



USE OF PARTIAL ACELLULAR DERMAL MATRIX IN PREPECTORAL NIPPLE-SPARING MASTECTOMY



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BACKGROUND

Nipple-sparing mastectomy (NSM)

- Subtle scar pattern
- Retain native nipple-areolar complex

Acellular dermal matrix (ADM)

Average cost of ADM in breast reconstruction: \$5,000 +

Full ADM coverage complication rates: 5.9% - 35%

Complications & considerations

- Seroma
- Hematoma
- Infection
- Increased operative costs

PURPOSE

Our study examines whether using partial ADM to cover the lower pole of the breast implant during NSM prepectoral reconstruction offers comparable, or even better, rates of postoperative complications while minimizing operative costs.

METHODS

Retrospective Chart Review

Nipple-sparing, implant-based reconstruction
June 2019 – October 2020

Nahabedian MY, Cocilovo C. Two-Stage Prosthetic Breast Reconstruction: A Comparison Between Prepectoral and Partial Subpectoral Techniques. *Plast Reconstr Surg*. 2017;140(6S Prepectoral Breast Reconstruction):22S-30S. doi:10.1097/PRS.0000000000000407
Cuomo R. Submuscular and Pre-Pectoral ADM Assisted Immediate Breast Reconstruction: A Literature Review. *Medicina (Kaunas)*. 2020;56(6):256. Published 2020 May 26. doi:10.3390/medicina56060256
de Blacam C, Momoh AO, Colakoglu S, Slavin SA, Tobias AM, Lee BT. Cost analysis of implant-based breast reconstruction with acellular dermal matrix. *Ann Plast Surg*. 2012 Nov;69(5):516-20. doi: 10.1097/SAP.0b013e318217fb21. PMID: 21587037.

Table 1. Patient Demographics

Demographic	N	% or $\pm$ SD
Patients	98	
Average Age (Years)	47.41	$\pm$ 11.13
Ethnicity		
Asian	3	3.06%
Black	3	3.06%
Other, Hispanic/Latino	1	1.02%
Other, Non-Hispanic	0	0.00%
Pacific Islander, Non-Hispanic	0	0.00%
White	91	92.86%
Mean BMI	25.67	4.58
Obese (BMI>30)	18	18.37%
Diabetes	1	1.02%
Hypertension	14	14.29%
Dyslipidemia	7	7.14%
Coronary Artery Disease (CAD)	1	1.02%
Smoking History		
Yes	36	36.73%
No	62	63.27%
History of Chest Wall Radiation	15	8.20%
Chemotherapy	16	16.33%
Neoadjuvant Chemotherapy	13	13.27%
Breasts Receiving PMRT	10	5.46%
History of Breast Surgery	34	18.58%
Final Follow-Up Time (in days)	337.63	138.00

*Abbreviations: BMI – body-mass index, XRT – chest wall radiation history, PMRT – Post mastectomy radiation therapy (by breast, rather than by patient)

Table 3. Stage 1 Postoperative Outcomes (by breast)

Complication	N	%
Any complication	23	12.57%
Infection	10	5.46%
Major Infection	7	3.83%
Minor Infection	3	1.64%
Washout + Salvage (Tissue Expander)	5	2.73%
Washout + Tissue Expander removal	2	1.09%
Dehiscence	6	3.28%
Seroma	9	4.92%
Hematoma	3	1.64%
Malposition	2	1.09%

Table 2. Perioperative Information

Factor	N	% or $\pm$ SD
Breasts Reconstructed	183	
Indication for Mastectomy		
Breast cancer	86	46.99%
Prophylactic	97	53.01%
Mastectomy Type		
Nipple-Sparing	183	100.00%
Mean Mass of Resected Specimen (in grams)	352.20	$\pm$ 185.88
Tissue Expander Plane		
Prepectoral	183	100.00%
Mean TE Size (in mL)	422.84	$\pm$ 91.17
Mean TE Fill (in mL)	385.87	$\pm$ 110.59
Reconstruction Laterality		
Unilateral	14	14.29%
Bilateral	84	85.71%
Axillary Lymph Node Dissection		
Yes	12	6.56%
No	171	93.44%
ADM Use		
Yes	183	100.00%
Mean Implant Size (in CC)	572.95	$\pm$ 153.73

Table 4. Stage 2 Postoperative Outcomes (by breast)

Complication	N	%
Any complication	13	7.10%
Infection	7	3.83%
Major Infection	4	2.19%
Minor Infection	3	1.64%
Washout + Salvage (Implant)	1	0.55%
Washout + Implant removal	3	1.64%
Dehiscence	9	4.92%
Seroma	0	0.00%
Hematoma	0	0.00%
Malposition	0	0.00%
Capsular Contracture	4	2.19%
Revision	38	20.99%

RESULTS

Most Common Cohort Characteristics

98 patients / 183 breasts
Smoking history (36.73%)
Prior breast surgery (18.58%)
Obese BMI (18.37%)

Most Cited Complications

Stage One Total: 12.57% of patients
Infection (5.46%)
Stage Two Total: 7.10% of patients
Dehiscence (4.92%)

CONCLUSION

Our study demonstrates that utilizing partial ADM coverage in the setting of NSM offers comparable, if not lower, complication rates at a fraction of the cost.

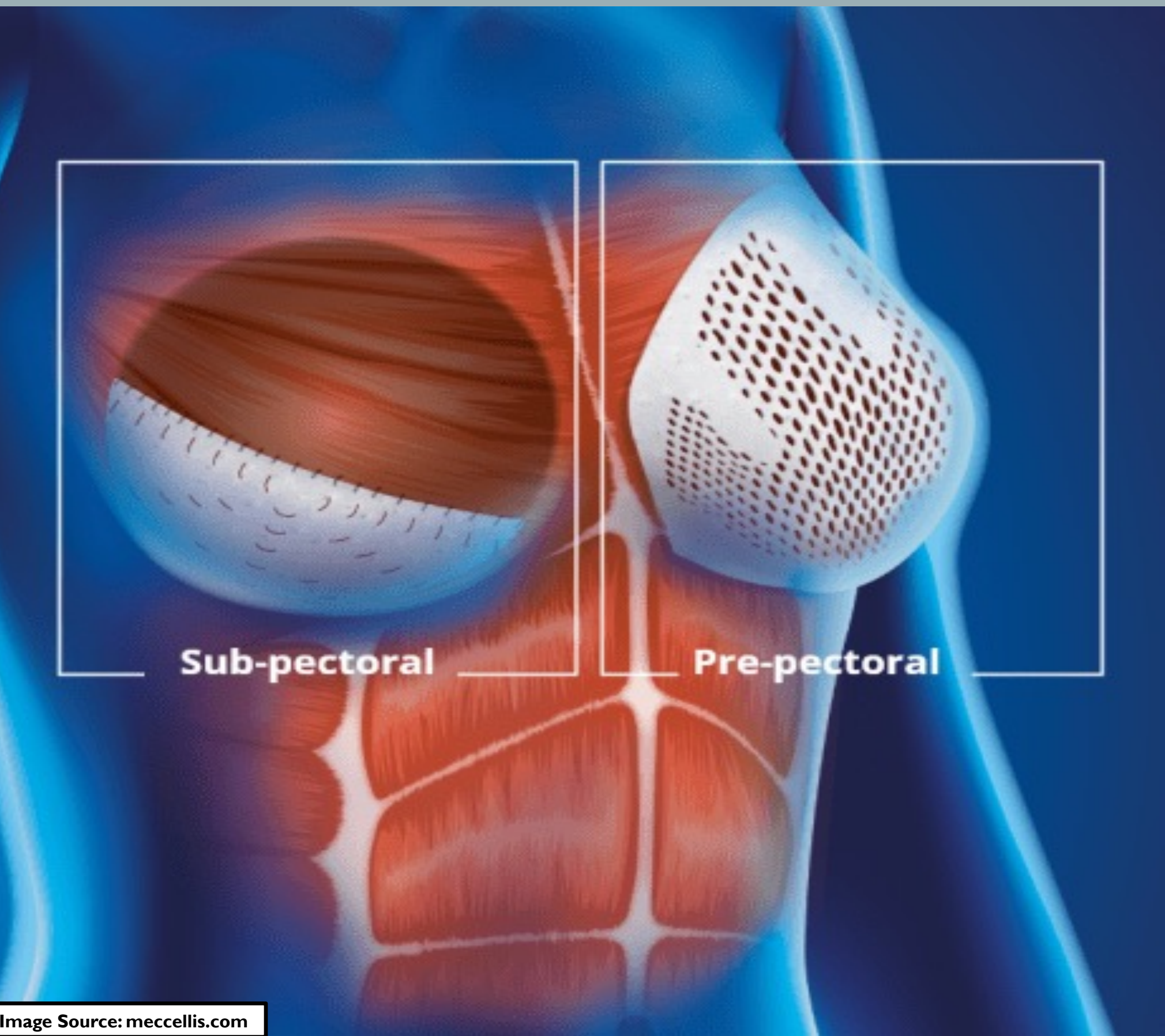


Image Source: meccellis.com