Reviewer’s report

Title: A rare case of confirmed Ceylon krait (Bungarus ceylonicus) envenoming in Sri Lanka resulting in neuromuscular paralysis

Version: 0 Date: 17 Oct 2017

Reviewer: Anjana Silva

Reviewer’s report:

General comments

The case report titled "A rare case of confirmed Ceylon krait (Bungarus ceylonicus) envenoming in Sri Lanka resulting in neuromuscular paralysis" by Dalugama and Gawarammana describes an interesting, rare case of snake envenoming. The case is well-written.

Terminology

Both terms, 'envenoming' (UK English) and 'envenomation' (US English) have been used throughout the text. Please use either 'envenoming' or 'envenomation' and not both the terms.

The term 'deadly venomous' is erroneous and misleading. This is because death is a summative effect of all toxic effects of a snake bite plus many other factors such as the general health of the victim, bite to antivenom delay, efficacy and the effectiveness of antivenom etc. (Please read the article: Silva et. al. Dangerous snakes, deadly snakes and medically important snakes. The journal of venomous animals and toxins including tropical diseases 2013; 19 (1): 26. Please use 'venomous' instead of 'deadly venomous'.

Specific comments

Abstract: The statement "It frequently habitats near human dwellings" is not accurate. The species is not common. It inhabits shaded home gardens and forests in the wet-zone of Sri Lanka. Please correct accordingly.

Case presentation: It would be great to have a photograph of the snake specimen involved in the bite, if available, as a figure.

Single fiber electromyography: Please state the time at which this was performed (or time from bite), and the muscle (orbicularis oculi?). It appears that the 'mean jitter' is probably less accurate to present as most probably the jitter values of the individual fibers are unlikely to have a normal distribution. Therefore please state the Median jitter, jitter range and the Inter Quartile Range of the jitter. Also, please state the number of individual fibers sampled. Alternatively, the authors can include a scatter plot comparing the jitter values of the sampled fibers on the first recording
(while neurotoxicity is still there) and the recording after two weeks. What is the reference upper normal limit of the jitter you have used? Please state.

Figure 1: please use a better quality scan of the RNS trace.

Please include any photos of the patient with neurological signs.

5th paragraph of the case presentation: "(which the only available antivenom available at the moment in Sri Lanka)" should be corrected as "(which is the only available antivenom at the moment in Sri Lanka)"

Discussion: Last paragraph - The authors have raised the point that the Indian polyvalent antivenom is ineffective and probably not efficacious for Ceylon krait envenoming (because the Indian antivenom was not raised against Ceylon krait). Whilst this may be true, the authors have raised the above argument based on the fact that the patient's neurotoxicity progressed despite early antivenom treatment. Rather than a problem with the antivenom, such effect is most likely be due to the pre-synaptic neurotoxins in the Ceylon krait venom which start damaging the motor nerve terminal irreversibly before the antivenom was given. Once the neurotoxins start the damage to motor nerve terminal, the process is irreversible and heals with the natural recovery of the motor nerve terminal by 3 to 5 days, as experimentally shown with the beta bungarotoxin (major pre synaptic neurotoxin of the many-banded krait). This means that even if the antivenom is fully efficacious (i.e. the antivenom has enough anti-Ceylon krait antibodies to neutralize the neurotoxins), still there wouldn't be a clinical effectiveness (no measurable clinical improvement). Exactly similar observation was made previously where the Indian krait bites resulted similar response to Indian Polyvalent antivenom, despite the circulating venom antigens were fully neutralized by antivenom promptly. It would be worthwhile discussing the above in the discussion.

References

Reference 6: Please format the first author's name accurately (Surname first, then the initials).

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