Reviewer’s report

Title: Identical fracture patterns in combat vehicle blast injuries due to improvised explosive devices. Identical injury patterns in blast trauma

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Reviewer: Arul Ramasamy

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Major Compulsory Revisions

The authors state in their introduction that tertiary blast effects are the predominant mechanism of injury to cause fractures and contusions. They then claim that the injuries caused to these casualties are primary blast injuries. Given the nature of the injuries described, they seem to fit the pattern of injury one would expect from tertiary blast effects following an under vehicle IED explosion. Given the injuries to these casualties were isolated extremity injuries, if the primary blast effect was the major causative mechanism, why did these casualties not sustain other non-extremity injuries such as blast lung, tympanic membrane rupture or gastrointestinal injury?

Secondly, although slightly curious, I am not sure how the initial statement that this case study helps focus the search for other injuries is justified by the cases presented. Based on the mechanism of injury, one would expect lower limb fractures and spinal fractures from the severe axial loading witnessed in under vehicle explosions. This has already been described in the literature and the authors would be advised to review manuscripts on 'deck-slap' injuries. As for the radial neck fractures, that is likely to be caused by the casualties being thrown around the vehicle, or the rapid movement of the weapon at the time of the explosion.

The authors describe the thoracic spinal fractures. If the casualties were seated, one might expect lumbar spine injuries rather than thoracic spine injuries, and it would be of value if the authors could hypothesise as to why this might be the case? Secondly, although both patients were noted to have unstable spinal fractures, I would be interested to know what the rationale was for non-operative management - was this because they did not have a spinal surgery capability, or was there a conscious decision to treat the injuries non-operatively.

It may be worthwhile if the authors could shed more light on any other casualties from these incidents.

Minor Essential Revisions

Although the manuscript is reasonably well written, there are a number of grammatical errors which need correction.
Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests