

The adder strikes back – severe symptoms in a dog after his fight with the European viper (*Vipera berus*)

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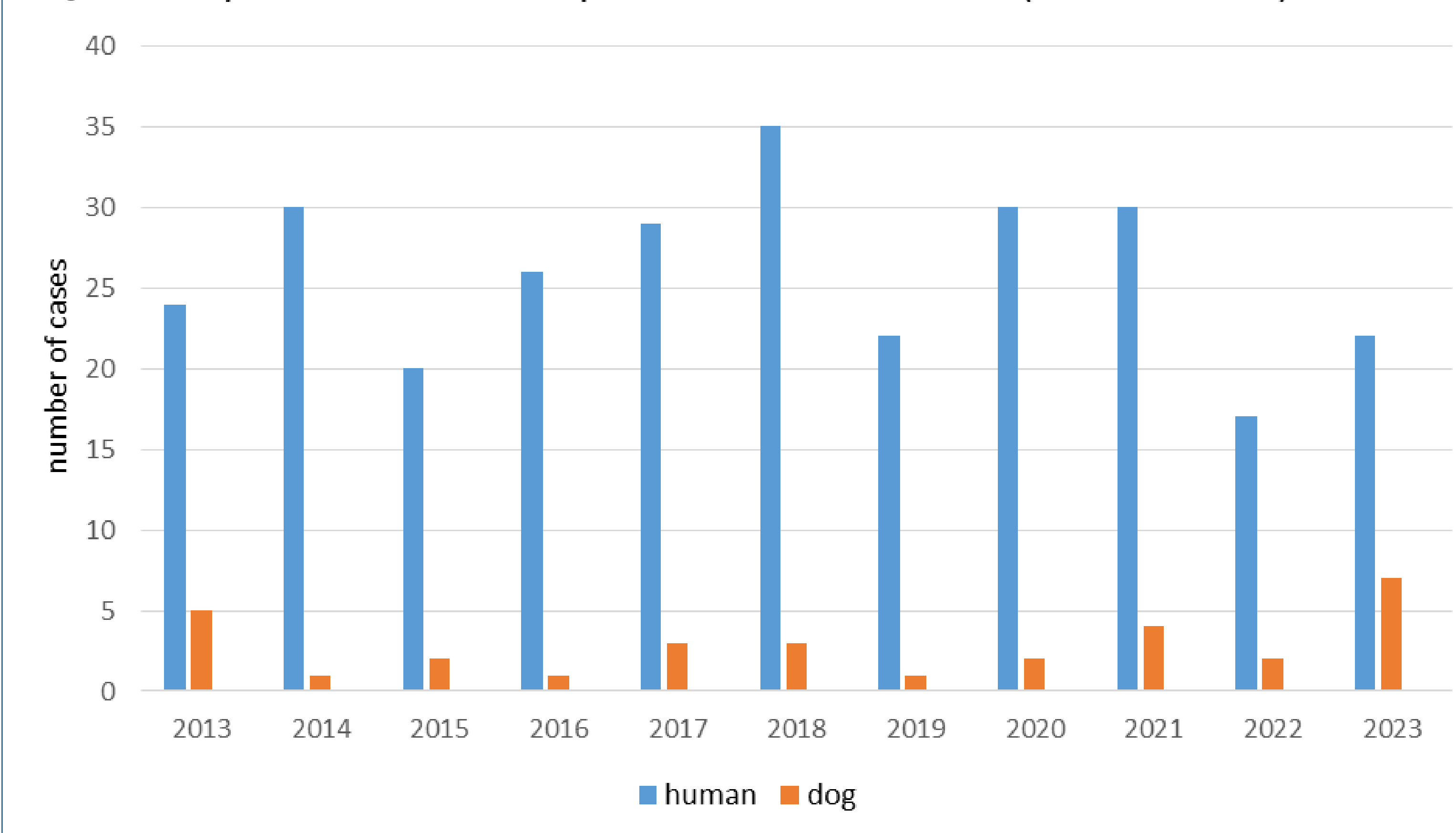
Objective

The European viper (*Vipera berus*) is the only poisonous snake native to the middle, eastern and northern part of Germany - the main area of responsibility of the Poisons Information Centre (PIC) Erfurt.

Enquiries regarding adder bites are not common but occur from time to time, especially during the warmer spring and summer months. However, the incidence of animal poisonings by *Vipera berus* is comparatively low, with only about one tenth of all adder envenomation cases reported to our PIC, and all bitten animals were dogs. In these cases, cardiovascular symptoms are rarely seen, and antivenom treatment is usually not necessary.

We report a case of a dog that required antivenom after developing severe symptoms.

Figure 1: *Vipera berus* cases reported to the PIC Erfurt (2013 to 2023)



Case Report

13-year-old Hunting Terrier “Faxe” was bitten in his left armpit during a fight with an adder he encountered in the local woods, and rapidly developed severe symptoms. Approximately one hour after the bite he showed collapse, panting, and the leg was massively swollen and he was in great pain.

His owner took him to the local vet, where ventricular tachycardia of over 200 beats per minute was detected. Despite symptomatic treatment with IV fluids, corticoids (prednisolone), antibiotics (amoxicillin/clavulanic acid), and metamizole for pain relief, his general condition deteriorated further.

Therefore, antivenom was required but was unfortunately not readily available. It could finally be obtained about four hours after the bite at a nearby hospital.

One vial of antivenom (Viper Venom Antitoxin, SIS Biomed, Warsaw, Poland) was then administered intravenously. Soon afterwards, his condition improved significantly and he could already spend the night at home. IV analgesics were continued, and the swollen leg was cooled with an ice pack.

Tachycardia resolved within 24 hours and local swelling decreased within the next three to four days. On the third day, “Faxe” was able to walk and use his leg again, and made a full recovery within six days. Blood tests were not taken.

Discussion

Dogs bitten by the European viper mainly develop local symptoms, like oedema and pain. According to a recent study, cardiac arrhythmias including ventricular tachycardia are also common, but usually resolve without treatment within one to two days. (1)

Most dogs with *Vipera berus* envenomation reported to our PIC showed bites to the head and face area. They hence displayed mainly swelling of the snout and lips, and one dog showed difficulty in breathing due to extensive swelling. Additionally, in about one third of the cases the dogs became lethargic. Pronounced cardiovascular symptoms were not reported in these dogs.

“Faxe” was the only dog that developed severe tachycardia after a bite in his armpit. It therefore seems possible that the site of the bite - closer to the torso - contributed to symptom severity, as well as the fighting context. In this case, tachycardia resolved after antivenom treatment. It remains unclear, whether antivenom caused this effect, or whether tachycardia would have resolved anyway. However, antivenom treatment was certainly beneficial in this case with regard to his general condition - especially for an older dog.



Figure 2: Hunting Terrier “Faxe” (and owner Thomas) during and after the ordeal

Conclusion

Although primarily approved for human use, adder antivenom can also be used to treat *Vipera berus* envenomation of pets. As no dose for the treatment of animals is defined, usually one vial is administered.

In our case, antivenom treatment significantly reduced overall symptom severity, and the dog made a full recovery.

References

1. Harjen HJ, Bjelland AA, Harris J, Grøn TK, Anfinson KP, Moldal ER, Rørtveit R. Ambulatory electrocardiography and serum cardiac troponin I measurement in 21 dogs envenomated by the European adder (*Vipera berus*). J Vet Intern Med. 2020 Jul;34(4):1369-1378. PMID 32557821