during agricultural or gardening work.



FIG. 1. *Acanthoscurria gomesiana* (THERAPHOSIDAE).

Spiderlings emerging from one egg sac make their burrows near the 'mother burrow', leading to a higher population density. These spiders often occur near human dwellings, and even in urban areas.

In laboratory tests, the venom of *Trechona venosa* was shown to be very active in mice, rats and pigeons (BRAZIL and VELLARD, 1925). However, bites do not cause serious envenoming in humans.

Some patients did not present symptoms, probably due to the fact that the spider did not inject venom. This has also been observed by MARETIC (1971) in the species of the genus *Pterinochilus* in Africa. However, when disturbed, *Acanthoscurria gomesiana* quickly assumes a defensive attitude, elevating the front legs, and trying to bite. It is even possible to see venom drops emerging from the chelicerae. In all the registered accidents with this spider pain was reported, presumably because venom was injected.

The fact that all cases of mygalomorph spider bites presented to the Hospital Vital Brazil exhibited only mild symptoms of envenoming, i.e. local pain, supports the assumption that these large spiders are not dangerous (at least in Brazil); their bites are certainly not a health problem.

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