On a bite by *Steatoda nobilis* (Thorell, 1875) (Araneae: Theridiidae) on a human being, with comments on its handling during the 2020 SARS-COV-2 pandemic

Eduardo I. Faúndez*, Mariom A. Carvajal & Nataly P. Aravena-Correa

Laboratorio de entomología y salud pública, Instituto de la Patagonia, Universidad de Magallanes, Av. Bulnes 01855 P.O. Box 113-D. Chile. ed.faundez@gmail.com

Abstract: A bite by the false widow *Steatoda nobilis* (Thorell, 1875) is reported from Chile. The victim, a 33-year-old female was bitten twice, and suffered radiating pain and erythema for 36 hours, with reminiscent symptoms that lasted for the next two days. The symptoms of the bite are commented on; in addition, its handling by health providers during the current SARS-CoV-2 pandemic is discussed.
Key words: Araneae, Theridiidae, *Steatoda nobilis*, spider, bite, Synanthropic, invasive species, Chile.

Sobre un caso de mordedura de *Steatoda nobilis* (Thorell, 1875) (Araneae: Theridiidae) en un ser humano, y comentarios sobre su manejo durante la pandemia de SARS-COV-2 en 2020
Resumen: Se reporta un caso de mordedura de la falsa viuda *Steatoda nobilis* (Thorell, 1875) en Chile. La víctima, una mujer de 33 años, fue mordida en dos ocasiones, presentando dolor irradiante y eritema por 36 horas y síntomas remanentes por los siguientes dos días. Se comenta y discute la sintomatología del caso, así como el manejo del caso por profesionales de la salud durante la pandemia actual de SARS-COV-2.
Palabras clave: Araneae, Theridiidae, *Steatoda nobilis*, araña, mordedura, sinantrópica, especie invasora, Chile.

Introduction

Steatoda Sundevall, 1833 is a genus of spiders widely spread around the World (World Spider Catalog, 2020). These spiders are characterized by a brownish coloration, an ivory band in the anterior zone of the abdomen, and a fleshy colulus (Levi, 1962). *Steatoda*, commonly known as false widows, contains nearly 120 species (World Spider Catalog, 2020). Several species in this genus are highly synanthropic and also cosmopolitan (Levi, 1967).

As its common name refers, ¨false widows¨ are usually confused with true widow spiders in the genus *Latrodectus* Walckenaer, 1805; from which easily can be differentiated by presence of cheliceral tooth (Levi, 1967). Because of this resemblance, there are several myths about the bites of *Steatoda* (Faúndez & Téllez, 2016b). However, although that steatodism is similar to latrodectism, it is considerably less severe (Isbister & White, 2004).

Steatoda nobilis (Thorell, 1875), a species originally described from Canarias and Madeira; is currently considered cosmopolitan (World Spider Catalog, 2018). It has successfully invaded several European countries and the United States (Melic, 1995; Vetter & Rust, 2012; Dugon *et al.,* 2017). Most recently, it spread in South America including Chile, Colombia and Ecuador (Taucare-Ríos *et al.,* 2016; Faúndez *et al*., 2018). The purpose of this contribution is to describe a new bite case of *S. nobilis* in Chile.

Material and Methods

The development of the bites was followed and photographed on a daily basis until receded. Photos were taken with a digital camera. In systematics we follow the World Spider Catalog (2020). For the spider identification we follow Levi (1967) and Faúndez *et al.* (2018). For terminology of the case we follow Isbister & White (2004) and in descriptive format to Faúndez & Téllez (2016a). The pain was rated in a 1 to 10 scale where 10 is the most painful.

Results

The bite, exerted by a mature female specimen of *S. nobilis* (Fig. 1), occurred in Longavi, Maule Region, Chile, on March 30th at 10:45am. The victim was a 33 years old woman, in healthy status. The spider perpetrated two bites in the left calf (Fig. 1 A-C). The symptoms included irritation and local pain (pinprick like) during the first half hour (3/10) (Fig. 1A). The pain intensified and radiated apt to crotch (7/10) (Fig. 1C). Two irregular erythematous patches appeared in the area of each bite, of 12 mm and 6 mm respectively. After an hour, the pain relocated in the calf, with a radio of nearly 6 cm around the bites. The pain was accompanied by an itching/burning sensation. During the following hours the symptoms were constant; at 19:30 faded for a few minutes and returned with lesser intensity (3/7). Also the erythematous area started to fade. By 23:30 pm the pain started a cycle of more and less intensity for two hours (from 3/10 to 8/10) until the victim fell asleep. At 6:54 of March 31st, the victim woke up with itching and pain in the bitten area, less than the day before (3/10). This sensation persisted during the day up to around 4:00 pm when it started to vanish. Pain and itching was intermittent during the next hours and finished by 23:00 pm with a weak itching sensation. Redness disappeared gradually during the next two days.

The victim did not receive any medical treatment. Although she went to the emergency room, she waited for attention from noon to 17:00 and finally decided to go back to home without being treated or consulted. During the pre-evaluation stage, the victim was told to wait for health personnel to observe any further reaction to appear and start a possible treatment, without identifying the spider.

Discussion and conclusion

Steatodism is defined as causative of radiating pain (median duration 6 h) and systemic effects (nausea, headache, malaise and lethargy) (Isbister & White, 2004). However, the range of manifestations in steatodism is relatively wide; including symptoms lasting for nearly an hour to 72 hours (Isbister & Gray, 2003; Faúndez & Téllez, 2016a; Dunbar *et al*., 2017). There have been several reports of bites caused by *S. nobilis*. Overall, the steatodism caused by its bite is considered slightly more severe than when caused by other false widows. Although there is a lot of misinformation in the web and the media, this species and nor either any false widow has caused death. Thus *S. nobilis* is considered of moderate medical importance (Warrell *et al*., 1991; Faúndez & Téllez, 2016a; Dunbar *et al*., 2017).

This case can be placed into the most severe side of the cases, having long term pain and nuisance, lasting for nearly 36 hours and reminiscences for about two more days. A possible explanation for this is that the spider was an adult female, and bitten the victim twice. Usually both, males and juvenile, tend to cause less painful bites (Faúndez & Téllez, 2016b).

In the midst of the coronavirus SARS-CoV-2 (coronavirus disease 2019; previously 2019-nCoV) pandemic, the world is facing the biggest health challenge since the beginning of the century. As

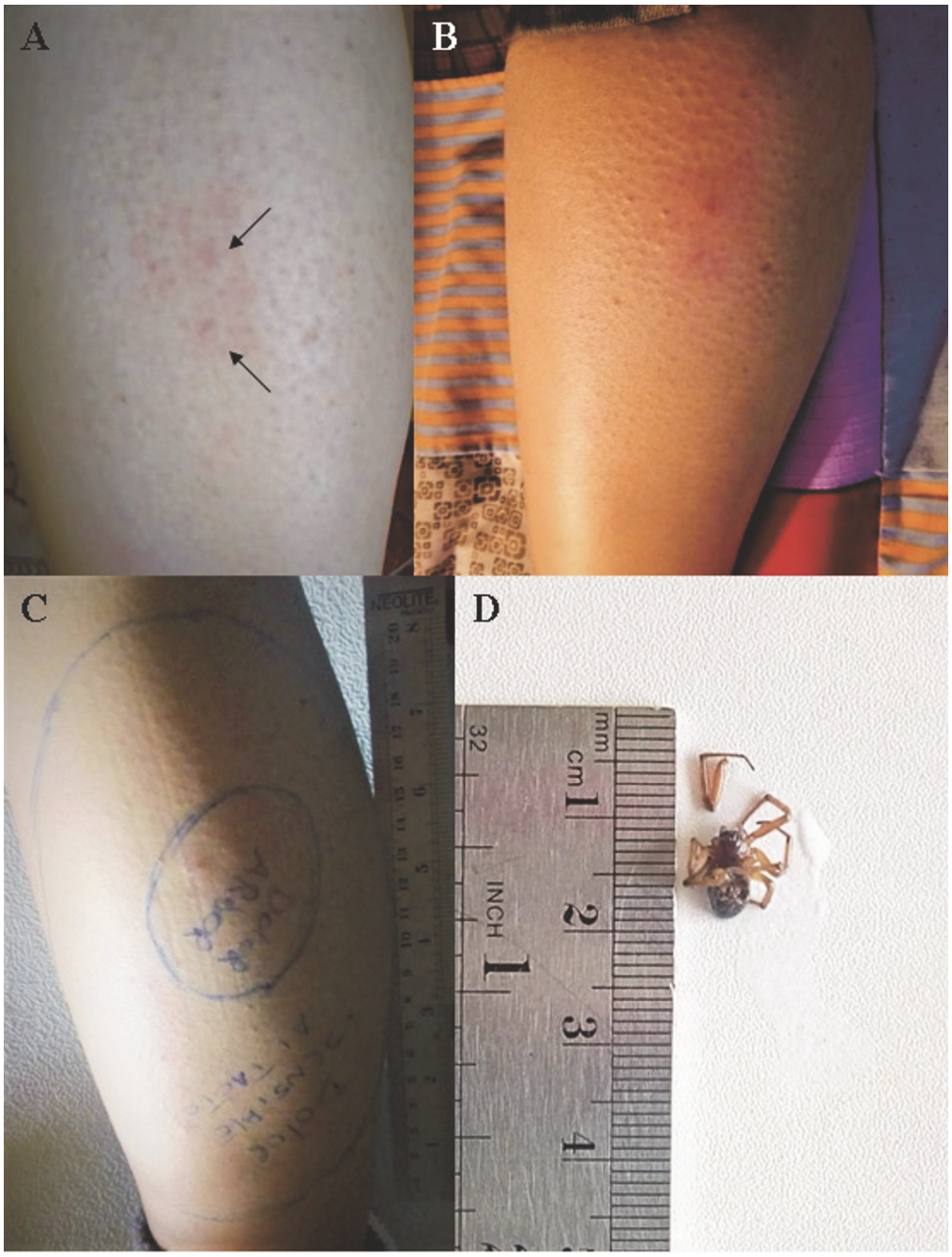


Fig. 1. *Steatoda nobilis* bite. **A**. Initial stage, showing two bite sites. **B**. Bite after 8 hours. **C**. Schematic indication of pain; internal circle = local pain, external circle = radiating pain and itching. **D**. Specimen responsible for the bites.

of April 17th, 2020; nearing the two million confirmed cases globally, and more than 7500 deaths (WHO, 2020), the sanitary crisis has deeply impacted health care systems in many countries. Currently, Chile is fifth in the list of number of confirmed cases in the Americas (WHO, 2020), where confirmed cases surpass the 8000 mark (MINSAL 2020). In light of this information; proper handling of this case by the Chilean healthcare system was missing. With the lack of training of emergency room personnel, the victim was exposed to SARS-CoV 2 an unnecessary time lapse of about 5 hours. In the end the case remained undiagnosed, and the victim decided to go home.

This case reminds us of the importance of proper training on identification of medically important arthropods by health professionals; especially during stressful times like the ones we are living now.

Correctly identifying the spider could have changed the situation in various ways: discarding a diagnosis of a deadly bite by a recluse spider (*Loxosceles* sp.) or a real widow (*Latrodectus* sp.), indicating a proper symptomatic treatment or rest knowing the victim has steatodism and avoiding having a patient waiting for a long time; exposed in the middle of a pandemic.

Acquiring knowledge about arthropods in medical settings remains of vital importance since it may impact directly on the speed of diagnosis and thus avoid collapse in emergency systems.

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