

Title:

Is There a Preferable Acellular Dermal Matrix - Breast Implants Match : A Comparative Electron Microscopy Scanning of Two Different Implant-Matrix Interfaces **Danino MA, Moreau M, Cassier S, C Bernier, A Gagnon J Boumeherri , Maalouf C, Isadpanah A, Giot JP**

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Introduction

Our goal is to characterize the ultrastructure at the interface of two textured expanders (Allergan BIOCELL® and Mentor SILTEX®) and an Acellular Dermal Matrix Alloderm®, through a prospective randomized study, using scanning electron microscopy.

Methods

We prospectively included who had a two stages breast reconstruction with an acellular dermal matrix Alloderm®. Five patients had a Mentor Siltex® expander and 5 had an Allergan Biocell® expander.

Two cm² periprosthetic capsule specimens were sampled en bloc with the implant during expander to permanent implant exchange. One at the junction between Alloderm® and the pectoralis major muscle and one at the site of Alloderm®. All samples were analyzed under SEM using High Vacuum (HiVac) modes and Energy dispersive X-ray (EDX) studies. Observations were charted in order to tally and objectivise three parameters: texture/cellularity /presence of biofilm and bacteria

These measurements were performed using Adobe Photoshop software (Adobe® Photoshop® CS6 Extended). This software allows for measurements of distance between two points on an image with a 2% margin of error

Results:

In Group 1: Biocell®/Alloderm®, We found no macro texture ingrowth of the capsule on the pores of the textured implants (Velcro-effect) at the implant-matrix interface. And a strong bacterial colonization of the implant porous surface, with presence of biofilm in 3 cases.

In group 2 Siltex® / Alloderm®, we found a smooth capsule surface but significantly less bacterial and no biofilm development

Conclusion

The lack of Velcro effect on the Biocell® implant in front of Alloderm®, facilitate bacterial seeding, propagation and the formation of a biofilm in 3 of the specimens.

The findings can help guide clinical decision making with regards to selecting the most optimal implant surface when employing an acellular dermal matrix, in order to minimize long-term complications.

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