persists until the infection is cleared by antibiotic therapy and/or surgical management. While the acute phase response is essential for tissue healing and regeneration, over-activation of the acute phase response is maladaptive and may lead to systemic complications including thrombosis, organ failure, and disseminated intravascular coagulation. In the setting of severe infections, continuous activation of the APR has the potential to become dysregulated. The magnitude of the acute phase reaction can be quantified by both the peak concentration of CRP as well as the total duration of CRP elevation through calculating the area under the curve. We hypothesize that the area under the CRP curve is increased in musculoskeletal infection due to continual tissue injury and we believe that this cumulative response over time correlates with the incidence of complications.

METHODS: Pediatric patients with musculoskeletal infection that presented to the emergency room at a single, tertiary care pediatric hospital were identified between 2008 and 2013. CRP values and complications during hospitalization were obtained from the electronic medical record. Complications were defined as deviations from the standard hospital course for musculoskeletal infection, such as deep venous thrombosis, septic emboli, pulmonary edema, pleural effusion, pericardial effusion, delirium, shock and multi-organ failure. Statistical analysis was performed using MATLAB (Natlick, MA) and GraphPad Prism6 (La Jolla, CA).

RESULTS: A total of 119 pediatric patients with musculoskeletal infection were included in the study. Seventeen complications occurred (14%) including 4 cases of septic emboli, 3 cases of pleural effusions, 3 cases of DVT, 2 cases of septic emboli plus DVT, 1 case of delirium, 1 case of toxic shock syndrome, 1 case of pulmonary edema, and 1 case of multi-organ failure. The median area under the CRP curve in cases of musculoskeletal infection with complications was 3303.8 mg day/L, compared to 539.2 mg day/L in cases of musculoskeletal infection without complications (p value < .0001).

CONCLUSION: A dysregulated acute phase response in the setting of musculoskeletal infection has the potential to cause life-threatening complications. The area under the curve is a novel measure of both the intensity and duration of the acute phase response that correlates with the incidence of complications in pediatric patients with musculoskeletal infection. Clinicians should closely monitor for complications in pediatric patients with severe, prolonged musculoskeletal infections.

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Potential Risk Factors for Worsening Abdominal Well-Being after Abdominal Flap Breast Reconstruction: There’s No Such Thing As a Free Tummy Tuck

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PURPOSE: Patient-reported lower satisfaction with the abdomen preoperatively is a strong predictor of undergoing a DIEP flap. This may suggest that patients have specific expectations regarding their postoperative donor site outcomes. Whether these expectations are actually met has not been well documented. Therefore, we evaluated physical well-being of the abdomen before and after flap-based breast reconstruction to determine potential predictors for decreased postoperative abdominal well-being.

METHODS: We retrospectively analyzed a prospectively-maintained institutional breast reconstruction registry, selecting patients who underwent abdominally-based autologous flap breast reconstruction from 2010 to 2015. Our primary outcome was the Physical Well-being of the Abdomen (PWA) domain from the Breast-Q, measured preoperatively and at 6- and 12-month follow-up visits after final reconstruction. We classified patients into 2 groups: those who experienced a clinically-important worsening of PWA (wPWA group) from baseline to 12-month follow-up (defined as a decrease of > 7 points) and those who did not (control group). We used Chi-squared test, t-test, and Wilcoxon rank-sum test to examine potential predictors of worsened PWA. We then fitted a multivariable logistic regression model including variables with p<0.2 in a univariate analysis to estimate which variables may be potential risk factors for worsened PWA.

RESULTS: We identified 142 women who met inclusion and exclusion criteria. Of these, 74 (52%) experienced a clinically-important worsening of PWA, whereas 68
(48%) did not. The wPW A group experienced an average decrease in PW A of 25 points compared to baseline (95% CI[22–28] p<0.001). The control group experienced an average increase in PW A of 8 points compared to baseline (95% CI[5–10] p<0.001). Based on univariate analysis, we fitted a predictive multivariable logistic regression model including race, depression, hypertension, BMI, bilateral reconstruction, baseline PW A, and baseline RAND-36 general health scores (of p<0.2). This analysis showed an association between a higher baseline PW A (p<0.001) and race (p=0.009) with higher odds of decreased PWA at the 12-month follow-up. A higher baseline RAND-36 general health score, bilateral reconstruction (versus unilateral), and a lower BMI demonstrated a trend for clinically-important worsening of PWA.

CONCLUSIONS: Our results show that more than half of flap-based breast reconstruction patients experienced clinically-important worsening of abdominal well-being pre- to post-final breast reconstruction. This is at odds with the often-misleading notion of obtaining a “free” abdominoplasty in conjunction with breast reconstruction. Patients with higher preoperative abdominal well-being Breast-Q scores, lower BMI, and higher RAND-36 general health scores tend to have worsened well-being of the abdomen after flap-based breast reconstruction. Our finding that African-American patients and those classified under “Other” races are independently associated with significant worsening of PWA may be due to confounding factors that should be explored in larger, prospective studies. Clinicians may use these findings to identify patients at higher risk of worsened postoperative abdominal well-being and appropriately counsel them regarding realistic post-operative expectations.

PURPOSE: While there are a growing number of public health studies addressing the burden of mental health disease and HIV in transgender populations, there are disproportionately fewer investigations into the benefits of gender affirming surgery (GAS). The psychometric instruments that have been validated for measuring patient reported quality of life are unable to adequately address the unique psychosocial, legal, and medical stressors confronting transgender patients. Thus, we developed a patient-reported outcome instrument to evaluate the surgical outcomes and the post-operative experience of female-to-male (FTM) transgender men undergoing chest reconstruction.

METHODS: Transgender male patients at two university-affiliated transgender centers underwent structured interviews individually and in focus groups. Based on this qualitative feedback, a multidisciplinary panel of mental health providers, plastic surgeons, and primary care providers from transgender health clinics generated a 29-item survey module addressing three general domains of quality of life related to chest reconstruction in transgender male patients. The surveys were initially administered to 15 transgender male patients who underwent gender affirming surgery and were revised following cognitive debriefing interviews. The WHO Quality of Life (WHOQOL-BREF) survey, a previously validated quality of life instrument, was administered simultaneously for comparison. Wilcoxon signed-rank tests were used to test for significant differences in the median pre- and post-operative scores. Cronbach’s α and Pearson Correlation Coefficients were calculated to measure internal validity.

RESULTS: 11 transgender men to date have completed the revised SFTS pre-and post-operatively. Seventy percent were Caucasian and the median age was 32.5 (range 22–50) years. All patients underwent bilateral mastectomy with free nipple grafting. Only one patient (9%) experienced a major surgical complication requiring reoperation. Ultimately, the patient was pleased with his results and reported a significant improvement in his quality of life after surgery. The survey detected statistically significant median quality of life post-operative improvements in all three sections of our survey (p<0.005). While similar statistically significant improvements were found using the WHO Quality of Life survey (p<0.05), qualitative feedback revealed that patients perceived the WHO survey as an inappropriate tool for evaluating issues important to them. The median time to complete the pre and post-operative surveys was 10 minutes. Calculation of Cronbach’s α (0.67–0.81) and the Pearson Correlation Coefficient for each section revealed excellent internal validity.