Author’s response to reviews

Title: A case report of Dengue Haemorrhagic fever complicated with psoas haematoma requiring blood transfusion

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Response to reviewers

The Editor
BMC Infectious disease

We the authors have done our best to rectify the changes pointed out by reviewers to make the manuscript better with all the available data. Below is a letter with answers to the questions reviewers have asked. The changes have been done in the manuscript as well.

Thanking You

Thushara Matthias

Reviewer reports:

Fernanda Andrade Orsi (Reviewer 1): The manuscript consists of a case-report of a psoas hematoma associated with Dengue fever. Although the case reported is interesting, I have some questions with regard to the clinical details of the case, as some information is missing.

1) In background.

I think it is important to give more a more detailed overview of the bleeding complications associated with Dengue, such as the physiopathology of bleedings, most common sites of bleeding, changes in laboratory test, management of the bleeding complications.

Done. Details about other bleeding complications it has been added to the introduction. Pathogenesis has been added to the discussion I think as this is a case report about a specific
complication of dengue adding details and management of other bleeding complications of
dengue are irreverent.

2)

Case presentation.

a) Demographic characteristics: Please provide information on patient’s age, the place where he
came from, where was his consultation (city, country etc)

Done

b) Clinical symptoms at presentation: How many days elapso since the first symptoms and the
hospitalization? When the patient was hospitalized, what was the presumed diagnosis? How long
after hospitalization was Dengue Hemorrhagic Fever diagnosed? It would be helpful if the
authors provided a figure containing the timeline of the symptoms, signs and laboratory tests,
from the first symptoms until the hospital discharge.

The above details have been added. Since dengue fever is very common in Sri Lanka, the
working diagnosis on admission was dengue fever. The patient presented with three days fever.

c) Characteristics of the bleeding episode. Dengue fever mainly leads to muco-cutaneous
bleeding, which are bleeding associated with impaired primary hemostasis. Muscular and
intraarticular bleedings, which are due to impairments in secondary hemostasis, are unfrequent.
Please provide the results of aTTP, PT and fibrinogen pre and after the bleeding episode.

Added

d) Why did the patient received a packed of red blood cells? Was him anemic? Please explain the
criteria for transfusion in this setting.

Yes patient received a pack of blood as the PCV dropped. Platelet transfusions is rarely done in
dengue. There are very clear indications for platelet transfusions and intramuscular haematoma
isn’t one of them.

e) In general, psoas hematoma takes a long time to recover. Please provide information on the
progression of the hematoma. When the patient was discharged, was the hematoma resolved?

No haematoma was only fully resolved one month after discharge .Details now added.

f) What was the virus serotype? Please provide information on the characteristics of Dengue
outbrake at the time when this case happened.

DENV-2
3) Discussion

Please discuss the possible reasons for the observed bleeding complication in this patient.

Added

Minors:

Please write out the following initials: PCV, HDU, CRP

They are already written in the list of abbreviations.

Stephen J Thomas (Reviewer 2): General:

Interesting atypical manifestation of a dengue virus infection. The manuscript would benefit from consistency in the use of terms dengue, severe dengue, and dengue hemorrhagic fever, etc. There are a few statements of fact which need to be tightened up. There is some important missing information in the case report and the discussion needs expanding.

Abstract:

"Dengue fever is a tropical infection"

Corrected.

- The manuscript needs consistency in how it refers to dengue clinical disease syndromes. The dengue viruses cause the clinical syndrome known as dengue which, depending on what classification system you apply, may be dengue fever, dengue hemorrhagic fever, or dengue shock syndrome which is the most severe category within the dengue hemorrhagic fever category.

It is now corrected to be DHF as that is what this patient had.

"formed during the critical phase"

- The manuscript would be clearer if the critical phase was described or defined.

It is now described and added.

Background:
"Expanded Dengue Syndrome (EDS)"

- The term requires a reference. I am not sure the WHO use of the term matches with the authors definition.

I have added the WHO guideline which gives this term

"minor musculoskeletal problems"

- Dengue is also referred to as "breakbone fever," I am not certain I would call the arthralgias minor.

The minor was deleted.

Case:

"A previously healthy man"

- No age and no past medical history mentioned, both of which are potentially relevant to dengue disease severity.

Now added

"the patient was started on critical phase"

- Appears to be an incomplete sentence.

Corrected

All these changes done

"initial laboratory investigations"

- Is it possible to list the normal range for these labs?

"transfused with 5ml/kg of red cells"

- Between day 7 and 8 there was a minimal drop in hgb but a significant drop in hct. The data are curious and may speak more to intravascular volume depletion versus significance of blood loss. How do the authors explain the hgb and hct kinetics?

When there is a drop in Hamoglobin it was thought due to bleeding as there was no other reason for it. The patient was tachycardic while not been febrile also supported the same. Hamoglobin change takes time to show while PCV drop is seen earlier than haemoglobin drop.
"possible secondary infection"- What appearance gave the indication of potential infection?

It is the ultrasound findings, fever and high CRP that indicated potential infection.

Discussion and Conclusions

"All these mechanisms can lead to spontaneous muscle haematomas"

"bleeding is thought to be autoimmunity"

- The authors should explore the coagulation dysfunction AND dengue literature and provide a more comprehensive description of the findings related to trends in factors and other proteins related to clot formation and destruction. For example - Clin Infect Dis. 2002 Aug 1;35(3):277-85. Epub 2002 Jul 11..

Now added to the discussion

"Figure 1 and Figure 2 Haematomas seen in the left psoas muscle"

- The US images would benefit from arrows and pointing out the specific findings.

Arrows have been added

Lucy CS Lum (Reviewer 3): The authors reported an interesting case of dengue with plasma leakage and severe spontaneous bleeding in the psoas muscle.

There are a few comments:

The dengue case classification that is used by authors is that from the expanded Dengue fever syndrome. However the terms DHF and DF were used interchangeably in this manuscript when in fact, the two syndromes, DF and DHF are supposed to be mutually exclusive. Going by the classification that is used here, this patient should have been classified as DHF with severe bleeding. If the 2009 dengue case classification is used, this patient would have been classified as dengue with plasma leakage and severe bleeding. The authors should make the correction to the title as well.

I agree and I have corrected the wording to suit the Sri Lankan classification according to the Sri Lankan guidelines and made it as DHF with severe bleeding.

The second point is the cause of bleeding - please state categorically whether there was any trauma, however minor, was involved. With that severity of thrombocytopenia and vascular fragility, even minor traumas of a few days ago may lead to life-threatening bleeds.
There was no trauma

The third point is in the treatment: The patient received blood transfusion because of signs of hypovolemia. Did he receive any platelet transfusion?

Yes patient received a pack of blood as the PCV dropped. Platelet transfusions is rarely done in dengue. There are very clear indications for platelet transfusions and intramuscular haematoma isn’t one of them.