Reviewer's report

Title: Severe Viperidae envenomation complicated by shock, acute kidney injury, and gangrene presenting late at the emergency department: a case report

Version: 0 Date: 31 Jan 2019

Reviewer: Rajendra Raman

Reviewer's report:

This is a very interesting case report. It highlights the fatal consequences of delayed presentation to healthcare facilities for a potentially treatable disease, as well as the disproportionate burden of snakebite suffered by disadvantaged socioeconomic groups. The report is well-written, and the case is highly relevant to the practice of emergency medicine.

I have two concerns related to the content of the case report, one minor and one major.

My minor concern relates to the use of the term "gas gangrene" in the Abstract (p2, lines 16/17). I note that in the remainder of the report the term "gangrene" is used, not "gas gangrene". The diagnosis of "gas gangrene" (also known as clostridial myonecrosis) would require at least a description of gas in the affected tissues, if not confirmation of the presence of known gas-forming organisms. In the absence of these findings, I would suggest using only the term "gangrene" in the Abstract.

My major concern relates to the diagnosis of anaphylaxis. It is clear that this patient was profoundly shocked, as evidenced by hypotension, tachycardia, anuria and ultimately cardiac arrest. However, these findings could easily be explained by the combination of toxic, hypovolaemic and septic shock in the context of envenomation, gangrene and compartment syndrome, without invoking the diagnosis of anaphylaxis. The authors cite a case of snake-bite-induced anaphylaxis (reference [8], de Medeiros et al. 2008). However, that patient presented within minutes of the bite, reported respiratory symptoms (dyspnoea and cough) and pruritus, and showed a generalised urticarial rash on examination. The clinical suspicion of anaphylaxis was further strengthened in that case by demonstration of IgE against Bothrops venom in the patient's serum. I understand that IgE immunoassays may not be available at the authors' institution; however, I feel that at least some clinical features of anaphylaxis other than shock (e.g. rapid onset, respiratory involvement, urticaria) should be present in order to make this diagnosis. Did the authors note any signs of anaphylaxis other than shock? If not, I would suggest that they remove references to anaphylaxis from their report - I feel that even without anaphylaxis, they still have a very interesting case to present.
The remainder of my comments relate to terminology, spelling and references:

In the Title, replace "viperidae" with either "Viperidae" (capitalised) or "viperid".

P2 Line 9, replace "Echis occellatus viper" with "Echis ocellatus viper" (change to spelling of "ocellatus", italicise "Echis ocellatus", and un-italicise "viper")

P3 Line 7/8, replace "metalloproteins" with "metalloproteinases" for consistency with the rest of the report

P3 Line 11, replace "vipiridae" with either "Viperidae" or "viperid" (note spelling and capitalisation)

P3 Line 25/26, replace "Echis occellatus viper" with "Echis ocellatus viper" (change to spelling of "ocellatus", italicise "Echis ocellatus", and un-italicise "viper")

P3 Line 42/43, remove "fast" (this is already implied by the rate of 138)

P3 Line 46/47 "limp" should read "limb"

P4 Line 10 change "thrombopenia" to "thrombocytopaenia" for consistency

P4 Line 17/18 "haemodynamic unstable" should read "haemodynamically unstable"

P4 Line 19 "thrombocytopenia" should ready "thrombocytopaenia" for consistency

P4 Line 21 "mmanagement" should read "management"

P4 line 22/23 "polyvalent anti-venom serum, transfusion of three units" should read "polyvalent anti-venom serum and transfusion of three units"

P4 Line 35/36 "diaphoretic and diuresis 0,35ml/kg/h" should read "diaphoretic and had a diuresis of 0,35ml/kg/h"

P4 Line 39/40 "Glasgow coma score" should read "Glasgow Coma Scale" (note capitals)

P4 Line 53/54 "viperidae" should read either "Viperidae" (capitalised) or "viperid"

P4 Line 59/60 "resource-constraint environment" should read "resource-constrained environment"

P5 Line 2 "because its often" should read "because it is often"

P5 Lines 3-7 could be changed to: "In sub-Saharan Africa, recent estimates suggest that about one million bites by venomous snakes occur with 100,000 to 500,000 cases of envenomation and up to 30,000 deaths per year". (This clarifies that all three statistics refer to annual figures.)
P5 Lines 18/19 change "echymoses" to "ecchymoses"

P5 Lines 20/21, for consistency, change "hemorrhage" to "haemorrhage", "hematemesis" to "haematemesis", "malena" to "melaena" and "hematuria" to "haematuria"

P5 Line 22 change "species" to "families".

P5 Line 44/45. I am not sure of the relevance of reference [12] (Nagahiro et al. 2004). This paper is a retrospective review of intermittent pneumatic compression for preventing pulmonary embolism in post-operative patients. As far as I can see this paper does not discuss coagulopathy relevant to snake bite, does not mention DIC, and only mentions thrombocytopenia in the context of heparin therapy. Was this reference included accidentally?

P5 Line 44/45 change "thrombopenia" to "thrombocytopenia" for consistency

P5 Line 56/57 change "ischemic" to "ischaemic"

P5 Line 58/59 change "hemorragins" to "haemorrhagins"

P5 Line 60/61 change "anemia" to "anaemia"

P6 Line 3/4 change "delimma" to "dilemma"

P6 Line 21 change "poor prognostic factor" to "poor prognostic factors"

P6 Line 23 change "patients" to "patient"

P6 Line 40 change "re-enforce" to "reinforce"

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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