cases occurred in the abdomen, seven of which were originally treated using the large cryolipolysis applicator. Four patients were first-degree relatives with similar clinical presentations. Of the 11 patients with PAH, five patients were subsequently treated with liposuction and one was treated with a combination of liposuction and an abdominoplasty, achieving both good cosmetic results and patient satisfaction. Our incidence of 0.38% (8 PAH events in 2073 treatment cycles) was significantly higher than the incidence reported by the manufacturer (0.025%).

CONCLUSION: Despite following appropriate treatment guidelines, our PAH incidence shows a 15-fold increase when compared to that reported by the manufacturer. We believe PAH is an underreported clinical entity of significant burden to the patients. Hispanic, middle-aged men undergoing cryolipolysis of the abdomen with a large applicator seem to be at increased risk for developing PAH. Further studies are needed to define the role of genetics, androgens, and other potential risk factors for PAH. Liposuction and/or abdominoplasty at the appropriate time after diagnosis, are helpful in treating this problem.

A Novel Breast Implant Surface Chemistry Significantly Reduces Acute and Chronic Peri-Prosthetic Capsule Formation in a Murine Model

Presenter: Sarah J. Karinja, BA

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INTRODUCTION: Capsular contracture (CC) is the most common complication of implant-based breast surgery and the source of significant patient morbidity. Yet, there are no clinically approved therapies for prevention or treatment of CC. Rather, the complication is mitigated with re-operation and capsule excision, which often necessitates implant removal and replacement. The mechanism underlying CC remains unknown, however is understood to involve an excessive and pathologic foreign body response (FBR). As such, herein we coated the surface of silicone implants with proprietary, anti-inflammatory, anti-fibrotic molecules developed by Sigilon, Inc. We hypothesized that covalently bonding these novel anti-inflammatory molecules to silicone implants would reduce the FBR for the lifetime of the implant, thus reducing later downstream effects of capsule formation and CC.

METHODS: Silicone implants were created from polydimethylsiloxane and coated with RZA15 or E9, two biocompatible and non-degradable, anti-fibrotic, proprietary molecules. Uncoated, RZA15- and E9-coated implants were implanted subcutaneously into the dorsa of wildtype C57Bl/6 mice. After 21, 90 and 180 days (equal to approximately 3, 10 and 20 years post-operatively in human years) peri-prosthetic tissue was removed for histologic analysis, and stained with Hematoxylin & Eosin and Masson’s Trichrome. The capsule was identified at five equidistant regions throughout the implant and outlined in ImageJ software. Capsule area was calculated, and divided by capsule length to determine the average capsule thickness per implant.

RESULTS: We compared mean capsule thickness at three time points across the three groups: E9-coated, RZA15-coated, and uncoated implants. At 21, 90 and 180 days, there was a statistically significant reduction in capsule thickness of RZA15- and E9-coated implants compared to uncoated implants (p < 0.05).

CONCLUSION: Coating the surface of silicone implants with RZA15 and E9 significantly reduced acute and chronic capsule formation in a mouse model for implant-based breast augmentation and reconstruction. As capsule formation obligatorily precedes capsular contracture, these results suggest contracture itself may be significantly attenuated. Furthermore, as peri-prosthetic capsule formation is a complication without anatomical boundaries, the chemistry of this novel compound may have additional applications beyond breast implants, to a myriad of other implantable medical devices.
BREAST SESSION 2

Management of Breast Implant Associated Infections in Breast Reconstruction

Presenter: Can Ozturk, MD
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INTRODUCTION: Tissue expander (TE) and implant infection is the most common cause of surgical readmission following breast reconstruction. The goals of this study are (1) to characterize a cohort of patients who were treated with IV antibiotics for suspected infection after prosthetic breast reconstruction, (2) to identify local microbiome and (3) elucidate an optimal antibiotic treatment protocol (4) to identify risk factors for explantation.

METHODS: A retrospective review of a prospectively maintained database was performed to identify prosthetic breast reconstruction patients who were diagnosed with a suspected infection and underwent IV antibiotic treatment. Patient characteristics, surgical details, outcomes of the suspected infection, accompanying complications, treatment modalities and culture data were reviewed. Comparisons were made between patients whose implants were salvaged versus explanted.

RESULTS: Fifty-nine patients with 67 tissue expanders/implants underwent IV antibiotic treatment with suspected infection during a two-year period (2014-2016). Of the reconstructions, 44 (66%) were tissue expanders and 23 (34%) were implants. Mean follow-up was 14.3 months. The most common IV treatment protocol was a combination of Daptomycin and Zosyn. Cultures were obtained in 43 infectious episodes which revealed S. epidermidis as the most commonly encountered pathogen followed by P. aeruginosa. A total of 34 devices (51%, 26 expanders and 8 implants) were explanted. Explantations were more common in patients with a history of chemotherapy (p=0.02), hypertension (p=0.03) and those who underwent therapeutic mastectomy (p=0.03). A higher rate of explantation was observed among cases with coexisting complications, a history of radiation, and in patients with larger breasts, however, this difference was not statistically significant.

CONCLUSION: Chemotherapy, hypertension and the therapeutic mastectomy were found to be independent risk factors for explantation due to postoperative infection following breast reconstruction. Prompt diagnosis of the implant infection with appropriate treatment, particularly in high risk patients is the key to avoid explantation. The combination therapy of Daptomycin and Zosyn has broad spectrum coverage and are found effective.

The Use of Antibiotic Beads to Salvage the Infected Breast Implant

Presenter: Paymon Sanati-Mehrizy, MD
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INTRODUCTION: Implant-based breast reconstruction is a well-established method for breast reconstruction. Although generally a safe procedure, when an infection arises in the implant-pocket, it is often necessary for the patient to return to the operating room where the choices are to remove the implant and place the patient on antibiotics, or salvage the implant and give intravenous antibiotics. Recently, there has been a rise in the use of antibiotic-impregnated beads for the treatment of surgical site infections. These beads, made of biodegradable materials and loaded with antibiotics, are placed inside a surgical site prior to closure. As the beads break down, they release antibiotics locally over an extended period of time, thus allowing for implant salvage and eliminating the morbidity of systemic IV antibiotics. The goal of this study is to present a case series illustrating how the use of antibiotic beads prevents the need for IV antibiotics administered via a PICC line and, more importantly, increases the likelihood of implant salvage and infection recurrence.