

## Necrotising Araneism of the Neck in Two Malagasy Children

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### Abstract

**Objective:** To report Clinical manifestation of necrotizing dermohypodermatitis evoking a loxoscélisme and its management from two cases of araneism in children observed in Mahajanga hospital.

**Observation:** An 18-month-old child with no medical history was seen for a necrotizing neck lesion. It was an ulcerated skin lesion of the neck which would have started with a lateral cervical inflammatory cup rapidly extensive for a week before this consultation. There was no biological trouble. Parents reported a spider bite before the lesion appeared. Local care with surgical excision of necrotic skin lesions allowed healing in 7 weeks.

One month later, a 24-month-old boy from the same region presented an inflammatory cervical skin lesion, necrotic in places, evolving for 5 days before this consultation. This child was tired and dehydrated but he was cognizant. He had no particular history. There was no infectious gateway. Brown spiders are present in their homes according to the parents. After resuscitation measures, local care and surgical excision of necrotic areas, a good scarring of the wound was observed.

**Conclusion:** The bite of spiders causes extensive skin necrosis under the effect of the venom injected into the skin. Extensive substance loss can result especially in children, whether or not associated with signs of systemic neurotoxicity. The management of araneism is multidisciplinary, but fumigation of homes could be a means of prevention.

**Keywords:** Envenomation; Spider Bite; Skin Necrosis

### Introduction

Araneism is the clinical state induced by a spider bite. It is an accident which causes a human injury capable of becoming a poisoning accident depending on the biting spider species. Few species of spiders bite humans, and their venoms are harmless in about 98% of cases [1]. Two clinical forms of araneism have been defined: a neurotoxic araneism syndrome induced by the spider bite of the genus "*Latrodectus*" and of the genus "*Atrax*" and a necrotizing araneism syndrome induced by the genus "*Loxosceles*". The south of France has been considered an endemic area for loxoscelism [2], while spider bites are considered to be a public health problem in Brazil with 20,000 cases per year.

Unlike snake and scorpion bites, spider bites are almost always mild with still around 15 deaths per year [3]. Several species of spiders are present in Madagascar, most of which have not yet been identified. Clinical manifestations of latrodectism have been noted [4]

while few authors have reported skin manifestations of araneism. We report two cases of necrotizing dermohypodermatitis, the clinical picture and the evolution of which are suggestive of cutaneous loxoscelisme.

**Observations**

**Case 1**

An 18-month-old girl from a rural area of the Boeny region, located in north-west of Madagascar, was brought in for a necrotic extensive skin lesion in the bilateral chin area that had been progressing for a week before the consultation. She had no specific history and did not go to another health facility. The child was tired for three days but she didn't have a fever. She had neither trismus nor dysphagia. She was not in shock. The clinical examination found an ulcerated and painful lesion of the neck which would have started a week earlier with a rapidly extensive lateral cervical inflammatory cup. No medical treatment had been initiated since the appearance of this lesion. This lesion affected the entire cervical region right through, very limited, with inflammatory edges. The center was covered with a necrotic skin patch with an oozing background (Figure 1). Furthermore, the ENT examination did not find any potential infectious entry door. The nutritional status of the child was satisfactory. The interrogation found no medication taken. But a notion of brown spider bite about 1cm in diameter (Figure 2) was reported in this child, a week before the consultation. There was no biological inflammatory syndrome or signs of anemia. The outcome was favorable in 7 weeks on probabilistic antibiotic therapy, such as Amoxicillin at 50 mg/kg/day, associated with surgical excision of necrotic skin lesions and scarring directed on the neck brace.



*Figure 1: Central cervical skin necrosis within a week of the bite.*



*Figure 2: Spider of the genus Loxoscele, photo taken in the study area.*

### Case 2

One month later, a 24 month old boy from the same region was brought in for a painful cervical skin lesion, evolving 5 days ago. The child presented significant asthenia, signs of dehydration with joint pain, also evolving for 5 days without medical care. On admission, there was no disturbance of consciousness, the other vital parameters were kept. The clinical examination found an inflammatory, irregular cupboard with central necrotic and ecchymotic areas, associated with skin necrosis involving the upper edge of the lesion, located at the level of the left cervical lateral region extending over the nape (Figure 3).



**Figure 2:** Cervical inflammatory cupboard with unbridled necrotic areas, five days after the bite.

This wound was not infected, there was no regional gateway. The child was not dyspneic and the nutritional status of the child was satisfactory at entry. The hemogram was normal and the C - reactive protein value was 5 mg/ml. The neurological examination was normal. The parents had noticed a spider bite in the child, and confirmed the existence of a brown loxoscele-type spider (on the basis of the photo) in the house. No medication was taken before the emergence of the wound. The general condition improved after taking care of the dehydration of the child in the paediatric intensive care. Antibiotic therapy based on Amoxicillin at a dose of 50 mg/Kg/day, combined with surgical excision of the necrotic areas led to a good evolution of the wound at two weeks, despite loss of sight of the child from the third week of control.

### Discussion

Skin necrosis due to spider bites rarely affects humans. Spiders only attack when they feel threatened or if they find themselves trapped between the skin and an item of clothing. These types of araneism correspond to the bites of spiders of the genus *Loxoscele* [5]. These spiders are particularly present on the American continent, around the Mediterranean, in the south of Europe [6] and in tropical zones [5,7] like Madagascar, traveling with the transport of goods around the world. The most reported cases of necrotizing araneism concern mostly adults, while infantile forms are rare [6]. We report two infantile cases, which may correspond to the gesturing character of the child at certain ages, in a population which is used to playing on the ground, thus achieving conditions of spider bites. The diagnosis of spider bite is most often only suspected.

The diagnosis of certainty is based on the identification of the spider which is rarely captured [6]. When faced with sudden onset skin necrosis, the diagnosis of a spider bite should be a diagnosis of elimination [2,8]. It is imperative to eliminate other causes of skin necrosis. In our context, these are skin infections, noma, and especially odontogenic cervical cellulite. Our patients had no particular history, little inflammatory syndrome or dental caries, the nutritional state was satisfactory.

The diagnosis of necrotizing araneism arises by clinical and epidemiological arguments [9]. The family's description of the spider corresponded to a *loxoscele* a cosmopolitan spider responsible for necrotizing skin bite in humans [5]. This suspicion was reinforced by the consecutive occurrence of the same symptoms in two children from the same region.

The pain felt from a spider bite ranges from the often unheard pinprick, to the extremely painful wasp sting. These are localized pains, which tend to spread locally, lasting on average 5 to 60 minutes. They sometimes appear late and of low intensity [1]. This poverty of the initial symptomatology leads to a wandering diagnosis. In our patients, a delay in consultation was noted ranging from 5 days to a week. Necrotizing araneism is generally not accompanied by signs of systemic involvement [5]. However, signs of renal failure, hemolysis and impaired consciousness have been reported, but are not life-threatening if management is early [3,6]. The unpredictability of these signs justifies monitoring these patients in the intensive care unit.

Clinically, the localization of spider bites in humans was mainly reported on the limbs or torso [5-7,9]. We report two cases of cervical localization in children, living in dwellings suitable for the life of spiders (thatched roof or dried leaves). The skin lesions begin with itching which develops into a characteristic rosette-shaped lesion, the center of which is blue thrombosed, surrounded by an ischemia zone limited by a peripheral erythematous zone [10]. These lesions can heal spontaneously but in some cases, they develop into an extensive necrotizing ulcer of variable size. Skin necrosis is due to local lysis of red blood cells by the venom containing sphingomyelinase and protein neurotoxins, causing local thrombosis. This venom leads to the formation of a crust, nausea, fever and headache [10]. This type of necrosis has been found in our patients after a week of evolution. Skin recovery is rapid for small lesions, but in our childhood cases, the lesion was extensive, requiring a longer duration of healing.

The use of anti-venom serums in the treatment of necrotizing araneism is controversial. They limit the loss of skin substance only if administered 4 to 12 hours after the bite [11]. In the absence of specific anti-venom, as in our context, the proposed treatment is symptomatic (Dapsone, antihistamines, colchicine, corticoids, hyperbaric oxygen therapy) associated with local debridement with directed scarring or skin grafts [10]. Antibiotic therapy is discussed. In our context, it was rather used to avoid secondary infections. Good healing in these children was observed with symptomatic and local treatment. Regular follow-up and good cooperation from parents are necessary to ensure optimal healing.

### Conclusion

Araneism is a rare cause of skin necrosis that should not be overlooked. The diagnosis of a spider bite is a diagnosis of elimination. It is strongly evoked in front of the absence of infectious gateway, the clinical aspect of centrifugal cutaneous necrosis and the presence of spider in the area. The forms associated with systemic involvement can be life-threatening, so that management involves a multidisciplinary team. Knowledge of the clinical manifestations by the population and the nursing staff, the presence of a nearby poison control center are useful conditions for the rapid management of araneisms. Kicking spiders out of habitats by fumigation could be one way to prevent spider bites.

### Conflict of Interest

We declared that there was no conflict of interest in this study.

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