Peer Review File

Article information: https://dx.doi.org/10.21037/gs-22-175

Reviewer A

Comment: It seems that a scientific basis for this is necessary with 64cm2 and 2.5 mm, respectively, which are grouped by the surface area and thickness used in ADM. In actual ADM-assisted breast reconstruction, a size larger than 64 cm2 is generally used. Authors should be more specific about the rationale for grouping, and suggest a more scientific standard.

Reply: Thank you for taking the time to read my original manuscript and to provide feedback. The size and thickness of the ADM we used were classified as follows (Tables 2, 3). Recently, manufacturers have made large-sized ADMs, but in the early days of using ADMs, large-sized ADMs did not come out, so a small-sized ADM was used. The classification criteria for size and thickness were set as the average value for adequate classification of the number of patients in our data. Since the size and thickness are relative comparisons, the standards were arbitrarily set.

Table 2. Criteria of ADM thickness

	Thin	Thick
AlloDerm	1.66	2.8
Megaderm	1.25, 1.9	2.65
CGCryoDerm	1.5, 1.62, 1.66	2.5, 2.65

*Average thickness (measure: mm)

Table 3. Criteria of ADM surface area

	Small	Large
AlloDerm	48, 60, 64	96
Megaderm	48, 64	96, 126
CGCryoDerm	40, 48, 52, 55, 56, 60, 64	70, 75, 80, 90, 96, 112, 114, 120, 144

(measure: cm^2)

Changes in the text: We added data of ADM thickness and surface area (See Page 6, line 118-120, Table 2, 3)

Reviewer B

The authors have evaluated the effect of thickness and surface area of ADM on drainage after direct-to-implant breast reconstruction. The authors have classified the ADMs into four groups according to their size and thickness, then compared the outcomes.

Thank you for taking the time to read my original manuscript and to provide feedback.

Comment 1. Please describe the indications for choosing each ADMs. When did the authors use thick ADM besides thin ADM? When did the authors use small ADM besides big ADM?
Reply 1: ADM size was determined by considering implant size, subpectoral pocket size, ptotic degree of breast, and chest wall size. In the early days of using ADM, there was no large-sized ADM, so all variables were not considered. However, a large-sized ADM appeared later, allowing an ADM of an appropriate size to be used in consideration of all the variables. ADM thickness was used randomly. Additionally, since our hospital did not always prepare ADMs of various sizes and thicknesses, we sometimes used the sizes and thicknesses we had.

Comment 2. I wonder what the difference was between mesh type ADM and non-mesy type.
Reply 2: We did not use mesh type ADM.

Comment 3. Large ADMs are generally used in large breast. I don't think it's a new concept that using a large ADMwill cause a lot of drain.
Reply 3: As you said, I usually use large ADM on large breasts. However, as in the first answer, we also considered subpectoral pocket size, ptotic degree of breast, and chest wall size in determining the size of the ADM. As a result, there was no statistical difference in breast size (mastectomy volume) between groups in our data.
Changes in the text: We added criteria of ADM thickness and surface area (See Page 6, line 130-133)

Reviewer C
Comment: Can your group comment on the specifics of the other less popular ADMs used in the study.
Could you comment on your drain protocol for the patients who had increased drainage.
One would assume that if a larger piece is used is due to a larger base diameter requiring a larger implant this is most likely to occur in patients with larger breast size and higher BMI. The increase in serous fluid could be related to these factors rather than the size of the ADM.
Could you comment on the Outcome off the patients? in other words, patients who had increased drainage where they more likely to fail reconstruction, need more surgeries, is it clinically significant to have an increased drainage or more of an inconvenience for the surgeon and the patient?
Could you clarify the timeline for follow up for your study?
Reply: Thank you for taking the time to read my original manuscript and to provide feedback. We had fewer groups III and IV with ADM thicknesses greater than 2.5 mm. In the early days of using ADM, thick ADM was not commercially available, so thin ADM was used, and after thick ADM appeared, thick ADM could be used. The

ADM size was determined by considering the implant size, the ptotic level of the breast, and the size of the chest wall.

Patients with increased drain volume were also removed with the same protocol (<20 mL/day for two consecutive days). Instead, because the drain maintenance period was long, it was removed from the outpatient department after discharge. After discharge, the patient measured and recorded the drain volume by herself at a certain time every day, and visited the hospital twice a week for drain site dressing. The breast was compressed with a bandage until the drain was removed.

As you said, a higher BMI or a larger breast increases the amount of serous fluid. We also confirmed the positive correlation between BMI, mastectomy volume, implant volume and drain volume in our data. However, there was no statistical difference in BMI, mastectomy volume, and implant volume between groups. Therefore, it can be said that ADM caused the serous fluid difference by group.

If there is a lot of drain, it clinically means that there is a lot of serous fluid, so wound healing takes a long time, contracture due to implant capsular fibrosis may occur later and reoperation may be required. Also, the risk of infection due to drain increases. The patient maintains the drain for a long time, which may cause discomfort by increasing the length of hospitalization or the number of outpatient visits.

Recently, we are performing a prepectoral approach to breast reconstruction by completely covering the breast implant with ADM. We are studying the difference in drain volume in this method.

Changes in the text: We added drain protocol for the patients who had increased drainage. (See Page 7, line 137-141)

Reviewer D

Overall a very nice study that supports the notion that the larger the surface area of ADM to get vascularize, the more the drainage. However, this is also influenced by the size of the dead space, which varies by the chest wall size, breast/mastectomy weight, and other factors. So, the authors have to address the following issues before acceptance: (1) Need to identify how the ADM sizes were chosen for each patient, (2) Need to tell us why 64 cm squared was chosen - this is a very small piece, as most chest widths are at least 16 cm, so the vertical height could have only been 4 cm - not very big. Was this the normal breakpoint that allowed for statistical significance? If so, the results may not translate to moderate and larger size breasts, please comment. (3) what was the success rate of seroma drainage? did it lead to multiple drainage procedures? Explantations? (4) Does your center use direct to implant prepectoral approach? If so, then what is the seroma related to this approach, where much larger sizes of adm are used? (5) Does your team perforate or alter the adm to encourage sticking to the mastectomy flap or other methods to reduce seroma?

If you answer these questions, I feel the article can be published.

Reply: Thank you for taking the time to read my original manuscript and to provide

feedback.

1. ADM size was determined by considering implant size, ptotic degree of breast, and chest wall size. In the early days of using ADM, there was no large-sized ADM, so all variables were not taken into account. However, a large-sized ADM appeared later, allowing an ADM of an appropriate size to be used in consideration of all the variables. ADM thickness was used randomly. Additionally, since our hospital did not always prepare ADMs of various sizes and thicknesses, we sometimes used the sizes and thicknesses we had.
2. The size and thickness of the ADM we used were classified as follows (Tables 2, 3). As you said, 64 cm squared can be a small size. But we also used a lot of ADMs smaller than 64 cm squared. Recently, manufacturers have made large-sized ADMs, but in the early days of using ADMs, large-sized ADMs did not come out, so a small-sized ADM was used. The classification criteria for size and thickness were set as the average value for adequate classification of the number of patients in our data. Since the size and thickness are relative comparisons, the standards were arbitrarily set.

Table 2. Criteria of ADM thickness

	Thin	Thick
AlloDerm	1.66	2.8
Megaderm	1.25, 1.9	2.65
CGCryoDerm	1.5, 1.62, 1.66	2.5, 2.65

*Average thickness (measure: mm)

Table 3. Criteria of ADM surface area

	Small	Large
AlloDerm	48, 60, 64	96
Megaderm	48, 64	96, 126
CGCryoDerm	40, 48, 52, 55, 56, 60, 64	70, 75, 80, 90, 96, 112, 114, 120, 144

(measure: cm^2)

3. After the drain was removed, if breast swelling was seen on an outpatient department, USG and aspiration were performed. After aspiration, compression was applied with an bandage, and additional aspiration was performed in case of recurrence. All patients improved after aspiration and no explantation was done.
4. We performed a subpectoral approach to all patients.
5. No additional procedures were performed to stick the ADM into the mastectomy flap. Postoperative compression was well maintained with a bandage and movement of the arm and shoulder was limited. No additional procedures were performed to stick the ADM into the mastectomy flap. Postoperative compression was well maintained with a bandage and movement of the arm and shoulder was limited.

Changes in the text: We added data of ADM thickness and surface area (See Page 6, line 118-120, Table 2, 3)

We added criteria of ADM thickness and surface area (See Page 6, line 130-133)