Revista Ibérica de Aracnología, nº **31** (31/12/2017): 143–144.
Grupo Ibérico de Aracnología (S.E.A.). ISSN: 1576 - 9518.

First case of bite by a wolf spider (Araneae: Lycosidae) reported from southern Patagonia

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Abstract: A case of bite by the wolf spider *Lycosa magallanica* (Karsch, 1880) is reported. The victim, a female teenager, had a local lesion including a small necrotic patch. The significance of the case and possible explanations for the reaction are discussed.
Key words: Araneae, Lycosidae, arachnoidism, bite, necrotising, Patagonia.

Primer registro de una mordedura de araña lobo (Araneae: Lycosidae) en el sur de la Patagonia
Resumen: Se registra una mordedura ocasionada por el licósido *Lycosa magallanica* (Karsch, 1880). La víctima, una adolescente, mostraba una lesión local, que incluía un pequeño parche necrótico. Se discute la trascendencia del caso y las posibles explicaciones para esta reacción.
Palabras clave: Araneae, Lycosidae, aracnoidismo, mordedura, necrotizante, Patagonia.

Introduction

Lycosidae, commonly known as "wolf spiders" is a family that contains 2419 species within 124 genera (World Spider Catalog, 2017). Lycosids are recognized by having eight eyes distributed in three rows (2-2-4). Lycosidae is distributed worldwide (World Spider Catalog, 2017) and depending on the species live diverse habitats, some of them burrow in sand of coastal regions, others live in grasslands and dry forest (Jocque *et al*., 2017). Lycosids are hunters, and usually do not build a web (Eberhard & Hazzi, 2017).

Lycosa magallanica (Karsch, 1880) is a South Patagonian species of Lycosidae. Little is known about the biology of this species, and it has been found inside homes and peridomestic environments (Faúndez, 2009; Taucare-Ríos *et al.*, 2013). The purpose of this contribution is to report the first known bite cases for this species.

The development of the bites was followed and photographed on daily basis until it started to recede. Photos were taken with a digital camera. In systematics we follow the World Spider Catalog (2017). For the spider identification we follow Karsh (1880), Simon (1902) and Tullgren (1901). For terminology of the case we follow Isbister & White (2004) and in descriptive format to Faúndez & Téllez (2016a) plus the recommendations given by Stuber & Nentwig (2016).

Results

The attack by a mature female of *L. magallanica* occurred at night Puerto Natales city, Última Esperanza Province, Magallanes Region, Chile in September 2016. A teenager female (15 years old) was bitten on the upper surface of the cheek, near the eye, on the right side of the face. The spider punctured the skin and then was killed.

The bite caused irritation and redness including moderate pain. The area surrounding the bite got swollen and a wound with necrotic aspect started to appear (Fig. 1a). In the following days, the wound matured and necrotized tissue was observed in the wound (Fig. 1b, 1c, 1d).

On the fourth day, the bite initially was treated with antibiotics which did not stop the advancing of the necrotizing tissue. After that, a spider bite corticoid-based treatment stopped the advancing of the wound. After the recovery of the bite, a concave scar was left in the area of the bite (Fig. 2)

Discussion and conclusion

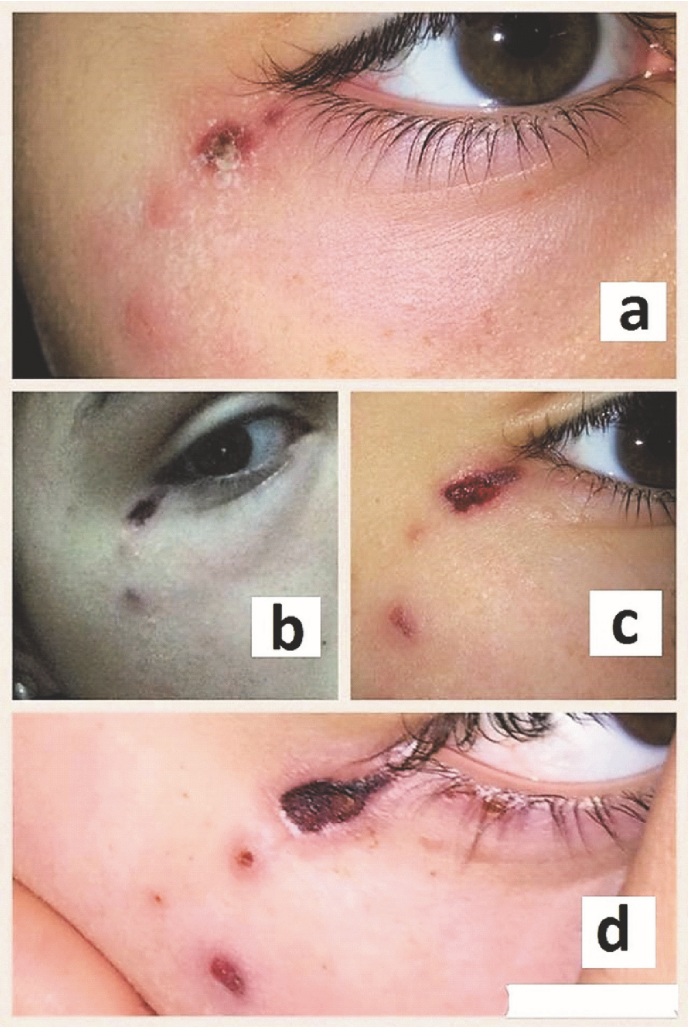
Wolf spider bites have been widely mentioned as necrotic in literature (Isbister & White, 2004; Faúndez, 2009). However, several studies demonstrated that in many cases these spiders cannot inflict such reactions (Ribeiro *et al.*, 1990; Isbister & Framenau, 2004; Isbister & White, 2004). As a result, it has been hypothesized that Lycosidae cannot really produce necrotizing lesions (Isbister & White, 2004). However, peptide toxins known as lycotoxins have been identified and described as pore forming referring to their hemolytic action in erythrocytes (Yan & Adams, 1998). On the other hand, the current taxonomic problems in Lycosidae contributes to increase confusion, as many species within this family are probably classified in the wrong genera (Isbister & White, 2004; Faúndez, 2009). Besides that, in Chile there is one record of a verified bite of a wolf spider *Lycosa implacida* Nicolet, 1849 (as *Lycosa murina* Nicolet, 1849) by Donoso-Barros (1949). The case here described looks similar to the one in Donoso-Barros (1949), but without developing ulcers. An explanation for the appearance of these cases in Chile may be the poor knowledge of Lycosidae, and possibly a small group of them (maybe a genus or subgenus) can produce necrosis under certain circumstances. The other explanation is the action of some pathogens instead of the spider venom itself. Skin injuries usually have the most adequate conditions for microorganism development and growth. In the study by Fagan *et al.* (2004) from all patients in treatment for necrosis caused by spider bites, the authors were able to culture *Staphylococcus aureus* and in 86.8% of the patients Methicillin Resistant *S. aureus* (MRSA) was recovered. More research is needed to confirm that microorganisms are the cause of necrosis from spider bites.

We have known several cases of necrotic bites by spiders in which the spider was not caught. However, in these localities (i.e. field in Southern Patagonia) there is not present, any known necrotizing known spider (e.g. Chilean Sicariids) but there is plenty of spiders in other families (Faúndez & Téllez, 2016b).

It is important to mention that spider bites are usually neglected in Chile by the lack of knowledge to properly identify the spiders, therefore generating biased statistics (Faúndez, 2009; Faúndez & Téllez, 2016b). On this case, the lack of knowledge by primary healthcare providers played a role, as they failed to initially give importance to the spider bite in the case, and not providing appropriate treatment until the bite was properly assessed. Therefore it is recommended to increase the training programs on medical important arthropods among the healthcare professionals in the country, to help both, improve the epidemiological data and provide a better service to the community.

Acknowledgements

We thank Francisca Andrea Sazo Blaitt for providing her help during the realization of this work.



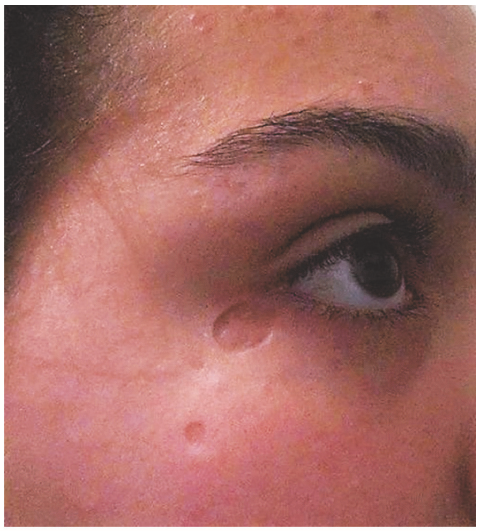


Fig. 2. Scar left by the bite of *L. magallanica*, a year after the bite.

Fig. 1. a-d. Bite by *L. magallanica*, daily evolution.

Cited references

DONOSO-BARROS R. 1949. Consideraciones sobre aracnoidismo cutáneo en Chile. *Archivos Uruguayos de Medicina*, **32**: 184-206.

EBERHARD, W. G. & N. A. HAZZI 2017. Web building and prey wrapping behavior of *Aglaoctenus castaneus* (Araneae: Lycosidae: Sosippinae). *Journal of Arachnology*, **45**(2): 177-197.

FAGAN, S.P., D.H. BERGER, K. RAHWAN & S. S. AWAD 2004. Spider Bites Presenting with Methicillin-Resistant *Staphylococcus aureus* Soft Tissue Infection Require Early Aggressive Treatment. *Surgical Infections*, **4**(4): 311-315.

FAÚNDEZ, E. I. 2009. Arañas (Arachnida: Araneae) peligrosas de la Región de Magallanes. *Anales del Instituto de la Patagonia*, **37**(1): 127-131.

FAÚNDEZ, E. I. & F. TÉLLEZ 2016a. Primer registro de una mordedura de *Steatoda nobilis* (Thorell, 1875) (Arachnida: Araneae: Theridiidae) en Chile. *Arquivos Entomolóxicos*, **15**: 237-240.

FAÚNDEZ, E. I. & F. TÉLLEZ, 2016b. Consideraciones sobre *Steatoda nobilis* (Thorell, 1875) en Chile. *Biodiversity and Natural History*, **2**(1): 13-15.

ISBISTER, G. K. & V. W. FRAMENAU 2004. Australian wolf spider bites (Lycosidae): clinical effects and influence of species on bite circumstances. *Journal of Toxicology: Clinical Toxicology*, **42**(2): 153-161.

ISBISTER, G. K. & J. WHITE 2004. Clinical consequences of spider bites: recent advances in our understanding. *Toxicon*, **43**: 477-492.

JOCQUE, M., S. WELLENS, J. D. ANDRIANARIVOSOA, F. RAKOTONDRAPARANY & R. JOCQUÉ 2017. A new species of *Ocyale* (Araneae, Lycosidae) from Madagascar, with first observations on the biology of a representative in the genus. *European Journal of Taxonomy*, **355**: 1-13.

KARSCH, F. 1880. Arachnologische Blätter (Decas I). *Zeitschrift für die Gesammten Naturwissenschaften, Dritte Folge*, **5**: 373-409.

RIBEIRO, L. A., M. T. JORGE, R. PIESCO & DE S. ANDRADE NISHIOKA 1990. Wolf spider bites in Sao Paulo, Brazil: a clinical and epidemiological study of 515 cases. *Toxicon*, **28**(6): 715-717.

SIMON, E. 1902. Arachnoideen, excl. Acariden und Gonyleptiden. In: *Ergebnisse der Hamburger Magalhaensische Sammelreise. Hamburg*, **6**(4): 1-47.

STUBER, M. & W. NENTWIG 2016. How informative are case studies of spider bites in the medical literature?. *Toxicon*, **114**: 40-44.

TAUCARE-RÍOS, A., A. BRESCOVIT & M. CANALS 2013. Synanthropic spiders (Arachnida: Araneae) from Chile. *Revista Ibérica de Aracnología*, **23**: 49-53. Disponible en www.sea-entomologia.org

TULLGREN, A. 1901. Contribution to the knowledge of the spider fauna of the Magellan Territories. *In*: *Svenska Expeditionen till Magellansländerna*, **2**(10): 181-263.

WORLD SPIDER CATALOG 2017. *World Spider Catalog*. Natural History Museum Bern, online at http://wsc.nmbe.ch, version 17.0, accessed on 11/11/2017.

YAN, L. & M. E. ADAMS 1998. Lycotoxins, antimicrobial peptides from venom of the wolf spider *Lycosa carolinensis*. *Journal of Biological Chemistry*, **273**: 2059-2066.