

Peer Review File

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**Reviewer A**

Here the authors in a retrospective fashion (April 2019 to March 2020), included 362 patients who underwent breast cancer surgery. Patients underwent surgery with an EC with the basic method of knot tying (control group), and an UDD was used together (trial group).

However, I have several concerns regarding the methodology of the paper. There is no clear goal in comparing such groups. It is not mentioned in the abstract or the paper, just reporting some results in a retrospective fashion. What other goals were important for the authors? OR time? safety of the procedure? Complications? Risk of breast cancer recurrence?

: We have modified our text as advised

: Page 7, line 7-11

How did these patients get selected to be part of one group vs. the other? There is a significant bias the way this was explained; just before and after a certain period of time, using one technique vs another?

Since we started using UDD for all breast cancer surgeries in October 2019, we decided to compare the groups by dividing them based on October 2019. Therefore, the patient group was selected by taking a period of 6 months before and after the start of UDD. Except for the use of UDD, the surgical environment was not different, so the comparative control group could be established based on a specific time point.

Was there any learning curve required to do this in breast surgery?

Thank you for your advice. Since there were no particular difficulties in using UDD, we determined that a learning curve was not necessary when designing this study.

In addition, there were several types of breast surgeries performed, going from breast conservation surgery to mastectomy and reconstruction; this is like comparing apples and oranges. Just because is related to the breast, these surgeries are different.

Thank you for your comment. Regarding operation time and the last day of less than 30cc of drainage for 2 consecutive days amount, subgroup analysis was done in case of BCS, mastectomy, and reconstruction. However, in the complication part, the incidence rate was very low, so there was a limit to the comparative analysis according to the surgical method. But as shown in Table 1, the distribution of surgical methods between the control and trial groups is at a similar rate, so it may be meaningful even if the entire group was compared.

In addition, some of the statical values provided by the authors are incomplete in the results section. They mentioned that there was no difference in complications, How long was the follow-up to give these conclusions? In addition, is poorly written. Thank you for your advice. Complications were identified within one month after surgery.

: We have modified our text as advised  
: Page 7, line 4

I believe there is potential to prove that new technologies are good to apply, but the way this study was conducted was very poorly designed.

### Reviewer B

The innovation of this study was not enough. The application of ultrasonic dissection device had been in practice for a long time and its clinical application was mature. The comparison with traditional surgery had been reported in many literatures.

Thank you for your comment. As you pointed out, UDD is a device that has been used for a long time. However, in Korea, UDD is not widely used in breast cancer surgery. When we started using this equipment, we experienced that the operation time was shortened and the operator's fatigue was reduced. But there are conflicting results in several studies on the use of UDD, so this study was designed to find out whether there is an objective benefit to using UDD.

### Reviewer C

This retrospective study was performed to compare short-term outcomes following breast cancer surgery with and without an ultrasonic dissection device in a single institution. The aim, methods, results, and discussion were clearly described. However, there were several concerns as follows.

Whole manuscript

1. It is not formal for "And" and "But" to be placed at the beginning of a sentence. Please have English native speakers proofread your work.

: Thank you for your advice. And the text has been revised in its entirety.

Abstract

2. Background should be short and simple. The second sentence can be deleted.

: We have modified our text as advised  
: Page 3, line 3, the second sentence was deleted.

3. Methods: Please state what was the outcomes of the current study. For example, "We compared operation time, complications, and blood loss volume between surgery with and without UDD."

: We have modified our text as advised  
: Page 3, line 8-9

4. Results: Readers will be more interested to know the comparison of complications than subgroup analysis or duration of drainage. Speculation such as "might be" is inappropriate in the results. What was meant in " $\pm$ " is unclear; i.e., mean and range, mean and standardized deviation, or median and interquartile range. Moreover,  $p=0$  is odd. It must be  $p < 0.001$ . Please modify them. For example, "In total, 306 patients were included: 142 patients with UDD and 164 patients without UDD. The operation time was significantly reduced in surgery with UDD (95.5 vs. 111.2 min,  $p < 0.001$ ). The occurrence of complications did not differ by UDD use. The blood loss volume..."

: We have modified our text as advised

: Page 3, line 11-15

#### Methods

5. Did the authors start using UDD for all breast cancer surgeries in August 2019? Did they not use UDD at all before that? Please clarify them.

: We started using UDD for all surgeries in October 2019. So We have modified our text as advised

: Page 6, line 8-12

6. Please clearly state what was the primary outcome (I guess operation time) and the secondary outcomes (e.g., complications). After the description, please state what background factors were investigated; e.g., body mass index and weight of specimen.

: We have modified our text as advised

: Page 7, line 7-11

7. Why did the authors set the threshold for drainage volume at 30 ml and two days? It can seem arbitrary, so please explain it with prior literature presented, or modify the outcome as the total volume of drainage for example.

: There are references to tat content. So we have modified our text as advised.

: Ko, E. et al. Fibrin Glue Reduces the Duration of Lymphatic Drainage after Lumpectomy and Level II or III Axillary Lymph Node Dissection for Breast Cancer: A Prospective Randomized Trial. Journal of Korean Medical Science 24, 92–96 (2009).

: Staradub, V. L. & Morrow, M. Modified radical mastectomy with knife technique. Archives of surgery (Chicago, Ill. : 1960) 137, 105–110 (2002).

: Page 6, line 21

8. Similarly, why did the authors set the threshold for blood loss volume at 50 ml? Please modify them as the total blood loss volume.

: Thank you for your advice. In our hospital, if the amount of intraoperative bleeding is too small to be measured, it is marked on the surgical record as less than 50ml. Therefore, in this study, the amount of intraoperative bleeding was analyzed with less than 50ml rather than an accurate measurement value. This is a limitation of a retrospective study, and it is additionally described in the text.

: Page 12, line 6-11

## Results

9. What was meant in " $\pm$ " is unclear; i.e., mean and range, mean and standardized deviation, or median and interquartile range. Please clarify it in the manuscript and tables.

: We have modified our text as advised

10. As I pointed out in the abstract,  $p=0$  or  $1$  is odd. It must be  $p < 0.001$  or  $= 0.999$ . Please modify them.

: We have modified our text as advised

## Discussion

11. The third paragraph: Please avoid using the term "significance" other than the context of statistical significance.

: We have modified our text as advised

: page 11, line 1

12. The fourth paragraph: A phrase "but the most important part was the AD group." and a sentence "Therefore, there is no difference in the frequency of complications, and that the operation time can be shortened can be an important part in selecting surgical instruments." does not make sense. Please clarify them.

: We have modified our text as advised

: page 11, line 5-10

13. Please more discuss the amount of drainage and blood loss volume.

: We have modified our text as advised

: Page 12, line 6-11

14. The final paragraph: How much was the additional cost of UDD in Korea? Moreover, do the authors believe that the benefits of UDD are worth the price?

: We have modified our text as advised

: page 12, line 1-3

15. I agree that the current study had a limitation of retrospective design. However, because the patient background did not differ significantly between the two groups, the difference in outcome is considered to be observing the difference in the effectiveness of the instruments. I recommend adding such an explanation.

: We have modified our text as advised

: page 12, line 4-6

## Conclusions

16. The result of the current study did not reveal "Surgical technique is constantly evolving through the use of several methods and instruments." Please delete the sentence, summarize the current result (e.g., "the UDD use group showed decreased operation time"), and state UDD to be a good option in the conclusion.

: We have modified our text as advised  
: page 12, line 14-16

## Reviewer D

Please see the attached file for my minor comments, which I include below.

1. This should probably be  $p < 0.001$ . p-values are never exactly zero.

: We have modified our text as advised

2. There have been few recent comparisons. But please include these citations:

\* Cheng H, Clymer JW, Ferko NC, Patel L, Soleas IM, Cameron CG, Hinoul P. A systematic review and meta-analysis of Harmonic technology compared with conventional techniques in mastectomy and breast-conserving surgery with lymphadenectomy for breast cancer. *Breast Cancer: Targets and Therapy*. 2016;8:125.

\* Huang J, Yu Y, Wei C, Qin Q, Mo Q, Yang W. Harmonic scalpel versus electrocautery dissection in modified radical mastectomy for breast cancer: a meta-analysis. *PLoS One*. 2015 Nov 6;10(11):e0142271.

\* Currie A, Chong K, Davies GL, Cummins RS. Ultrasonic dissection versus electrocautery in mastectomy for breast cancer—a meta-analysis. *European Journal of Surgical Oncology (EJSO)*. 2012 Oct 1;38(10):897-901.

: We have modified our text as advised

: page 4, line 22

3. This should probably be  $p < 0.001$ . p-values are never exactly zero.

: We have modified our text as advised

4. Please also mention that decreased blood loss or drainage may not have been observed because the cutoff (50 ml) may have been too high for blood loss, and the total drainage was not measured. Different endpoints may have been more sensitive.

: Thank you for your advice. In our hospital, if the amount of intraoperative bleeding is too small to be measured, it is marked on the surgical record as less than 50ml. Therefore, in this study, the amount of intraoperative bleeding was analyzed with less than 50ml rather than an accurate measurement value. This is a limitation of a retrospective study, and it is additionally described in the text.

: Page 12, line 6-11