

Case Report

# Cutaneous loxoscelism with severe angioedema in a child – A rare case report

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## ABSTRACT

Among insects, spider bite can cause localized edema of the face, eyelids and can precipitate angioedema. Common spider species that cause envenomation in our country are *Loxosceles rufescens* (brown recluse spider), *Poecilotheria metallica*, and *Latrodectus geometricus*. A 10-year-old girl presented with the complaints of massive swelling of face for 1 day and gave a history of crawling sensation during sleep then noticed a brown spider sitting on her upper lip. On examination, her blood pressure was found to be in a higher range (160/100 mmHg). Local examination showed swelling and erythema of the upper lip, both eyelids, and periorbital area. The bite mark was seen as a 1 × 1 cm serohemorrhagic crusting in the middle of the upper lip. She showed rapid improvement with systemic corticosteroids. We highlight this case for creating awareness about the increased risk in the pediatric population and the importance of vigilant monitoring for systemic toxicity during initial periods of spider envenomation.

**Keywords:** Loxoscelism, Spider bite, Angioedema, Bite mark

## INTRODUCTION

Angioedema is localized subcutaneous or submucosal swelling, due to extravasated fluid into the interstitial tissues. Allergic angioedema, also known as histamine-mediated angioedema, is the most common variant seen in children.<sup>[1]</sup> Food allergies, insect bites or stings, and drugs are important triggers for allergic angioedema.<sup>[2]</sup> Among insects, spider bites can induce localized edema of the face, eyelids and can precipitate angioedema.<sup>[3]</sup> Spider bite is a common health hazard reported in many parts of North America, Australia, and Europe. Commonly seen spiders are of the brown variety, rarely black widow spider envenomation can also be seen. Clinical features caused by brown spider envenomation are called as loxoscelism.<sup>[4]</sup> Brown spider bite predominantly causes local inflammation progressing to dermonecrotic lesions. In children, severe complications such as hemolysis, acute kidney injury, massive angioedema, and death have been reported.<sup>[5]</sup> Very few cases of spider bites producing severe angioedema have been reported from India. Here, we are presenting a unique case of severe facial angioedema in a 10-year-old girl with a brown spider bite.

## CASE REPORT

A 10-year-old girl with an unremarkable history presented with the complaints of massive swelling of lips and face for

1 day. She gave a history of feeling a crawling sensation during sleep and then noticed a brown spider sitting on her upper lip. Subsequently, she started to have painful swelling of the lip, which progressed to the face, including the periorbital area. She did not have any breathing difficulty or swelling of the tongue, lower lip, or genitalia. She did not have a history of fever, food allergy, and recent intake of any medication. There was no history of abdominal pain, hematuria, reduced urine output, or breathlessness.

On examination, she was obese (BMI – 28.76), irritable, and afebrile, and her blood pressure was found to be in a higher range (160/100 mmHg). Local examination showed swelling and erythema of the upper lip, both eyelids, and periorbital area. [Figure 1] resulting in complete closure of both eyes. Severe lip edema caused difficulty in closing the mouth and hampered speaking. The bite mark was seen as a 1 × 1 cm serohemorrhagic crusting in the middle of the upper lip. Her lymph nodes were not palpable and other systemic examination was normal. Investigations showed elevated leukocyte count – 19,280/microliter, CRP – 48 mg/L, and other routine investigations such as hemoglobin, liver function tests, renal function tests, and urine analysis were essentially normal. X-ray of the neck revealed an unobstructed airway. Ultrasound abdomen showed Grade I

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hepatosteatorrhea. Due to lack of facility, a direct antiglobulin test and entomological study of the spider were not done. Based on the reliable, acute history with a spider seen in the vicinity during the event along with corroborative clinical findings, we had a presumptive diagnosis of cutaneous loxoscelism. The probable type of spider was identified by the patient when we showed several similar looking photographs from internet (Arachnipedia Wiki). Other differentials considered were angioneurotic edema secondary to infections/allergy, cellulitis, and other soft-tissue infections. She was commenced on intravenous hydrocortisone, pheniramine maleate, and other supportive measures for the management of angioedema. The patient had received one dose of intramuscular adrenaline from the referral hospital; hence, further doses were not considered. She was kept under close monitoring for 3 days. There were no laboratory features of hemolysis, acute kidney injury, or other organ dysfunction. She showed rapid improvement; hence, intravenous hydrocortisone was tapered and she was put on oral prednisolone. The patient was noted to have elevated blood pressure during the hospital stay, but no apparent etiology could be found; She was discharged on oral antihypertensive (Amlodipine) with plans to follow up in the pediatric outpatient department for hypertension. She was discharged on the 6<sup>th</sup> day of admission without any complications.

## DISCUSSION

Common spider species that cause envenomation in our country are *Loxosceles rufescens* (brown recluse spider), *Poecilotheria metallica*, and *Latrodectus geometricus* (brown widow spider).<sup>[6]</sup> *Loxosceles* species are generally seen in summer months, especially during nighttime, and it bites extremities if crushed inadvertently. The constituents of the venom are collagenase, peptidase, hyaluronidase, and sphingomyelinase D enzymes.<sup>[7]</sup> These enzymes precipitate necrotic loxoscelism, hemolysis, and acute renal failure. A spider bite can present as cutaneous loxoscelism with painful violaceous, pale lesion with surrounding erythema later progressing to necrotic eschar in 7–10 days. Systemic loxoscelism includes hemolysis, disseminated intravascular coagulation, rhabdomyolysis, and acute kidney injury, along with skin findings that usually occur in 96 h following envenomation. These systemic symptoms can be very severe in children.<sup>[8]</sup> Along with supportive management, other treatment modalities include systemic glucocorticoids, antibiotics for local infections, plasma exchange, and rarely hyperbaric oxygen therapy. Frequent monitoring for hemolysis, renal injury, capillary leak syndrome, and organ dysfunction is needed for admitted pediatric patients.<sup>[9]</sup> To the best of our knowledge, the index patient is a rare pediatric presentation of spider bite triggered severe angioedema without systemic complications, reported from India. We



**Figure 1:** Swelling and erythema of the upper lip, both eyelids, and periorbital area resulting in complete closure of both eyes. The bite mark was seen as a 1 × 1 cm serohemorrhagic crusting in the middle of the upper lip.

also highlight this case for creating awareness about the increased risk in the pediatric population and the importance of vigilant monitoring for systemic toxicity during initial periods of spider envenomation.

## CONCLUSION

Loxoscelism is the constellation of clinical features of spider envenomation. Spider bite is one of the rare causes of cutaneous angioedema in children. Meticulous history taking and clinical examination can lead to the diagnosis of angioedema as one of the features of loxoscelism. Early diagnosis, definitive supportive management of localized angioedema and judicious monitoring for systemic features can prevent fatal complications.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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