Author’s response to reviews

Title: Abdominal wall complications following renal transplantation in adult recipients – factors associated with interventional management in one unit

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Thank you to the reviewers for their comments and the opportunity to submit a revision for consideration. I am pleased to resubmit for revision the original research article entitled “Abdominal wall complications following renal transplantation in adult recipients – factors associated with interventional management in one unit” by Ngee-Soon Lau, Nima Ahmadi and Deborah Verran, for consideration for publication in BMC Surgery.

Below is a point-by-point response to the reviewer comments and a summary of relevant changes in the manuscript.

Reviewer 1 raised the issue of overlap between clinical situations requiring operative intervention or the use of negative pressure wound therapy (NPWT) and the confounding role of infection. We recognised this early in our data collection phase and as such decided to analyse these two factors separately. Interestingly, we found that different factors were associated with operative intervention (abdominal wall collection and fascial dehiscence) versus for deployment of NPWT (diabetes, infection). Also, infection was not significantly related to the need for operative intervention (Lines 198-199 of the manuscript) which suggests that in immunosuppressed and medically complex patients, different factors are associated with the need for operative intervention or NPWT depending on the context. Further delineating the interplay between these factors in medically complex patients with significant crossover was unfortunately not possible in this analysis (due to the low numbers). However, in our opinion, we were able to describe important factors that define the way we utilise operative intervention and NPWT when managing a complex problem. As such, undertaking an intention to treat analysis was not possible based on the retrospective nature of the analysis, along with the aforementioned issues.

Concern was also raised regarding the indications for operative revision or NPWT. This has been clarified by addition of lines 148-149 and 151-152 to the manuscript. Operative intervention was required in the setting of complete fascial dehiscence, uncontrolled abdominal sepsis or collections not amenable to percutaneous drainage. NPWT was utilised for wounds that would have benefitted from healing by secondary intention due to either wound infection or dehiscence.
Reviewer 1 also noted that our NPWT interval was longer than previously reported and that this may be due to differences in how NPWT is utilised, and we agree that this is most likely the case. Our practice is to use NPWT until complete granulation and not to utilise secondary surgical closure. This has been clarified in lines 156-157 and 353-355 of the manuscript.

Reviewer 2 questioned the role of immunosuppression. Everolimus (an mTOR inhibitor) has been mentioned. The use of mTOR inhibitors, although common in the literature was not part of our local protocols during the study time period (Line 137-138). Also we did not find any significant difference in wound complications between the two immunosuppressant protocols used at our institution (Line 193, Table 1).

The issue of infection and how this was defined in our study was raised. Our patients received routine antibiotic prophylaxis (Line 130 amended), and our wound infections were diagnosed by both clinical findings (redness, tenderness, purulent discharge) and microbiological culture (Line 140-144 amended). At our institution, it was not routine to use NPWT for all infected wounds, but we found that infection was a significant factor related to use of NPWT, which may suggest our local practice is to favour NPWT when there is significant wound breakdown in the presence of infection (Line 337-340).

Reviewer 2 raised the issue of the use of a prosthesis (mesh) in the repair of fascial dehiscence after renal transplantation. It was not our practice to routinely use mesh in this setting, but it was used in two cases during this study (table 2). We only do this in the setting of fascial dehiscence without significant contamination or infection (clarified in lines 209-211).

Reviewer 3 noted inconsistency in terminology regarding patients with wound dehiscence and patients with wound complications without dehiscence. This terminology has been clarified in lines 179-180. Further, it was noted that in Table 1 and Table 3, a few units of measurement were missing. These have been added.

More detail regarding operative techniques was requested, and this has been added in the methods section at lines 127-133. We use a Rutherford-Morison incision, and closure of the skin is with either skin clips, a subcuticular suture or simple interrupted sutures.

Reviewer 3, like reviewer 2 requested more clarity in how infections and collections were diagnosed and defined. This has been clarified as outlined above in lines 127-128 and 140-144 of the manuscript. Further, reviewer 3 suggested inclusion of the strain of bacteria involved. In the
setting of immunosuppressed patients and colonisation with multi-resistant organisms, a wide variety of bacteria were found to be the causative agents in our population’s infections. This was largely heterogeneous and did not add to our primary aims of determining factors related to operative intervention or NPWT and thus was not included at this time.

Thank you for your consideration.

Kind regards,

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