

## < RESPONSE TO REVIEWERS' COMMENTS >

We appreciate your kind comments for our humble article.

Reviewer #1:

*Scientific Quality: Grade B (Very good)*

*Language Quality: Grade B (Minor language polishing)*

*Conclusion: Accept (General priority)*

*Specific Comments to Authors: 1. I would suggest that author could give more discussion on whether there are other treatment options for cases like burn injury of the transferred flap.*

→ Yes, we described other treatment options in the second paragraph of discussion section in detail, and added some more options.

*2. Authors could provide the followed-up figure for this case.*

→ Yes, we attached the followed-up figure of third postoperative day of last surgery as 'Fig. 7.'. We are afraid that this is the last clinical photo of follow-up.

Reviewer #2:

*Scientific Quality: Grade C (Good)*

*Language Quality: Grade A (Priority publishing)*

*Conclusion: Accept (General priority)*

*Specific Comments to Authors: 1. NPWT is widely used in a variety of wound treatment, and there have been a large number of clinical trials in the application of flap wounds. This paper not only expounds the principle and potential risks of NPWT treatment for flap wounds, but also lists some improvement methods of NPWT application in flap surgery, which is the focus of attention.*

→ Yes, those are the exact points we are highlighting.

*2. Thermal injury after autologous breast reconstruction is rarely reported, the previous conservative treatment methods may aggravate the degree of burns, given the previous studies of NPWT may have good treatment effect on such flap wounds, but the*

*serious consequences of the failure for other NPWT wound doctors, and also analyzed the possible causes of failure, for the improvement of NPWT in flap surgery, has a high clinical reference value.*

→ Yes, we emphasized the cautious application of NPWT on the flap wounds, and assumed that collapse of superficial perforators at the NPWT application site led to damage on the main pedicle.

*3. The article analyzes the possible causes of the secondary failure cases, and suggests that the basic experiments can be conducted for further verification, such as changing the pressure of the organization, combining clinical and basic, so as to make the content of the whole article more rich.*

→ Yes, and we agreed that further basic researches about detailed mechanism and relationship between NPWT settings and the flap survival are necessary.

*4. The description of the treatment mode and recovery of the necrotic tissue in the cases can be added, or the later return visit, can be added to make the structure more complete.*

→ Yes, negative pressure level and treatment mode of our case are described in 'case report' section, and necrotic change of adipose tissue was observed and described in the section. First, we performed daily dressing for demarcation of the necrotic tissue, and all the necrotic tissue was removed with aggressive debridement. The remnant defect was covered with bilateral advancement flap surgery. Clinical photo of the last follow-up is added as 'Fig. 7.', and no additional complications such as necrotic change were found on the later return visit.

The description of the treatment mode and recovery of the necrotic tissue of other cases is added in fifth paragraph of 'discussion' section. Complete resection of necrotic tissue preceded application of NPWT, and most of the necrotic tissue resolved within 5 days according to the previous researches.

*5. It is suggested that this heat-damaged flap wound after autologous breast reconstruction can be compared with the previously reported successful cases of flap surgery at other sites or with NPWT at the same site, and other reasons for failure may be analyzed.*

→ Yes, we compared and mentioned previously reported successful cases of free flap surgery at other sites in the third paragraph of the 'discussion' section. We also added other previously reported successful cases of NPWT application after flap surgery at wide area of breast and abdominal donor site in the fifth paragraph of the 'discussion' section. However, most of the previously reported cases about NPWT application after breast reconstructions were 'implant (prosthesis)-based' reconstructions. In addition, NPWT application after burn injury on free flap wound is rarely reported, so systematic review of the similar cases is necessary.

Three possible reasons are additionally described in fifth paragraph of 'discussion' section. Arterial insufficiency or venous congestion of the flap itself are highly unlikely because of the post operative period.