Autologous latissimus dorsi breast reconstruction with an acellular dermal matrix sling: a novel approach for improved aesthetics in breast reconstruction

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Surgeons routinely use acellular dermal matrix (ADM) for implant based breast reconstruction to provide improved definition of the inferior mammary fold (IMF), recreate the lateral breast fold, and improve lower pole projection. (1-3) In the setting of prior radiation therapy, it is the practice of the senior author to offer autologous breast reconstructive options for this subgroup of patients to reduce postoperative complications. We present a technique for recreating the breast aesthetic units by using an acellular dermal matrix sling in conjunction with a latissimus dorsi flap for improved aesthetic outcomes. (4-5)

The use of ADM in latissimus dorsi breast reconstruction has several advantages. First, the ADM allows defined specific placement of the lateral fold to avoid migration of the implant laterally when the patient is in the supine position. (Image A) Second, the ADM better supports the IMF, which is of special concern when the length of muscle between the skin-island and IMF is shortened and attenuated. (Image B) Finally, we have anecdotally seen a decrease in capsular contracture rates since using the ADM in conjunction with a latissimus dorsi flap reconstruction.

In addition to the post-operative benefits of using this technique, the precise placement of the ADM on the muscle flap can correct for several potential difficulties encountered intraoperatively. Firstly, when the pectoralis major is not usable due to post radiation stiffness, or improper position on the chest wall, we use the ADM to create the superior medial portion of the breast pocket, and the latissimus flap to define the inferior portion of the breast. Secondly, when the latissimus muscle fibers are attenuated, along the posterior-medial margin (spinal attachments), the ADM can be shifted inferiorly to establish the desired IMF position. Lastly, if the skin paddle does not easily inset into the skin defect, the ADM can be adjusted on the muscle to allow flexibility for tension-free placement in any direction.

In the setting of a previously radiated field the use of ADM in conjunction with a latissimus dorsi flap breast reconstruction allows the surgeon: (1) more control defining the pocket, (2) lateral mammary fold definition without concern of interfering with pedicle flow, (3) increased stability and definition of the inframammary fold, and (4) improved patient satisfaction and outcomes.

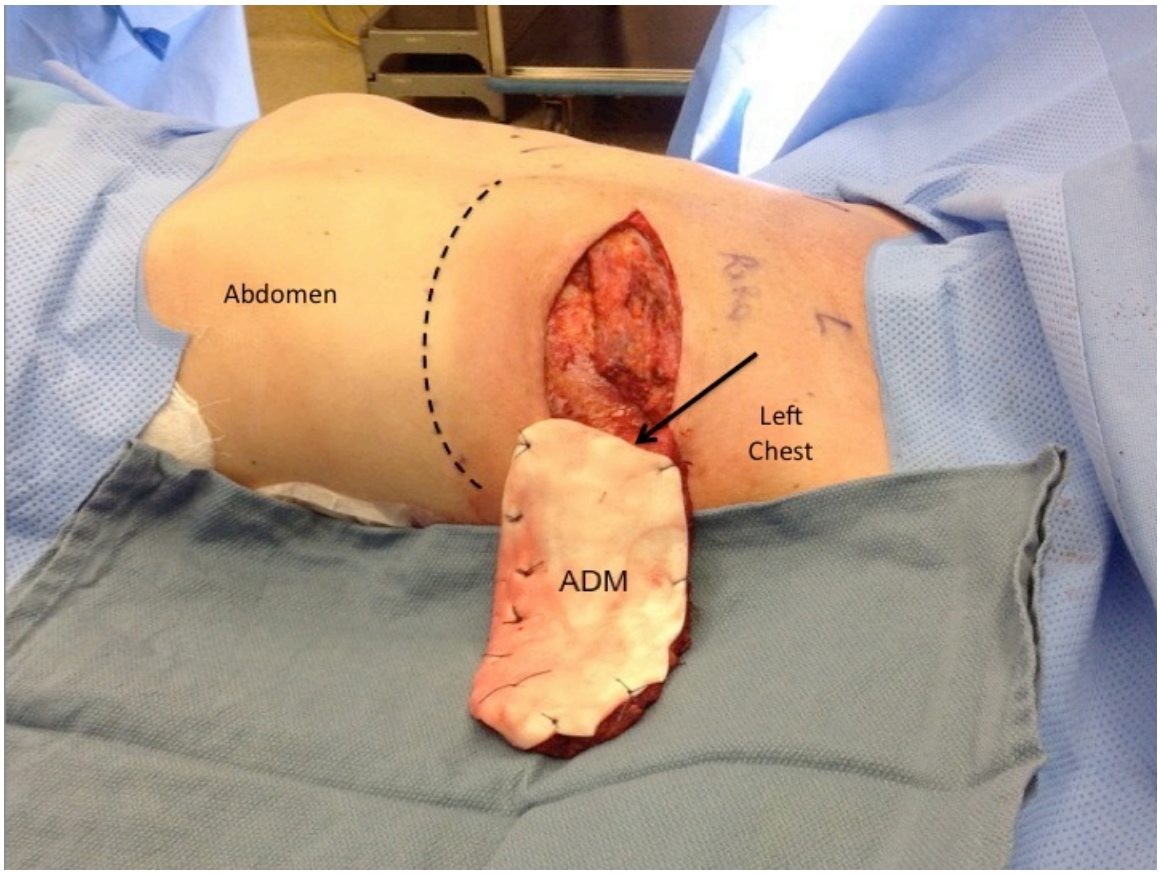

Image A: Left mastectomy defect depicting inferior surface of latissimus flap with ADM attached prior to inset. Dashed line indicates new IMF. Free edge of the ADM is used to create the lateral mammary fold indicated by the arrow.

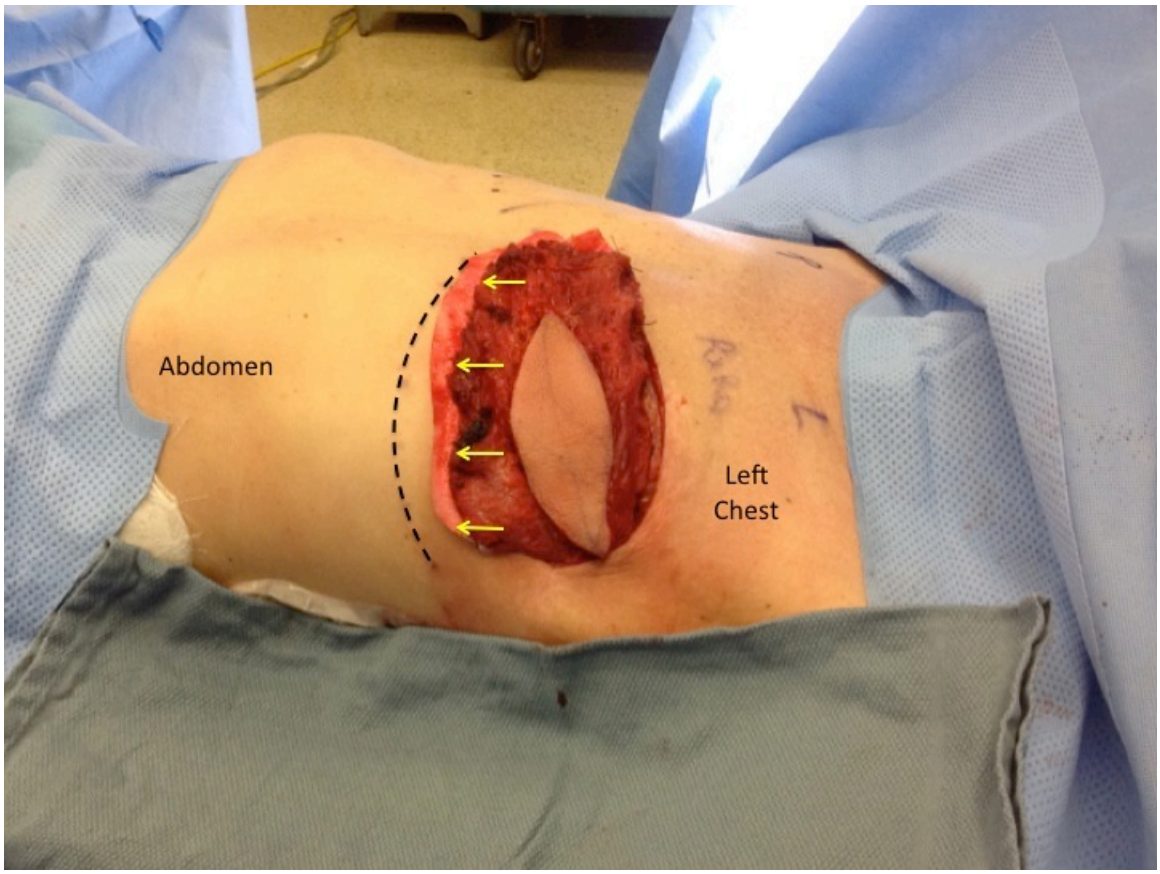

Image B: Left breast mastectomy defect with latissimus flap and skin paddle inset. Arrows demonstrating ADM overhang used to recreate IMF.

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