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Breast

Comparing Cortiva Silhouette to AlloDerm for Use in Prepectoral Two-stage Prosthetic Breast Reconstruction

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Background: The use of acellular dermal matrices (ADMs) in implant-based breast reconstruction has become increasingly routine during the past 20 years. ADMs improve soft-tissue support, facilitate greater tissue expander (TE) fill volumes, and reduce rates of capsular contracture. As the ADM market continues to grow, outcomes studies are necessary to assess the risks and benefits of each product. In this study, we compare the performance of Cortiva Silhouette, the thinnest ADM widely available, to AlloDerm, commonly considered the industry standard.

Methods: We performed a retrospective review of 178 consecutive two-stage prosthetic breast reconstructions performed by the senior author. In every case, either Cortiva or AlloDerm was used to provide soft-tissue support during TE placement. Subjects were divided into Cortiva and AlloDerm cohorts and compared across patient characteristics and reconstructive outcomes variables.

Results: During the study period, AlloDerm was used in 116 reconstructions; Cortiva was used in 62. After propensity score matching (62 AlloDerm, 62 Cortiva), Cortiva was associated with greater intraoperative and final TE fill volumes, as well as larger silicone implants. Cortiva was also associated with fewer complications overall, and fewer instances of mastectomy skin necrosis, delayed wound healing, and seroma.

Conclusions: Cortiva Silhouette is noninferior to AlloDerm in terms of safety and providing soft-tissue support in prepectoral two-stage implant-based breast reconstruction. In this study, Cortiva supported greater TE fill volumes and larger silicone implants relative to AlloDerm and was associated with fewer complications.
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INTRODUCTION

The use of acellular dermal matrix (ADM) in implant-based breast reconstruction has become increasingly routine since the technique was first described by Breuing and Warren in 2005.[1,2] In both direct-to-implant (DTI) and tissue expander (TE)-based approaches, ADMs improve soft-tissue support, facilitate greater TE fill volumes, and reduce rates of capsular contracture.[3–8] As reconstructive techniques have trended away from the submuscular pocket, ADM has become critical to achieving proper implant positioning and full anterior coverage in a totally subcutaneous plane.[9–12]

Early reports on the inclusion of ADM in implant-based breast reconstruction almost exclusively described the use of AlloDerm (Allergan/AbbVie, Dublin, Ireland), a human-derived, decellularized tissue matrix that remains popular among plastic surgeons. During the past 20 years, several other human-derived and animal-derived ADMs, prepared using a variety of processing techniques, have been adopted for use in breast reconstruction. Although a few reports have suggested higher complication rates associated with certain products compared with AlloDerm, the literature is generally equivocal on the clinical differences among the various ADMs commonly used in breast reconstruction.[13–28]

Cortiva (RTI Surgical, Alachua, Fla.) is a human-derived ADM available in multiple thicknesses designed for use in reconstructive surgery. Since 2016, multiple studies have demonstrated similar outcomes of prosthetic

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breast reconstruction using Cortiva versus AlloDerm.[28–30] Recently, Keane et al[16] published the results of their randomized control trial comparing Cortiva to AlloDerm for use in implant-based breast reconstruction. They concluded that Cortiva was noninferior to AlloDerm in terms of safety, clinical outcomes, and patient-reported outcomes, and likely cheaper on average. Like other prior studies, Keane et al evaluated the performance of Cortiva 1 mm Allograft Dermis, a 1.0 ± 0.2 mm-thick ADM that retains the donor skin's basement membrane.

The newest Cortiva product, Cortiva Silhouette, is only 0.45- to 0.7-mm thick and omits the basement membrane, making it nonpolar. In comparison, the form of AlloDerm commonly used in breast reconstruction measures 1.6 ± 0.4 mm. Despite its unique properties, there is little published information on the use of Cortiva Silhouette or how it performs relative to other ADMs. Over the past several years, the senior author (A.M.) has used both Cortiva Silhouette and AlloDerm Ready to Use (RTU) for implant support in prosthetic breast reconstruction. In this retrospective study, we compare the clinical outcomes of Cortiva Silhouette versus AlloDerm RTU for use in immediate prepectoral two-stage implant-based breast reconstruction.

Takeaways

Question: During the past 20 years, several human-derived and animal-derived acellular dermal matrices (ADMs), prepared using a variety of processing techniques, have been adopted for use in breast reconstruction. A fairly new ADM is Cortiva Silhouette, and in this study, we investigated outcomes associated with its use relative to AlloDerm Ready to Use.

Findings: In a retrospective review of 178 breast reconstructions, Cortiva was associated with fewer complications overall, and fewer instances of seroma, delayed wound healing, and mastectomy skin necrosis.

Meaning: Cortiva Silhouette is noninferior to AlloDerm in terms of safety in the context of prepectoral two-stage implant-based breast reconstruction.

METHODS

Study Design

Institutional review board approval was obtained before performing the study. All patients with at least 100 days of follow-up after immediate prepectoral TE placement for two-stage implant-based breast reconstruction performed by the senior author between 2017 and 2023 were included. Either AlloDerm RTU or Cortiva Silhouette was used for TE support in every case, depending on product availability on the day of surgery. Patients who underwent DTI reconstruction or who went on to have an autologous second stage were excluded from this study. Mastectomies were performed by four different oncologic surgeons during the study period.

Surgical Technique

The senior author's technique for TE placement was identical throughout the study period: on a back table, a single 16 cm × 20 cm piece of ADM was trimmed to cover the anterior and 2–3 cm of the inferior-posterior surface of a deflated AlloX2 (Sientra, Irvine, Calif.) TE of appropriate base width. The ADM was secured to the TE suture tabs using 2-0 polyglactin 910 (Vicryl; Ethicon, Cincinnati, Ohio) suture. After the completion of mastectomy, the breast pocket was irrigated with normal saline followed by dilute betadine. The TE-ADM construct was then delivered into the breast pocket and secured in appropriate position by suturing the ADM to the pectoralis major muscle using 2-0 Vicryl. Intraoperatively, each TE was filled with a certain volume of air depending on patient anatomy and appearance of the mastectomy flaps. Intraoperative indocyanine green (SPY) angiography (Stryker Corp/Novadaq Technologies, Kalamazoo, Mich.) was used infrequently to further define the perfusion of the mastectomy flaps in cases of questionable viability, independent of the ADM used. The volume of initial TE fill was inversely correlated to the surgeon's level of concern regarding mastectomy flap viability; expanders were typically filled to a volume at which no skin folds were visible and flap perfusion remained robust. One surgical drain was placed per reconstructed breast. Prophylactic antibiotics were administered perioperatively and were discontinued upon discharge from the hospital.

Postoperatively in clinic, TE air was replaced with saline, and serial saline fills were performed until the patient expressed that her desired breast size had been approached.[31] Drains were removed once output was minimal, typically at the first clinic appointment 7–10 days after surgery. In a second stage, the TE was exchanged for a smooth, round silicone gel implant without placement of any additional ADM.

Statistical Analysis and Outcomes

The following data were extracted on a per-patient basis: age; race; body mass index (BMI, kg/m^2); comorbidities, including diabetes; smoking status; timing of chemotherapy; and length of follow-up. Parameters retrieved on a per-breast basis included mastectomy type, mastectomy specimen weight (g), radiation therapy, intraoperative TE fill (mL), final TE fill (mL), implant volume (mL), number of revisions for fat grafting, volume of fat grafted (mL), and the incidence of postoperative complications (eg, mastectomy skin necrosis, delayed wound healing, seroma, hematoma, infection, or capsular contracture). Complications were recorded if treatment required inpatient admission and/or reoperation.

Subjects were divided into AlloDerm and Cortiva cohorts depending on the ADM used at the time of immediate TE placement. Propensity score matching was performed using logistic regression modeling to better understand the effect of ADM on various outcomes. Subjects who underwent reconstruction using AlloDerm were matched one-to-one using nearest-neighbor selection without replacement to subjects who underwent reconstruction with Cortiva. Individual propensity scores

Table 1. Patient Characteristics

	Before Matching			After Matching		
	AlloDerm (N = 116)	Cortiva (N = 62)	*P*	AlloDerm (N = 62)	Cortiva (N = 62)	*P*
Patients	68	36		43	36	
Age, y			0.154			0.228
Mean (SD)	49.3 (11.1)	46.7 (12.6)		49.3 (11.0)	46.7 (12.6)	
Race			0.019			0.043
Asian	7 (6.0%)	12 (19.4%)		4 (6.5%)	12 (19.4%)	
Black	5 (4.3%)	0 (0.0%)		4 (6.5%)	0 (0.0%)	
Hispanic	13 (11.2%)	5 (8.1%)		5 (8.1%)	5 (8.1%)	
White	91 (78.4%)	45 (72.6%)		49 (79.0%)	45 (72.6%)	
BMI, kg/m^2			0.019			0.632
Mean (SD)	24.2 (3.4)	25.7 (4.5)		25.3 (3.8)	25.7 (4.5)	
Diabetes	3 (2.6%)	2 (3.2%)	0.806	2 (3.2%)	2 (3.2%)	1.000
Hypertension	14 (12.1%)	8 (12.9%)	0.872	10 (16.1%)	8 (12.9%)	0.610
Smoking			0.094			0.082
Current	7 (6.0%)	0 (0.0%)		4 (6.5%)	0 (0.0%)	
Former	20 (17.2%)	15 (24.2%)		10 (16.1%)	15 (24.2%)	
Never	89 (76.7%)	47 (75.8%)		48 (77.4%)	47 (75.8%)	
Chemotherapy			0.012			0.061
None	70 (60.3%)	25 (40.3%)		37 (59.7%)	25 (40.3%)	
Neoadjuvant	31 (26.7%)	19 (30.6%)		16 (25.8%)	19 (30.6%)	
Adjuvant	15 (12.9%)	18 (29.0%)		9 (14.5%)	18 (29.0%)	
Radiation therapy			0.740			0.470
None	99 (85.3%)	54 (87.1%)		53 (85.5%)	47 (75.8%)	
Prereconstruction	9 (7.8%)	3 (4.8%)		6 (9.7%)	3 (4.8%)	
Postreconstruction	8 (6.9%)	5 (8.1%)		3 (4.8%)	5 (8.1%)	
Mastectomy type			0.056			0.173
NSM	101 (87.1%)	47 (75.8%)		53 (85.5%)	47 (75.8%)	
SSM	15 (12.9%)	15 (24.2%)		9 (14.5%)	15 (24.2%)	
Mastectomy weight (g)			0.071			0.970
Mean (SD)	379.1 (199.4)	436.0 (188.7)		437.3 (197.1)	436.0 (188.7)	
Follow-up, d			<0.001			<0.001
Mean (SD)	951.9 (522.4)	372.6 (278.5)		848.2 (429.5)	372.6 (278.5)	
Range	103–2069	152–1267		103–1940	152–1267	

NSM, nipple-sparing mastectomy; SSM, skin-sparing mastectomy.

were calculated based on age, BMI, and mastectomy specimen weight. The cohorts were compared using two-tailed *t* test for continuous variables and Fisher exact test for categorical variables.

Logistic multivariable regression analysis was also performed on the unmatched sample to determine independent associations between certain patient factors or surgical variables and the incidence of any complication, or seroma, specifically. Effect sizes were expressed as odds ratios (ORs) and 95% confidence intervals. Statistical significance was set at a *P* value of less than or equal to 0.05. All statistical analysis was performed using R Statistical Software (Foundation for Statistical Computing, Vienna, Austria).

RESULTS

In total, 104 consecutive patients (178 breasts) underwent immediate prepectoral TE placement for two-stage implant-based breast reconstruction. ADM was used in every case: AlloDerm RTU in 116 reconstructions and Cortiva Silhouette in 62. The AlloDerm and Cortiva cohorts were statistically similar in terms of age, comorbidities, smoking status, and radiation treatment. Before matching, the AlloDerm cohort included a smaller proportion of Asian patients (6.0% versus 19.4%; $P = 0.019$), had a lower average BMI (24.2 ± 3.4 versus 25.7 ± 4.5 kg/m^2; $P = 0.019$), included a smaller percentage of patients who underwent adjuvant chemotherapy (12.9% versus 29.0%; $P = 0.012$), and had a lower average mastectomy weight (379.1 ± 199.4 versus 436.0 ± 188.7 g; $P = 0.071$). After propensity score matching, balance was acquired across 62 AlloDerm reconstructions and 62 Cortiva reconstructions, with regard to age (49.3 ± 11.0 versus 46.7 ± 12.6 y; $P = 0.228$), BMI (25.3 ± 3.8 versus 25.7 ± 4.5 kg/m^2; $P = 0.632$), chemotherapy, mastectomy type, and mastectomy specimen weight (437.3 ± 197.1 versus 436.0 ± 188.7 g; $P = 0.970$). Although all included subjects had a minimum of 103 days of follow-up after TE placement, the average length of follow-up was greater among the AlloDerm cohort (848.2 ± 429.5 d) compared with the Cortiva group (372.6 ± 278.5 d; $P < 0.001$) after matching (Table 1).

After propensity score matching, Cortiva was associated with greater intraoperative TE fill (195.2 ± 108.9 versus 243.5 ± 108.1 mL; $P = 0.014$) and final TE fill (304.7 ± 119.6 versus 355.6 ± 139.6 mL; $P = 0.034$) volumes. Before

Table 2. Implant Volume and Fat Grafting before and after Propensity Score Matching

	Before Matching			After Matching		
	AlloDerm (N = 116)	Cortiva (N = 62)	*P*	AlloDerm (N = 62)	Cortiva (N = 62)	*P*
Intraoperative TE fill, mL			<0.001			0.014
Mean (SD)	174.6 (108.2)	243.5 (108.1)		195.2 (108.9)	243.5 (108.1)	
Final TE fill, mL			<0.001			0.034
Mean (SD)	278.2 (108.4)	355.6 (139.6)		304.7 (119.6)	355.6 (139.6)	
Implant volume, mL			0.005			0.201
Mean (SD)	461.4 (115.4)	523.1 (151.8)		490.5 (118.5)	523.1 (151.8)	
Fat grafting, instances			0.005			<0.001
Mean (SD)	0.31 (0.53)	0.10 (0.35)		0.40 (0.56)	0.10 (0.35)	
Volume of fat grafted, mL			0.115			0.195
Mean (SD)	82.1 (46.4)	115.0 (10.0)		85.7 (48.2)	115.0 (10.0)	

Table 3. Complications before and after Propensity Score Matching

	Before Matching			After Matching		
	AlloDerm (N = 116)	Cortiva (N = 62)	*P*	AlloDerm (N = 62)	Cortiva (N = 62)	*P*
Any complication	33 (28.4%)	7 (11.3%)	**0.009**	21 (33.9%)	7 (11.3%)	**0.003**
Mastectomy skin necrosis	15 (12.9%)	0 (0.0%)	**0.003**	11 (17.7%)	0 (0.0%)	**<0.001**
Delayed wound healing	7 (6.0%)	1 (1.6%)	0.175	5 (8.1%)	1 (1.6%)	0.094
Seroma	4 (3.4%)	0 (0.0%)	0.139	4 (6.5%)	0 (0.0%)	**0.042**
Hematoma	1 (0.9%)	0 (0.0%)	0.463	1 (1.6%)	0 (0.0%)	0.315
Infection	15 (12.9%)	7 (11.3%)	0.751	8 (12.9%)	7 (11.3%)	0.783
Capsular contracture	2 (1.7%)	0 (0.0%)	0.298	2 (3.2%)	0 (0.0%)	0.154

Boldface values indicate statistical significance.

matching, Cortiva was also associated with larger silicone implants (461.4 ± 115.4 versus 523.1 ± 151.8 mL; $P = 0.005$), though this difference was not statistically significant after matching (490 ± 118.5 versus 523.1 ± 151.8 mL; $P = 0.201$). In the matched comparison, Cortiva patients underwent fewer fat grafting procedures on average (0.40 ± 0.56 versus 0.10 ± 0.35 procedures; $P < 0.001$). Among patients who underwent fat grafting, those reconstructed using Cortiva received a greater volume of fat (85.7 ± 48.2 versus 115.0 ± 10.0 mL), although this comparison was not statistically significant ($P = 0.195$) (Table 2).

The groups were then compared in terms of postoperative complications. After matching, AlloDerm was associated with a significantly greater incidence of any complication relative to Cortiva (33.9% versus 11.3%; $P = 0.003$). This disparity derived primarily from the difference in rates of mastectomy skin necrosis (17.7% versus 0.0%; $P \leq 0.001$) and seroma (6.5% versus 0.0%; $P = 0.042$); however, delayed wound healing (8.1% versus 1.6%), infection (12.9% versus 11.3%), and capsular contracture (3.2% versus 0.0%) also occurred more frequently in the AlloDerm cohort to nonsignificant levels (Table 3). Post hoc power analysis revealed a power of 82.4% for identifying inferiority of either ADM in terms of being associated with any complication.

On multivariable regression analysis ($R^2 = 0.235$), current smoking was associated with 6.4-fold greater odds of developing any complication ($P < 0.001$). The use of Cortiva instead of AlloDerm conferred a nearly significant protective effect against any complication [OR = 0.35 (0.12–1.02); $P = 0.053$]. The other factors in the analysis, which included age, BMI, diabetes, hypertension, chemotherapy, radiation, and implant volume, were not significantly associated with the risk of any complication. Mastectomy weight had a statistically significant but inconsequential effect on the odds of developing a complication [OR = 1.00 (1.00–1.01); $P = 0.008$) (Table 4).

Table 4. Multivariable Regression Analysis for Factors Associated with Any Complication

	Any Complication		
Factor	OR	95% CI	*P*
Age	1.00	0.96–1.04	0.984
BMI	0.88	0.75–1.04	0.135
Diabetes	1.25	0.12–13.60	0.853
Hypertension	2.03	0.52–7.95	0.311
Current smoking	6.40	2.34–17.51	**<0.001**
Chemotherapy	1.51	0.55–4.11	0.423
Prereconstruction XRT	1.41	0.19–10.66	0.739
Postreconstruction XRT	0.00	0.00–Inf	0.989
Mastectomy weight	1.00	1.00–1.01	**0.008**
Implant volume	1.00	0.99–1.00	0.141
Cortiva versus AlloDerm	0.35	0.12–1.02	0.053

CI, confidence interval; XRT, radiation therapy.
Boldface values indicate statistical significance.

A second multivariable regression ($R^2 = 0.137$) was performed to identify factors associated with the development of seroma. None of the previously mentioned variables were significantly associated with the odds of developing a seroma (Table 5).

DISCUSSION

In this study, Cortiva Silhouette was found to be noninferior to AlloDerm RTU for use in prepectoral two-stage implant-based breast reconstruction. Over the course of

Table 5. Multivariable Regression Analysis for Factors Associated with Seroma

	Seroma		
Factor	**OR**	**95% CI**	***P***
Age	0.99	0.73–1.34	0.959
BMI	0.72	0.35–1.49	0.382
Diabetes	Inf	0.23–Inf	0.086
Hypertension	0.10	0.00–69.29	0.488
Current smoking	33.55	0.08–Inf	0.254
Chemotherapy	0.05	0.00–10.66	0.270
Prereconstruction XRT	Inf	0.00–Inf	1.000
Postreconstruction XRT	1.67	0.00–Inf	0.999
Mastectomy weight	1.01	0.99–1.02	0.375
Implant volume	1.03	0.99–1.07	0.145
Cortiva versus AlloDerm	0.00	0.00–Inf	0.996

CI, confidence interval; XRT, radiation therapy.

178 consecutive reconstructions, the two products were used interchangeably according to availability. Despite being used in larger reconstructions, on average, Cortiva was not associated with a greater incidence of complications. In fact, after propensity score matching along patient age, BMI, and mastectomy specimen weight, breasts reconstructed using Cortiva were associated with lower rates of wound healing delay, seroma, infection, and capsular contracture. On multivariable regression analysis, the use of Cortiva instead of AlloDerm conferred a nearly significant protective effect against the development of any complication. Cortiva was also associated with a lower incidence of mastectomy flap necrosis, although this finding is likely unrelated to the type of ADM used.

The ideal ADM for use in breast reconstruction would possess several important characteristics. It would have adequate strength and durability to help support the weight of a large implant for decades. It would be minimally inflammatory, to mitigate the development of seromas, while also having the ability to rapidly integrate within the breast pocket to reduce rates of capsular contracture. It should have the flexibility to facilitate easy manipulation by the surgeon and allow for close conformity to the prosthesis. It should also be sufficiently sterile to avoid contributing to implant infections. Finally, utilization of the ideal ADM would not be cost-prohibitive.

Our results suggest that Cortiva Silhouette possesses many of these ideal characteristics. Despite being about one-third as thick as AlloDerm RTU, on average, Cortiva was able to support significantly greater initial and final TE fill volumes and larger second-stage silicone implants—findings that echo prior studies comparing Cortiva to AlloDerm RTU.[30] This difference in implant size might explain the lower rate of fat grafting among breasts reconstructed with Cortiva, which may have required less secondary volume augmentation to achieve desired size. Although assessment of the long-term durability of Cortiva Silhouette will require future studies, our observations based on over 1 year of follow-up have not suggested any decline in strength compared with other ADMs.

The relative thinness of Cortiva may confer important advantages. Cortiva Silhouette is noticeably more pliable than AlloDerm and other ADMs, facilitating surgeon manipulation and closer conformity to the prosthesis. Histologically, thinner implant capsules incorporating ADM have been associated with smaller myofibroblast populations, which are central to the development of capsular contracture.[32] Thinner ADMs are also vascularized more rapidly, shortening the duration of the inflammatory foreign body response.[29] Rose et al[33] found that ADMs thicker than 1.2 mm (like most AlloDerm matrices) were associated with higher incidences of seroma, infection, and skin necrosis and suggested that most complications occurred at a rate inversely proportional to time to neovascularization. It is possible that Cortiva's relative thinness, even of the Cortiva 1-mm product that preceded Silhouette, facilitates more rapid incorporation and diminishes the incidence of clinically relevant seroma, a trend that has appeared in multiple studies, including this one.[16,28,30]

Differences in processing protocols may also affect outcomes related to the use of various ADM products. AlloDerm RTU undergoes a proprietary process that includes electron beam irradiation and is guaranteed to have a sterility assurance level of 10^{-3}. Cortiva products are sterilized via RTI's Tutoplast process, which uses low dose gamma irradiation to achieve a sterility assurance level of 10^{-6}. In a histological study comparing Cortiva to AlloDerm, Moyer et al[29] found that samples from Cortiva capsules stained less positively for the proinflammatory cytokine transforming growth factor β1. They hypothesized that the significantly smaller amount of donor DNA found in Cortiva products compared with AlloDerm resulted in less immunogenicity and a tempered inflammatory response. Given that transforming growth factor β is known to activate fibroblasts and induce capsular contracture, it seems plausible that Cortiva might be less prone to causing problematic capsule formation, although statistically significant superiority has not yet been shown.[34,35] Mitigation of the inflammatory response combined with rapid neovascularization may also contribute to the reduction in mastectomy skin necrosis and delayed wound healing associated with Cortiva versus AlloDerm in our study—a mechanism proposed in prior articles.[29,36]

The cost of ADM is a topic that has been discussed extensively in the breast reconstruction literature.[37,38] Although negotiated prices vary from institution to institution, Cortiva products seem to be less expensive than AlloDerm, in general. In their recent article, Keane et al[16] quoted ranges of \$23–\$26/cm^2 for Cortiva 1 mm versus \$28–\$31/cm^2 for AlloDerm RTU.

The strengths of this study stem from the uniformity of the subjects; every patient underwent immediate prepectoral two-stage implant-based breast reconstruction with the same surgeon, using the same TE model, and identical technique. Although Keane et al are commended for their rigorous randomized controlled trial on this topic, their cohort included both prepectoral and subpectoral reconstructions, smooth and textured implants, two surgeons, and multiple reconstructive paradigms, including DTI and two-stage free flap breast reconstruction.[16] The current study takes a contrasting approach in which every surgical variable, except for the type of ADM used, was

consistent across all 178 reconstructions. Through propensity score matching, we were able to further refine our comparison of AlloDerm versus Cortiva, by balancing the cohorts in terms of most important preoperative characteristics, including patient age, BMI, comorbidities, smoking status, chemotherapy, radiation therapy, mastectomy type, and mastectomy specimen weight. Moreover, our results represent the first description of outcomes associated with Cortiva Silhouette, the thinnest ADM currently marketed for use in postmastectomy breast reconstruction.

Our study also has some important limitations. The overall cohort size might be considered small in certain contexts and was skewed toward AlloDerm due to its greater availability at the beginning of the study period. For the same reason, the average follow-up duration was significantly longer among the AlloDerm group compared with the Cortiva cohort. Although the majority of operative complications associated with prosthetic breast reconstruction occur within the first 60 days after surgery, some problems such as implant malposition, capsular contracture, or implant rippling may not become apparent until much later.[39] Long-term outcomes studies will, therefore, be important in supporting the findings described here. Additionally, patient-reported outcome measures have become essential in the evaluation of breast reconstruction techniques; future studies should include surveys of patients who have undergone implant-based reconstruction using ADM to elucidate any advantages or disadvantages related to the type of ADM used.[40,41] Additionally, confounding due to a learning curve effect is a valid concern given the uneven time distribution of the two products. Finally, retrospective studies are inherently more susceptible to silent confounding and unidentified bias relative to prospective randomized trials.

CONCLUSIONS

Cortiva Silhouette is noninferior to AlloDerm RTU for use in prepectoral, two-stage implant-based breast reconstruction. In this retrospective, propensity score-matched analysis, we found that Cortiva supported greater TE fill volumes and larger silicone implants relative to AlloDerm and was associated with fewer complications. The thinness of Cortiva Silhouette relative to other forms of ADM may facilitate more rapid neovascularization and attenuation of the inflammatory foreign body response that contributes to seroma formation and capsular contracture. Given its advantages in terms of cost, plastic surgeons should consider adopting Cortiva for use in prosthetic breast reconstruction.

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DISCLOSURE

Dr. Momeni is a consultant for AxoGen, Gore, and RTI. The other authors have no financial interest to declare in relation to the content of this article.

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