

PP-13

흉근위 보형물 유방 재건술에서 임플란트 비노출 무세포 동종 진피 포장 기술

(Techniques for Complete Acellular Dermal Matrix Wrapping in Prepectoral Direct-to-Implant Breast Reconstruction)



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Purpose: Prepectoral direct-to-implant (DTI) breast reconstruction has gained increasing popularity in recent years and is now widely adopted in implant-based breast reconstruction. In this approach, some surgeons prefer complete wrapping of ADM to minimize silicone surface exposure which can lead to foreign body reaction and capsular contracture. However, it is technically challenging to achieve a precise wrapping of a round, curved silicone implant using a rectangular and flat ADM. The authors experienced hundreds of cases of various implant and ADM for complete wrapping and want to share wrapping techniques.

Methods: Three principal techniques for complete ADM wrapping are described. The most common technique involves approximating the four corners of a square ADM sheet toward the center over the implant, followed by dog-ear trimming and suturing to conform to the implant surface in soft and elastic ADM. The second technique places the implant into a pocket-type ADM with a single opening; the ADM is then circumferentially trimmed along the implant margin, and the cut edges are closed with a continuous suture.

The third technique uses two large ADM sheets placed anteriorly and posteriorly with a 90-degree offset to achieve complete coverage.

Results: These techniques allow reliable and adaptable complete ADM coverage while preserving the natural three-dimensional contour of the implant in spite of various characteristics of ADM. Each method can be selectively applied depending on implant size, ADM configuration, and intraoperative tension.

Conclusion: The presented techniques provide practical options for achieving complete ADM wrapping in prepectoral DTI while maintaining implant shape and adequate soft-tissue support.

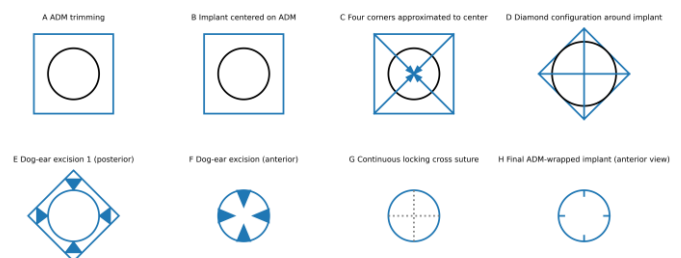


Fig. 1. Schematic illustration of complete acellular dermal matrix (ADM) wrapping for prepectoral direct-to-implant reconstruction
(A) A square ADM sheet is prepared and trimmed.
(B) The implant is positioned at the center of the ADM sheet.
(C) The four corners of the ADM are approximated toward the center over the implant.
(D) The ADM assumes a diamond configuration around the implant as the corners are brought together.
(E) Dog-ear excision of the posterior ADM layer is performed to reduce redundant tissue.
(F) Additional dog-ear excision on the anterior surface allows the ADM to conform smoothly to the spherical contour of the implant.
(G) Continuous locking cross sutures are placed to secure the ADM around the implant.
(H) Final appearance of the completely ADM-wrapped implant from the anterior view.

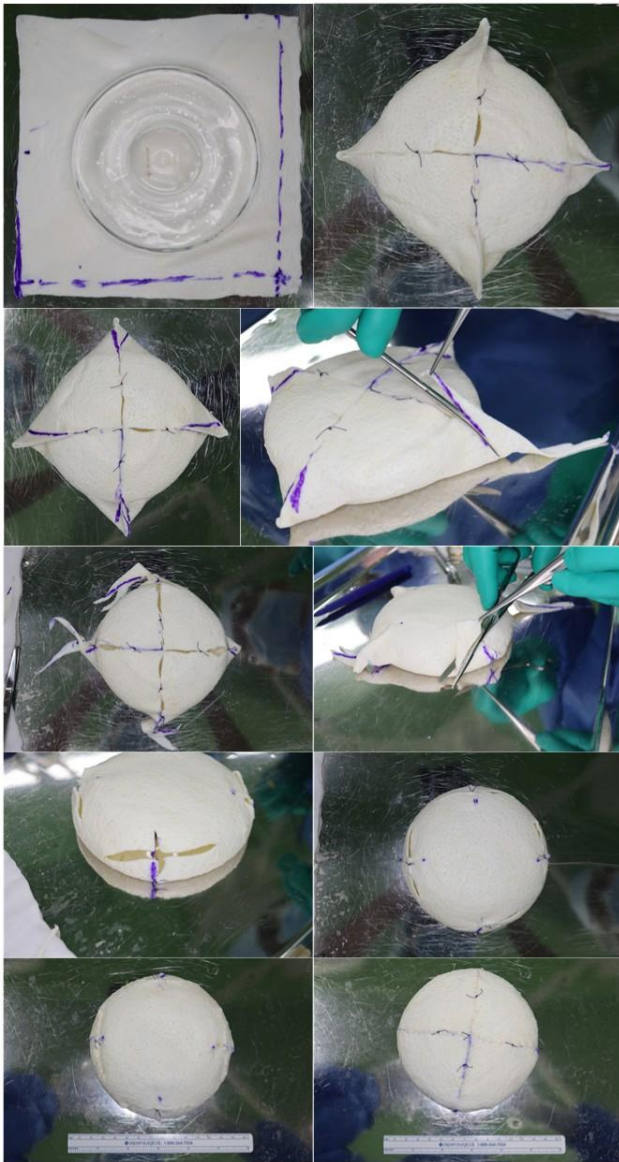


Fig. 2. Stepwise demonstration of the diamond-wrapping technique using a square ADM sheet

The implant is placed at the center of the ADM sheet and the four corners are approximated toward the center to create a diamond configuration. Temporary sutures are placed along the midlines to stabilize the ADM. Redundant dog-ear portions generated at the four corners are identified and trimmed to allow the ADM to conform smoothly to the implant surface. Subsequent approximation of the trimmed edges produces a snug and uniform ADM envelope around the implant.



Fig. 3. Pocket-type ADM wrapping technique

The implant is inserted into a pocket-type ADM with three closed sides and one open side. Redundant ADM along the implant margin is circumferentially trimmed. The ADM is first secured with interrupted sutures at eight equidistant points, and the remaining opening is closed with continuous sutures along the implant margin in two semicircular directions to complete the ADM envelope.



Fig. 4. Double-layer ADM wrapping technique

Two layers of rectangular ADM are positioned anteriorly and posteriorly to the implant with a 90-degree offset. ADMs are approximated like clumping snowballs with hands.