

# Veritas® Clinical Study

## Case Series

### Tissue Expander/Implant Breast Reconstruction Following Mastectomy and Revisionary Breast Surgery Using Veritas® Bovine Pericardium

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#### INTRODUCTION AND PRINCIPLES

Biologic grafts have been used for nearly a decade to assist with the dual-plane partial submuscular placement of tissue expanders and implants used in breast reconstruction after mastectomy and for revisionary breast surgery<sup>1,2,3</sup>. Risks associated with acellular dermal matrix grafts for use in breast reconstruction have also been documented<sup>4</sup>.

Contrary to common assumptions, the ideal biologic graft does NOT stretch during the expansion process. The purpose of the biologic graft using this technique is to establish the inframammary fold and to prevent displacement of the tissue expander/implant out of the dual plane position. During the expansion process, the soft tissue coverage afforded by the pectoralis major muscle is ideally expanded over the tissue expander/implant to camouflage the rippling, wrinkling and palpability inherent to implant-based breast reconstruction techniques.

Ideal properties for biologic graft materials in the breast include the following

- Resistance to infection, seromas and wound complications
- Rapidity of revascularization and incorporation into surrounding tissues
- Excellence of tensile strength and handling during placement
- Favorable expense and preparation characteristics

The use of Veritas® bovine pericardium for breast reconstruction and revisionary reconstructive breast procedures is presented as a safe and reliable biologic graft material that integrates ideal properties for use in surgery of the breast.

#### Technique

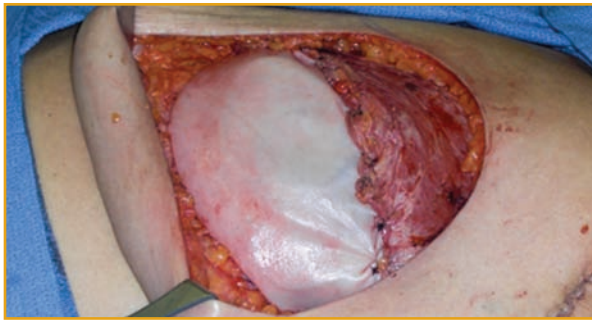
Veritas® bovine pericardium is used as a pectoral extender to allow for the reliable positioning of a tissue expander or implant under the pectoralis major muscle. The base diameter of the breast is measured preoperatively and a piece of Veritas® of appropriate length and width is selected for anticipated use. A triple antibiotic saline solution composed of 1L of sterile saline, 2 g of Ancef®, 160 mg of Gentamicin® and 100,000 units of Bacitracin® powder is used to soak the material, the implants and to irrigate the breast. Veritas® is secured to the preoperatively marked inframammary fold and laterally to the serratus anterior muscle and fascia using 2-0 PDS suture on an SH needle (*Photo A and B*).



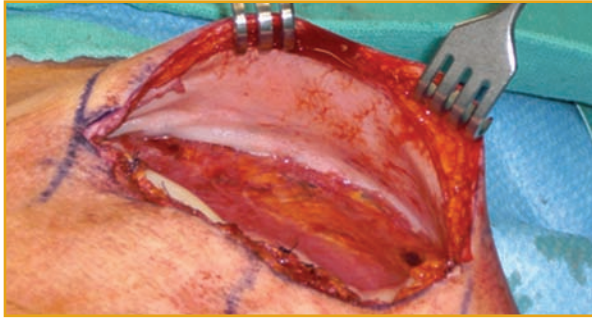
A



B



C



D

The implant or tissue expander is then introduced and secured within the pocket by suturing the caudal edge of the pectoralis major muscle and the superior edge of the Veritas® using a 2-0 PDS running suture (*Photo C*). A single drain is placed between the mastectomy skin flap and the Veritas® and exited from the axilla. Drains are typically left in place for two to three days until drainage is less than 30 cc/day. Rapid revascularization of Veritas® along the mastectomy skin flap is evident within two weeks of placement (*Photo D*).

## **Patient Presentations**

1) This is a 37 year old female with infiltrating ductal carcinoma of the left breast who underwent bilateral, skin-sparing, total mastectomies and left axillary sentinel lymph node biopsy. Immediate reconstruction was performed with 500 cc full height tissue expanders and Veritas® bovine pericardium as a pectoral extender sling. Intraoperative expansion of the tissue expanders was performed bilaterally with 200 cc of normal saline. Over the next 8 weeks, weekly expansion of

the tissue expanders was performed to a final over-expanded volume of 600 cc per side. Implant exchange with 650 cc silicone implants was then performed. 10 weeks later, bilateral nipple-areola reconstruction was performed utilizing the skate flap technique and full thickness skin grafts from bilateral inner thighs. Four month follow up photographs are provided following nipple-areola reconstruction.



Pre-op



4 month followup (after nipple-areola reconstruction)

2) This is a 55 year old female that underwent left breast total mastectomy and sentinel lymph node biopsy for multifocal ductal carcinoma in situ and infiltrating ductal carcinoma followed by tissue expander/saline implant reconstruction and right breast subglandular saline implant placement and mastopexy for symmetry at an outside institution. She presented to this surgeon with complaints of bilateral implant bottoming out and poor

symmetry. A single stage right breast silicone implant exchange with a 457 cc silicone implant and pocket conversion<sup>s</sup> using Veritas<sup>®</sup> bovine pericardium into the dual-plane position with revision mastopexy and left breast capsulorrhaphy, reinforcement with Veritas<sup>®</sup> bovine pericardium and silicone implant exchange using an 800 cc implant were performed. 14 month follow up results are presented.



*Pre-op*



*14 month followup*

3) This is a 54 year old female with left breast invasive ductal carcinoma and suspected bilateral ruptured submuscular silicone breast implants with a history of bilateral breast augmentation 20 years prior. A single stage left total mastectomy and sentinel lymph node biopsy with immediate reconstruction with Veritas<sup>®</sup> bovine pericardium

and a 460 cc silicone implant, right breast capsulectomy and implant exchange with a 325 cc silicone implant were performed. 12 weeks later, left nipple-areola reconstruction with skate flap using inner thigh donor full thickness skin graft was performed. 10 month follow up results are presented.



*Pre-op*



*10 month followup*

4) This is a 37 year old female with right breast multifocal ductal carcinoma in situ that elected to undergo bilateral total mastectomy with immediate reconstruction using Veritas® bovine pericardium and 400 cc tissue expanders. Intraoperative expansion with 150 cc of sterile saline per side was performed. Over the next 8 weeks, weekly expansion of the tissue expanders was performed to

a final over-expanded volume of 500 cc per side. Implant exchange with 500 cc silicone implants was then performed. 10 weeks later, bilateral nipple-areola reconstruction was performed utilizing the skate flap technique and full thickness skin grafts from labia minora donor grafts. 24 month follow up photographs are provided following nipple-areola reconstruction.



*Pre-op*



*24 month followup (after nipple-areola reconstruction)*

## CONCLUSION

Veritas® bovine pericardium is a safe and effective biologic graft material for use in breast reconstruction. A low rate of seromas, infections and wound complications is noted by this author. Veritas® is found to rapidly incorporate into surrounding mastectomy skin flaps with

revascularization evident within 2 weeks of surgery. Excellent graft-native tissue breaking strength<sup>6</sup> has been documented in in vivo studies. Off the shelf use and expense characteristics make Veritas® an ideal product for use in reconstructive breast surgery.

<sup>1</sup>Duncan, DI. Correction of implant rippling using allograft dermis. *Aesthet Surg J*. 2001 Jan; 21(1): 81-4.

<sup>2</sup>Baxter, RA. Intracapsular allogenic dermal grafts for breast implant-related problems. *Plast Reconstr Surg*. 2003 Nov; 112(6): 1692-6; discussion 1697-8.

<sup>3</sup>Salzberg, CA. Nonexpansive immediate breast reconstruction using human acellular tissue matrix graft. *Ann Plast Surg*. 2006 Jul; 57(1):1-5.

<sup>4</sup>Chun, Y. Implant-based breast reconstruction using acellular dermal matrix and the risk of postoperative complications. *Plast Reconstr Surg*. 2010; 125:499.

<sup>5</sup>Mofid, M. Pocket conversion made easy: a simple technique using alloderm to convert subglandular breast implants to the dual-plane position. *Aesthetic Surg J* 2009; 29:12-18.

<sup>6</sup>Gaertner, WB; Bonsack ME; Delaney JP. Experimental evaluation of four biologic prostheses for ventral hernia repair. *Journal of Gastrointestinal Surgery*; Volume 11, Numbers 10, October 2007. Pages: 1275-1285.

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