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ACELLULAR HYDRATED DERMIS

# Application of FlexHD® Acellular Dermis to Enhance Aesthetic Outcomes in Immediate Breast Reconstruction

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## INTRODUCTION:

During the last few years, the number of patients undergoing both therapeutic and prophylactic mastectomies has increased for a multitude of reasons. Anecdotal evidence suggests that the pendulum has swung from favoring breast conservation to favoring mastectomies, due in part to the increasing use of advanced diagnostic techniques including MRI technology. MRI resolution can rule out lumpectomy as a treatment option due to the ability to identify early bilateral involvement or multiple/larger unilateral lesions. Breast cancer patients are also subjected to a battery of tests leading some patients to choose prophylactic bilateral mastectomy to avoid future mammograms. Additionally, fear of cancer recurrence and improved results from breast reconstruction are increasing the occurrence of mastectomies.

As more patients undergo mastectomies, there has also been a significant increase in immediate breast reconstruction and the use of biological tissue matrices. As many others surgeons have described[1-5], the use of a biological tissue matrix in immediate breast reconstruction offers several advantages including the following: the ability to release the inferior border of the pectoralis major muscle, thereby creating a more natural appearing breast; the ability to precisely define the implant pocket, inframammary fold, and lateral border of the breast; and the ability to increase the amount of intra-operative fill of an implant or tissue expander. An increase in intra-operative expansion benefits patients by decreasing the time until the placement of a permanent implant and diminishing the psychological trauma of mastectomies. Patients are then able to visualize the beginning of their reconstruction instead of a flat chest wall.

With several biological tissue matrices to choose from, it can be confusing to determine which is most effective. Allograft acellular dermal replacement products dominate the market in breast reconstruction, likely due to better outcomes and lessened inflammatory reaction compared to xenograph matrices. FlexHD® Acellular Hydrated Dermis (Musculoskeletal Transplant Foundation, Edison, NJ) is a commercially available biological tissue matrix that has several advantages over many other products including the following: stringent donor criteria employed by Musculoskeletal Transplant Foundation (MTF); prehydration, thereby eliminating operating room time; sterility, minimizing the chance of infection; and easy handling characteristics.

Presented here are two case reports that demonstrate sufficient revascularization and the ability to achieve desired lower pole expansion for positive aesthetic outcomes.

## CASE REPORT 1:

AD, a 46-year-old patient with left ductal carcinoma in situ and right lobular neoplasia, elected to undergo bilateral nipple sparing mastectomies with immediate reconstruction. A two-stage expander based reconstruction was performed after a therapeutic right and prophylactic left nipple sparing mastectomy. The medium height MENTOR® CPX3™ Tissue Expander and FlexHD® Acellular Dermal Matrix

were utilized to create an adequate appropriately positioned soft tissue envelope. The acellular dermal matrix was sutured to the inframammary fold, lateral and medial borders of the breast, as well as the released edge of the pectoralis major muscle superiorly. After approximately three months of expansion to a total fill volume of 700 cc, the second stage exchange of the tissue expander was performed along with fat grafting to the hollowness in the infraclavicular region. During the second stage of reconstruction, the acellular dermal matrix was well incorporated and revascularized with little to no capsule formation seen (FIGURE 1 and FIGURE 2).

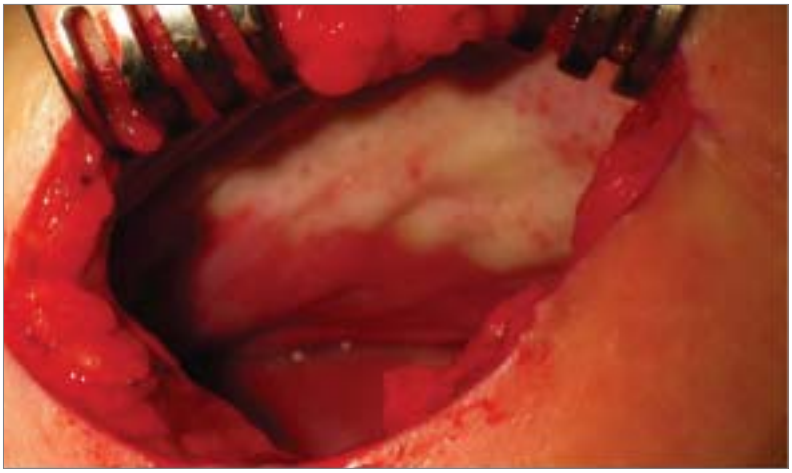

*FIGURE 1. Viewpoint from below of the FlexHD® and muscle interface as well as the incorporation of the graft. Note the punctate red appearance on the FlexHD® indicating revascularization.*

*A. Preoperative*

*B. Three months postoperative*

*FIGURE 2. Two-stage bilateral breast reconstruction using FlexHD®; patient was augmented to her expansion goal. A. preoperative, B. three months postoperative*

## CASE REPORT 2:

PW, a 51-year-old woman diagnosed with ductal carcinoma in situ of the right breast, elected to undergo bilateral mastectomies with immediate expander based reconstruction. Bilateral Wise-pattern mastectomies were followed by the placement of tissue expanders in the subpectoral position. The pectoralis muscle reach was extended by the use of FlexHD® Acellular Dermal Matrix. The patient had a small partial thickness wound at the inferior incision of the left breast that responded to local wound care. At the patient's preference, she elected to expand over five months every three weeks to a total fill volume of 880 cc after which MENTOR® High Profile 800 cc MemoryGel® Breast implants were placed during the second stage of the reconstruction. The patient elected to complete nipple-areola reconstruction (FIGURE 3).

*A. Preoperative*

*B. Six months postoperative*

*FIGURE 3. Two-stage bilateral breast reconstruction using FlexHD®; patient was augmented to her expansion goal.*

## CONCLUSION

The use of a FlexHD® Acellular Dermal Matrix can improve the positioning of the expander and the overall pocket that is established for the permanent breast implant. The rapid revascularization, ability to improve lower pole expansion, and ease of use make FlexHD® an ideal adjunct for breast reconstruction surgeons. The result of incorporating FlexHD® into the reconstructive armamentarium is to help achieve consistant improved aesthetic outcomes.

## REFERENCES:

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**Many variables, including patient pathology, anatomy, and surgical techniques, may influence procedural outcomes. Before use, physicians should review all risk information that can be found in the Instructions for Use.**

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