Author’s response to reviews

Title: Effects of a formalized Collaboration between Plastic and Orthopedic Surgeons in severe Extremity Trauma Patients; a retrospective Study

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Author’s response to reviews: see over
Dear Editor

Thank you for your positive response to our manuscript. We appreciate the valuable input from the reviewers and have now revised the manuscript according to the reviewer’s suggestions. Please find below, and in the corresponding manuscript answers and point-by-point responses to the reviewers remarks.

We hope you will find this revised manuscript suitable for publication. It has been submitted solely to Journal of Trauma Management & Outcomes, and is not concurrently under consideration for publication in any other journal.

Pehr Sommar
MD, PhD

Reviewer 1:

Is there a change in number of complicated trauma cases during the 8-year period?

The total numbers of trauma cases was about 630/year before 2007 and 1100/year thereafter. This is a 0.75-fold increase. The total number of flaps have increased 3.5-fold. The severity of orthopedic trauma has not changed during the years.

Has the introduction of negative pressure wound affected the number of cases or methods of treatment in these injuries?

We have no data on numbers of patients treated with topical negative pressure (TNP) as some of the patients are not treated in the OR. We do sometimes use TNP as a dressing to optimize the wound bed between revisions, but in our experience TNP has rarely if ever replaced flap surgery in the acute setting with open fractures. If we achieve our future goal with early flap coverage, and only one revision, the use of TNP will further diminish in this patient cohort. A passus regarding this has been added to the manuscript.
Is there a change in the admission policy in the smaller hospitals around the university hospital?

Since 2007 all high energy trauma in Stockholm County was regionalized to Karolinska University Hospital. The other hospitals in Stockholm now see very few of these cases as the ambulances are redirected to Karolinska University Hospital, but we still get cases which were operated upon due to a closed fracture, with secondary skin necrosis or infection which demand a free or pedicled flap. The regional hospitals in; Nyköping, Västerås, Eskilstuna, Falun almost always refer their cases with open fractures to Karolinska University Hospital in the next few days after trauma. Prior to 2007 the reference policy was less strict and hence not all cases were treated at Karolinska. This has now also been described in the manuscript.

Comment on figure 1. One case (more than 200 days), the others almost the same as in the MDC group.

This is a very valid question raised by the reviewer! Our reasoning is as follows. There is no statistical significant difference in the median time to flap surgery when comparing patients treated before and after the collaboration. The median time to flap coverage of acute extremity trauma was 6 (0-51) days after the start of the collaboration, compared to 16.5 (0-220) days before the start of the collaboration. If the outlier of 220 days is withheld from analysis, and we compare the remaining 5 patients to the 25, the median is 7 days compared to 6 days. This is of course no statistical significant difference.

We have kept the outlier in the statistics section, to present a true number of patients. By using a rank-sum test, this patient does not change the calculations assuming that time to surgery of this patient is longer than 51 days, which is the longest waiting time in the after-collaboration group. In this way the 220 days could be 51-220 days and still have the same impact on statistics. The median would also still be 16.5 days if the outlier would have been operated upon 26 days after trauma. We have chosen to use a non-parametric test, and to use medians rather than means to reduce the effect of this outlier.

We have a feeling, that the time to flap surgery have become shorter due to earlier presentation to plastic surgeons, but as pointed out by the reviewers we cannot describe this feeling as a statistical tendency, and has consequently not been presented as such out in the manuscript.

Reviewer 2:

At least figure 1 should benefit from removal of the outlier patient and adjustment of the scale to be able to better distinguish cases from each other, especially in the group after intervention.

We have kept the outlier in the statistics section, to present a true number of patients. By using a rank-sum test, this patient does not change the calculations assuming that time to surgery of this patient is longer than 51 days, which is the longest waiting time in the after-collaboration group. In this way the 220 days could be 51-220 days and still have the same impact on statistics. The median would also still be
16.5 days if the outlier would have been operated upon 26 days after trauma. We have chosen to use a non-parametric test, and to use medians rather than means to reduce the effect of this outlier.

To better be able to distinguish cases from each other in Figure 1, we have now changed the graphical layout.

It is better not to comment in statistical terms “seems as, tendencies” at all, but focus on the increased number of flaps and increased awareness of the possibility of plastic surgical help in the trauma situation.

This is a valid point from the reviewer. We have now removed these statistical terms from the discussion. It is correctly pointed out by the reviewer that the main outcomes are increased number of flaps, and increased awareness amongst orthopedic colleagues. The significant reduction in hospital stay and postoperative revisions should be interpreted carefully as pointed out in the discussion part due to the small cohort.