necessary to advance research on postmastectomy breast reconstruction and ultimately, eliminating it.

REFERENCES:
1. Kilbourne AM, Switzer G, Hyman K, Crowley-Matoka M, Fine MJ. Advancing health disparities research within the health care system: a conceptual framework. Am J Public Health. 2006;96(12):2113-2121.

Pathologic Evaluation of Reduction Mammoplasty Specimens and Subsequent Diagnosis of Malignant Breast Disease: A Nationwide Analysis

Presenter: Erika D. Sears, MD

Co-Authors: Yu-Ting Lu, MPH; Ting-Ting Chung, MS; Kevin C. Chung, MD, MS

Affiliation: University of Michigan, Ann Arbor, MI

PURPOSE: Reduction mammoplasty is one of the most common plastic and reconstructive procedures performed in the United States. Surgeons routinely submit breast specimens for evaluation after reduction mammoplasty owing to the nature of breast surgery. However, no rigorous evidence informs the necessity of routine pathologic evaluation of breast reduction specimens based on patient factors. This study sought to measure the use of pathologic evaluation of breast specimens among patients undergoing reduction mammoplasty and assess the rates of new diagnoses of malignant breast disease and associated cost for reduction mammoplasty surgical encounters. We hypothesized that pathologic evaluation would be widely utilized following reduction mammoplasty despite increased cost of care and relatively low rates of subsequent malignant breast disease, particularly among patients in low-risk age groups.

METHODS AND MATERIALS: We analyzed the Truven MarketScan Databases from 2009 – 2015 to identify female patients age 18 years and older undergoing reduction mammoplasty for macromastia. Patients were excluded if they were not observed at least 12 months before and after the operation, if they had genetic susceptibility to breast cancer, prior benign or nonspecific breast disease, or prior personal/family history of breast cancer. We recorded patient age, patients receiving pathologic evaluation of the breast specimens (gross or microscopic), new diagnoses of benign or malignant breast disease after pathologic evaluation, and total cost for the reduction mammoplasty encounters, including all services delivered on the same date as surgery and cost for pathologic examination of breast specimens within 7 days of surgery. We performed descriptive statistics to assess age-based rates of pathologic evaluation following reduction mammoplasty and new diagnoses of benign or malignant breast disease after pathologic evaluation. We also compared the total cost for reduction mammoplasty for encounters with and without use of pathologic evaluation.

RESULTS: We identified 17,738 macromastia patients undergoing reduction mammoplasty, of which 91.3% (n=16,193) received pathologic evaluation of breast tissue specimens. Use of pathologic evaluation was clinically similar across age groups <70 years (90.8–92.1%), and slightly lower for patients 70 and older (85.0%). Of patients who received pathologic evaluation, 99.7% (n=16,140) received microscopic evaluation. Among 7,610 patients 39 years and younger, 0.05% (n=4) were subsequently diagnosed with malignant breast disease within 3 months of surgery, compared to 0.25% in the entire cohort (n=44/17,738). Patients who received pathologic evaluation after reduction mammoplasty had $918 greater costs on average (mean $12,387; SD 9,348), compared to patients who did not receive pathologic evaluation (mean $11,469; SD 11,623).

CONCLUSION: Breast tissue after reduction mammoplasty is routinely submitted for pathologic evaluation, without consideration of age-based risk for breast cancer. Routine pathologic evaluation of breast tissue in patients 39 years and younger required an additional $1.7 million on average to detect a single occult breast cancer after reduction mammoplasty. In the quest for high-value care, clinicians and policy-makers should consider whether the practice of routine pathologic evaluation of breast tissue should be individualized based on patient age and other risk factors for breast disease.
**Affiliation: Tel-Aviv Sourasky Medical Center, Tel-Aviv**

**BACKGROUND:** Breast cancer surgery and reconstruction is currently considered the “gold standard” of treatment. Therefore plastic surgery consultation has become an inherent part of the breast cancer patient management, significantly improving aesthetic and functional results. Nonetheless, Surgical scars may be aesthetically unpleasant, serve as a focus of pain, pruritis, and considerable psychological distress. The most effective method of scar treatment is early intervention. Current standard practice for abnormal scar formation consists of the frequent use of moisturizers, silicone gel, silicone sheet occlusion, pressure therapy and sun avoidance. Integration of various laser modalities into scar treatment and scar prevention methods are gaining popularity and show impressive results. Vascular lasers, mainly the pulsed dye laser (PDL, 585–595 nm), have been shown to affect angiogenesis, collagen synthesis, and inflammation. While Fractional ablative CO2 LASER (FACL) have been shown to improve scar height, texture, and pliability efficiently. We set out to study the safety and efficacy of combined PDL and CO2 LASER therapy on the pre-scar surgical site.

**OBJECTIVE:** This study investigates the clinical effect combined PDL and FACL in preventing aesthetically displeasing scarring as well as improving appearance and symptoms of surgical post-mastectomy surgical wounds.

**METHODS:** A prospective randomized, controlled split scar study of PDL and FACL versus non-laser treatment control. Eighteen subjects planned for lumpectomy were enrolled. On each patient, the surgical scar was randomly assigned to treatment and non-treatment halves. Treatment consisted of a unique protocol of PDL (Syneron Candela, V-beam, 7mm, 0.45 milliseconds, 5–6 J/cm²) followed immediately by FACL (Lumenis, Encore, Deep Fx, line pattern, 15–20 milliseconds 5%) at a monthly interval for three consecutive treatments, starting 2–4 weeks following surgery. The treated and untreated scar segments were evaluated by three blinded investigators (two dermatologists and one plastic surgeon) and by the patients at six months post last treatment, utilizing the Patient and Observer Scar Assessment Scale (POSAS). The participants also rated overall satisfaction using a four-point scale.

**RESULTS:** The mean POSAS scores at six months post-treatment were significantly lower (better cosmesis) for the treated half compared with the untreated half (p<0.01). Satisfaction rates were significantly higher in the treated half (p=0.005).

**CONCLUSION:** This study indicates that combined PDL and FACL, performed in the early stage of wound healing may have the potential to optimize scar formation of surgical scars.

**Effects of Radiation on Risks and Patient-Reported Outcomes in Expander-Implant Reconstruction: Is There a “Best” Time to Radiate?**

**Presenter: Alfred P. Yoon, MD**

**Co-Authors: Ji Qi, MS; Hyungjin M. Kim, ScD; Jennifer B. Hamill, MPH; Reshma Jagisi, MD, DPhil; Andrea L. Pusic, MD, MHS; Edwin G. Wilkins, MD, MS; Jeffrey Kozlow, MD, MS**

**Affiliation: University of Michigan, Ann Arbor, MI**

**INTRODUCTION:** The oncologic benefit of radiation therapy for node positive breast cancer is well-known. However, studies have also shown poorer aesthetic outcomes, lower satisfaction, and higher complication rates in patients undergoing breast reconstruction with post-mastectomy radiation therapy (PMRT), compared to non-radiated patients. The timing of radiation treatment in two-staged, expander-implant reconstruction, whether to radiate before or after expander-implant exchange, has been a subject of contention. Previous research attempting to answer this question has been limited by small sample sizes and single center designs. In the current study, we evaluated the effects of radiation timing on patient reported outcomes (PROs) and complications in patients undergoing immediate expander-implant reconstruction.

**METHODS:** Patients receiving immediate expander-implant reconstruction and PMRT at 11 Mastectomy Reconstruction Outcomes Consortium (MROC) study sites were assessed preoperatively and two years following expander placement. Demographic and clinical data (age, BMI, diabetes, race, laterality, mastectomy type, extent of disease, acellular dermal matrix use, and chemotherapy) were collected. Patient-reported outcomes were assessed with BREAST-Q, PROMIS, and EORTC QLQ-BR23 surveys. Complications and reconstructive failures within two years were also recorded, with complications requiring