Why "traditional" measures can be dangerous after viper bites

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Objective

Requests to the Poisons Information Centre (PIC) Erfurt regarding bites of the European viper (*Vipera berus*) have become common in recent years. Nonetheless, some people do not seem to know which venomous snakes are native to Germany or what to do in a case of snakebite. Unfortunately, the still widespread notion of "sucking out the poison" including the sale of "snake kits" with pumps for this application makes people believe that these measures are advisable.

We report on two patients who developed pronounced symptoms after they tried to suck the venom from the bite wound.

Figure 1: *Vipera berus* - black variety (picture kindly provided by Dennis Regul)

Case 1

A 47-year-old male was bitten in both hands by a snake he found in his garden. After attempting to suck out the venom he developed pronounced hypotension, nausea, local swelling of the hands, and a massive swelling of the tongue with obstruction of the whole oral cavity, but no dyspnoea.

Application of glucocorticoids, antihistamines, and adrenalin by the emergency medical service had no apparent effect. He was taken to hospital, where one vial of Biomed Viper Venom Antitoxin was applied.

Most of his local symptoms including the swelling of the tongue resolved within two hours after antivenom administration, only hypotension persisted for some hours, and the hands remained swollen for another two days.

His laboratory findings showed a minor rise in INR and lactate level, metabolic acidosis, and hypokalaemia, that were all treated symptomatically.

Case 2

A 41-year-old female was bitten in her hand and developed pronounced hypotension, as well as a massive swelling of the hand and tongue. Despite administration of glucocorticoids and antihistamines, the swelling of tongue and arm progressed even further, and antivenom was obtained. However, the patient declined treatment with antivenom and insisted on symptomatic measures. Two days after the bite, the arm was still swollen to above the elbow, but the swelling of the tongue had decreased spontaneously. Laboratory findings were not reported.

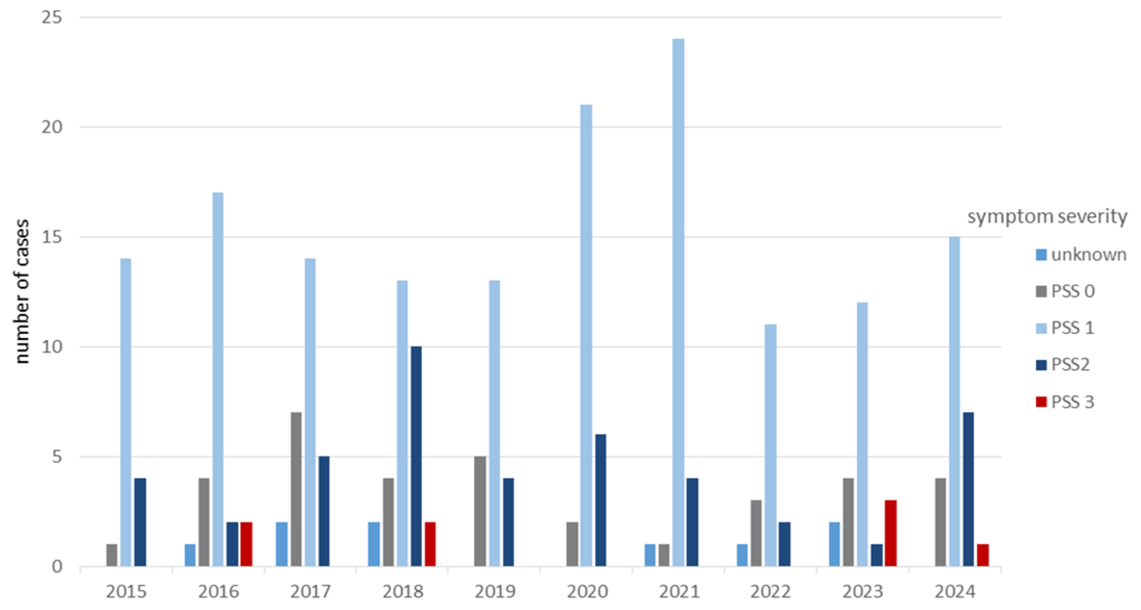
It was only later communicated, that the patient had tried to suck the venom from the wound.

Discussion

Allergic reactions such as angioedema and anaphylaxis can occur after viper bites. In the literature, these reactions were often effectively managed with corticoids or antihistamines. [1, 2]

In about 80 % of viper bites reported to the PIC Erfurt from 2015 to 2024, patients developed no (PSS 0) to only mild symptoms (PSS 1). Nonetheless, cases with moderate (PSS 2) and severe (PSS 3) symptoms occur regularly. (Figure 2) Of all 207 symptomatic patients observed in the last ten years, two had an anaphylactic reaction, five showed a swelling of the tongue, and another five had swelling in the facial area.

Figure 2: *Vipera berus* cases reported to the PIC Erfurt (2015 to 2024)



Local swelling at the bite site is a direct effect of tissue-damaging (cytotoxic) components of the venom. [3]

In case 1, antivenom could effectively alleviate symptoms when standard measures were ineffective. In case 2, where antivenom was declined by the patient, symptoms persisted for several days, despite antiallergic treatment. Therefore, we assume that the swelling of the tongue in both reported cases might rather be caused directly by exposure of the venom to the oral mucosa, instead of being an allergic reaction.

Conclusion

These cases illustrate, how dangerous it can be, to blindly apply "traditional" actions. Although snake bites are relatively rare in Germany, there is need to enhance the general public's knowledge about snakes and snakebite management. It should also be emphasized, that antivenom can effectively reduce potentially life-threatening symptoms, and should be administered when other measures are ineffective.

References

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