Autoderm: An alternative option for immediate primary breast reconstruction post mastectomy – Case Report

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Abstract
Immediate breast reconstruction following mastectomy with prosthetic devices has increased over the past decade. In 2010, over 93,000 breast reconstructions were undertaken in the United States and over 80% (74,872) of those were reconstructed with prosthetic devices. This significant change may be a reflection of a greater patient awareness of this modality or the expanding use in women not previously offered reconstruction.

With the introduction of bioprosthetics into breast reconstruction these have allowed to create customized breast pockets, improve the overall breast symmetry and natural contour, and shorten the reconstructive timeline. The anatomic limitation of bioprosthetic device reconstruction (single or multiple stage) is coverage of the lower pole of these devices. Placement in a complete submuscular position may have a tendency to displace superiorly and fail to create a natural ptotic breast. Complexity is further increased in unilateral reconstruction when attempts to match the unaffected side are undertaken.

Anatomical and surgical drawbacks have been extensively recorded in the literature with wound healing complications and nipple necrosis as high as 20 percent in those patients undertaking nipple-sparing mastectomies with immediate bioprosthetic reconstruction. Aesthetically, to create lower-pole fullness, yet still provide complete tissue coverage, acellular dermal matrices and fat grafting have been recruited into the complex decision-making process. However, these acellular tissue matrices are not without their own significant risks of infection (3.1%), explantation (1.5%), haematoma (1.5%), seroma (4.6%) and significantly high financial costs to the patient or health service providers. Hartzell and associates have reported a cost of $3536 to $4856 per breast (depending on thickness and size of the matrix).

Selber et al. (2013), described the ideal bioprosthetic as “free from potentially antigenic material, reliable and rapidly repopulated by host cells, able to promote early revascularisation, resistant to infection, easy to process” and “inexpensive or ideally free of cost”.

The purpose of this study was to propose an alternative option to primary breast reconstruction using lower abdominal donor dermal graft post deepithelialization and creating an ideal lower pole sling to support the breast implant. This technique has been poorly explored in the literature.

A 48-year-old female patient with BMI 26 elected to have a subcutaneous nipple sparing mastectomy and immediate reconstruction following a history of numerous lumpectomies for atypical masses leaving significant deformed and distorted breast parenchyma.

Subcutaneous mastectomies were undertaken through submammary incisions. Reconstruction with a submuscular implantation of 440cc saline implants. Abdominal laxity and diastasis were noted pre-operatively and formal abdominoplasty and double layer plication of the diastasis recti was undertaken through a mini-abdominoplasty incision. Dermal graft of 15cm by 20cm was harvested from the apron and sutured around the lower pole of the implant. The dermal graft was anchored to the inframammary fold and the pectoralis major border. All wounds were closed in a multilayer closure.

At 6 months post reconstruction there were no signs of infection, seroma or wound breakdown. The patient has obtained soft, symmetrical and anatomical breasts with full lower poles.

Therefore, in this study we demonstrated that autologous dermal grafts harvested from lower abdominal skin may be used as an alternative to high-cost acellular dermal matrix with low complication rates at 6 months follow up with significant patient satisfaction and safety.