
Peer Review File

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Reviewer A

This is a retrospective review of 213 breast reconstructions comparing acute surgical outcomes after one stage breast reconstruction. The authors compare 3 groups of patients, those with nipple sparing mastectomy (nsm) areolar sparing mastectomy (asm) and skin sparing mastectomy (ssm), Their conclusion is that nsm increases the risks of skin necrosis and infection rates as compared with the other groups. Although the statistical analysis does demonstrate the differences between groups, I do not think that the conclusion is accurate. There are several problems with the study design that are not at all discussed. The biggest limitation of this study is that this is a retrospective review in groups of patients who are highly selected. The authors do not randomize the patient selection for the type of mastectomy, and it is possible that the nsm patients are different from the other groups. Only a prospectively randomized study could definitively draw the conclusion that it is the nsm that increases risks of complications. A matched group analysis could also potentially correct for differences between groups in a retrospective fashion. These are also relatively small groups of patients that make it difficult to draw accurate conclusions. Thus, the conclusion could at most be that nsm MAY increase complications rates based on these cohorts.

the authors need to add some of these points to the discussion and change the conclusion in order to make this more acceptable for publications

#Comment 1: about retrospective study design and small sample group

Reply: As pointed out in the review, the authors know that prospective randomized allocation is the most powerful study design. And the next best thing is to do a matched group analysis if the different factors of the cohorts are distributing equally.

Unfortunately, excision of the nipple areolar complex during breast mastectomy is determined according to the location of the patient's cancer, and the judgment of the surgeon is an important part in this process, so the plastic surgeon has a limitation in determining the surgical method. Therefore, it takes a long time to obtain a sufficient sample size through a prospective study, so this study was designed retrospectively.

The limitations due to this are also described in the discussion. Since there was no significant difference in age, underlying disease, BMI, etc. in the demographic of each group, the study was conducted under the assumption that the groups were matched.

Changes in the text: No changes in the text

#Comment 2: Conclusion

Reply: We modified the conclusion

Changes in the text: Page 10, line 19

Reviewer B

In my view (and literature) there are only two cohorts: 1) Nipple Sparing Mastectomy (NSM) and 2) Skin Sparing Mastectomy (SSM). The important difference is if you conserve the nipple (and ducts) or not. There probably is an increased risk of infection following NSM due to bacteriae in the ducts or risk of infection through the ducts. Furthermore, the bloodsupply to the nipple can be a challenge due to thin skin flaps. Keeping the areola without the nipple is a SSM in my view as there are no ducts or bacteriae in the areola, which is merely pigmented skin.

I would suggest that you re-due your paper dividing into two cohorts, at the please name the groups NSM and SSM, as the use of cohort 1 and 2 is difficult for the reader.

If you choose to change the manuscript accordingly, please re-due the material and methods, results including statistics, and divide the complications into short term (Infection for instance) and longterm (Capsular contracture) and rewrite the discussion according to the new groups/results.

#Comment 1: dividing into two cohorts.

Reply: As pointed out by the reviewer, the areola-sparing and skin sparing groups were combined and the SSM group (n=92) was combined, and the sample size was corrected to be similar to Cohort 1 (n=121), and statistical analysis was performed. There was no significant difference of incidence of complication between the SSM group and the NSM group when the Chi-square test was performed (attached tables at end of note). Therefore, for significant results, it was subdivided into three groups and compared according to the existing method. We will perform analysis according to the method you pointed out in the further prospective study.

Changes in the text: No change in the text

#Comment 2: complication classification

Reply: Complication can be classified as skin necrosis, short-term for infection, and long term for capsular contracture. Infection may appear due to long-term complication (more than 3 weeks after surgery). However, it is difficult to accurately compare long-term infections according to NAC sparing because patients receive postoperative chemotherapy and the period from surgery to chemotherapy varies from patient to patient. Therefore, this study did not address long-term infection. We added the comment that we analyzed only the infection and necrosis that occurred within 3 weeks after surgery

Changes in the text: page6/line20

#Comment 3: names of cohorts

Reply: In the manuscript, table, and figure legend, Cohort 1,2,3 were modified with Nipple-sparing mastectomy (NSM), Areola-sparing mastectomy (ASM), and Skin-sparing mastectomy (SSM).

Changes in the text: all name of cohorts were corrected as above

Table 1. Demographic of three cohorts

	Cohort 1	Cohort 2	<i>P</i> - values
Number of breasts	121	92	
Age			
Mean	45.5	45.48	0.841
Range	28-62	27-62	
Body mass index (kg/m²)			
Mean	23.7	22.95	0.680
Range	17.7-30.1	18.5-32.3	
Comorbid conditions			
Smoking	3(2.5)	10(10.87)	0.635
Diabetes	1(0.8)	1(1.09)	0.388
Obese ^{a)}	22(18.2)	20(21.74)	0.535

Volume of resected tissue (cc)			
Mean	273.3	277.5	0.119
Range	50-1030	90-400	
Operation time (min)			
Mean	168.4	173.5	0.821
Range	75-217	62-239	
Duration for drainage (day)			
Mean	15.8	16.7	0.723
Range	3-74	6-34	
Size of implant (mL)			
Mean	256.8	264.67	0.235
Range	90-400	90-400	
Chemotherapy			
Adjuvant chemotherapy	65(53.7)	46(50)	0.610
Neoadjuvant chemotherapy	5(4.13)	4(4.35)	0.340
Post-mastectomy radiotherapy	4(3.31)	11(11.96)	0.027
ADM			
Alloderm	16(13.3)	15(16.30)	0.764
Cryoderm	42(34.7)	47(51.09)	0.017
Megaderm	63(52.0)	30(32.61)	0.040

Values are presented as number (%) unless otherwise indicated.

^{a)} Body mass Index $\geq 25\text{kg/m}^2$