BREAST SESSION 2

Management of Breast Implant Associated Infections in Breast Reconstruction

Presenter: Can Ozturk, MD
Co-Authors: Cemile Nurdan Ozturk, MD; Mary Platek, PhD; Allison Soucise, MS; Peter J. Laub, BS; Nabiha Ahsan, BS; Wong Moon, MD; Robert Lohman, MD
Affiliation: Roswell Park Cancer Institute, BUFFALO, NY

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 statistical 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
Co-Authors: Rami Daniel Sherif, BA; Michael J. Ingargiola, MD; Philip J. Torina, MD; Marco Harmaty, MD
Affiliation: Icahn School of Medicine at Mount Sinai, New York, NY

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.
METHODS: A single-center, retrospective analysis of all patients who underwent implant-based breast reconstruction at Mount Sinai Hospital was performed. All patients who developed an implant infection and then underwent capsulectomy with implant exchange and STIMULAN beads impregnated with antibiotics were included. Patient demographics, medical history, operative complications, and surgical outcomes were reviewed.

RESULTS: Twelve patients were identified at Mount Sinai Hospital who fit the criteria. Ten patients had prior diagnoses of cancer in the affected breast. Comorbidities included hypertension, smoking, and immunocompromised status. Infections were noted anywhere from 5 days to 3 months post initial implant surgery. The surgical team was able to successfully salvage nine out of the twelve infected implants through the use of antibiotic bead therapy without the continued use of IV antibiotics.

CONCLUSION: The use of antibiotic beads is promising for salvaging infected breast implants and reducing the need for IV antibiotics. The study team was able to salvage 75% of the implants. Of the three patients who had unsalvageable implants, one was infected with antibiotic resistant rhodococcus that was refractory to bead therapy and one was noncompliant with post-operative instructions. Overall, antibiotic beads allowed the surgical team to salvage the majority of implants without the need for PICC lines and associated morbidity.

Breast Implant Infection Can be Successfully Treated with Nonsurgical Therapy

Presenter: Mariangela Rivera, MD
Co-Authors: Wong Moon, MD; Can Ozturk, MD; Cemile Nurdan Ozturk, MD
Affiliation: Roswell Park Cancer Institute, Buffalo, NY

INTRODUCTION: One of the most devastating complications after prosthetic breast reconstruction is infection. In the literature the infection rate of breast reconstruction using an implant device after mastectomy ranges between 1 to 35%.1,2 Antibiotic treatment is the most conservative management but has inconsistent results: successful salvage without removal or exchange of the device ranges from 0 to 25%.3 Currently, there are no detailed guidelines for antibiotics or protocol for the type of antibiotic, duration of treatment, or route of administration.

PURPOSE: The primary aim of this study was to determine the effectiveness of a combination antibiotic protocol to treat breast prosthetic infections in mastectomy patients. Secondary aims included the identification of risk factors in patients who failed antibiotic salvage.

METHODS: A protocol for all breast implant infections was instituted. Patients with clinical signs of infection were placed on intravenous piperacillin/tazobactam and daptomycin for 3 weeks. If patients did not respond or had progression of infection then the prosthetic device was removed. A single institution retrospective chart review evaluated procedures completed from 1/1/2014 to 5/15/2015 at Roswell Park Cancer Institute.

RESULTS: Nineteen mastectomies followed by prosthetic reconstruction were identified in the study. The mean surgical age was 48.7 years (SD +/- 9.2). Of the nineteen procedures, 9 had sentinel node biopsies and 1 underwent axillary node dissection. Subgroup analysis reveals majority of procedures resulting in a breast infection were patients who were current or previous smokers and either overweight or obese. Mean days to infection from surgery date were 29.0 days. The majority of the patients, 84.2% (16/19), had complete resolution of the infection. Patients without resolution of their infection, 15.8% (3/19) had their prosthetic devices removed. Mean and median duration of follow-up was 327.6 days (SD 78.28) and 332 days (range 196–493), respectively.

CONCLUSION: Implementation of a standardized antibiotic protocol of piperacillin/tazobactam and daptomycin resulted in a prosthetic device salvage rate of 84% in post mastectomy patients. The early institution of an antibiotic protocol as conservative management for treatment of breast implant infections was effective in this cohort of patients.

Reference Citations:
1. Ash O, Song DH. Reducing infection risk in implant-based breast-reconstruction surgery: challenges and solutions. Breast cancer (Dove Medical Press) JID - 101591856 PMC - PMC5012596 OID - NLM: PMC5012596 OTO - NOTNLM. 0913.