Abstract QS37: The Efficacy of Closed Incision Negative Pressure Therapy in Complex Abdominal Reconstruction in High-Risk Patients

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compared to those not using NRT. We advise caution regarding prescribing NRT to active smokers in preparation for surgery, and recommend prospective studies to better elucidate the relationship between NRT use and postoperative outcomes.

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Quantitative Orthopaedic Spine Benefits Post Breast Reduction - Preliminary Results

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PURPOSE: Breast hypertrophy comes with an array of signs and symptoms that range from mild to debilitating in nature including: headache, neck pain, back pain, breast pain, painful bra strap grooves, hand numbness, and shortness of breath. Breast reduction surgery is one of the most frequently performed plastic surgery procedures that has been shown to have the highest patient satisfaction and improvement in quality of life on specific satisfaction survey questionnaires. The effects of breast reduction surgery on parameters such as sagittal spinal balance, paraspinal muscle function, and physical performance have not been evaluated. The objective of this study is to evaluate the effects of reduction mammaplasty on sagittal spinal balance, paraspinal muscles, and physical function using sophisticated spine surgery imaging modality pre and post breast reduction.

METHODS: This is a prospective, observational cohort study being carried out at the Montreal General Hospital (MGH) of the McGill University Health Centre (MUHC). Twenty-five patients are being prospectively enrolled in this IRB approved study. The following methods are used preoperatively and postoperatively for each patient: EOS X-ray (ultra-low dose radiation) of the spine in standing position*, MRI of the spine, clinical evaluation, patient self-assessment outcomes including Breast-Q (validated questionnaire in French & English). *EOS: A Nobel Prize winning imaging technology done in the standing position and which exposes the patient to 1/10 the radiation of a traditional X-Ray of the spine. EOS is the proper name for the imaging technology and it is not an acronym.

RESULTS: Postoperative improvement in thoracic kyphosis and lumbar lordosis are documented quantitatively on patients scanned in the standing position. Preoperative and postoperative MRI of the spine demonstrate quantitative changes in cross-sectional area and functional cross-sectional area. Significant postoperative improvement in all Breast-Q categories documented. The measurements will be presented as well as the radiographic evidence.

CONCLUSION: Reduction mammaplasty is not merely an aesthetic procedure but also a procedure with quantitative spine benefits. This may have an impact on health care system and third party payer insurance companies and may beckon the need for better guidelines based on those quantitative findings. This study is also being extended to breast cancer patients with unilateral mastectomy and back pain.


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The Efficacy of Closed Incision Negative Pressure Therapy in Complex Abdominal Reconstruction in High-Risk Patients

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PURPOSE: Obesity is a known risk factor for donor wound complications in abdominal based microsurgical breast reconstruction. Closed incision negative pressure therapy (ciNPT) has been used anecdotally in high-risk patients to prevent wound complications and infection. Due to the shortage of ciNPT studies in plastic surgery literature, we conducted a systematic review to evaluate the efficacy of this device in reducing wound complications and infection in complex abdominal reconstruction cases and its applicability in abdominal based microsurgical breast reconstruction.

METHODS: A literature search of the English literature in the PubMed/MEDLINE database (2006–2016) was
conducted to find publications comparing ciNPT to standard incisional care for complex abdominal wall reconstruction. Outcomes of interest included surgical site infection, wound dehiscence, seroma, hematoma, reoperation, and readmission as overall rates and associations were pooled. A fixed effects model was used to assess between-study heterogeneity and effect size. Funnel plots were used to assess publication bias.

RESULTS: There were 11 studies meeting inclusion criteria with 1723 patients total, 681 in the ciNPT group and 1042 in the standard incisional care. The majority of patients were obese, diabetic, and with recent history of smoking. Funnel plot revealed the majority of incidences reported in the studies were similar to the average, showing no publication bias. The use of ciNPT resulted in lower rate of surgical site infection (15% vs. 28%, RR 0.51, p=0.006, CI 0.39–0.68), wound dehiscence (8% vs. 15%, RR=0.53, p=0.154, CI 0.35–0.80), seroma (6% vs. 8%, RR=0.78,p=0.329, CI 0.48–1.27), hematoma (2% vs. 3%, RR=0.62,p=0.62, CI 0.23–1.64), and readmission (9% vs. 14%, RR=0.53,p=0.285, CI 0.35–0.80). There were only 2 studies reporting reoperation rate so meta-analysis was not performed.

CONCLUSION: The use of ciNPT reduced wound complications in complex abdominal reconstruction in high-risk patients. Similar patient selection can be applied to patients undergoing abdominal based breast reconstruction for future prospective randomized clinical trial to determine the efficacy of ciNPT in plastic surgery.

B. Tran: None. B. Lee: None.

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Is 3-D Fascial Reinforcement with “Silo” Technique the Answer for Complex Parastomal Hernia?

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PURPOSE: Parastomal hernia entails an enlargement of the original tunnel of the stoma through the abdominal wall muscle and fascia. The incidence of parastomal hernias ranges from 3% to 39%. Here, the authors describe their novel Silo technique for parastomal hernia repair which aims to increase the structural strength of the tunnel wall, reinforce the fascia above and below, and maintain a stable size of the stoma opening. The goal is to preserve the abdominal wall with in-situ repair, reduce recurrence by maintaining a stoma opening diameter of 2 to 3 cm with 3-dimensional fascial reinforcement, and reduce post-operative adhesions and infections with non-cross-linked porcine dermal matrix mesh.

METHODS: We retrospectively analyzed twenty-three patients who underwent a parastomal hernia repair between January 2009 and June 2017 by our two senior authors using the Silo technique. Patient data extracted included demographic information, body mass index (BMI), past medical and surgical history, inpatient data, adverse outcomes, and follow-up. Primary outcome parameters were hernia recurrence, wound-related issues, and postoperative surgical complications.

RESULTS: Twenty-three patients were identified: mean age was 65.5 years, 10 patients were male, 13 female, and average BMI was 30.4 kg/m². A concomitant ventral hernia was repaired in 13 patients and 12 patients had 2 or more previous parastomal hernia repairs. Ostomy type consisted of 13 (54.2 %) colostomies, 6 (25 %) ileostomies, and 5 (20.8 %) urostomies. The average surgery lasted 324 min, and the average length of hospital stay was 7.6 days. Post-operatively, 4 patients had surgical site infections, 1 patient developed a seroma, and 1 patient experienced a wound healing delay. Readmissions encompassed 8 patients, 4 of which were due to small bowel obstruction (SBO). These 4 cases all necessitated reoperation, in addition to 1 reoperation for stoma retraction, and 1 for wound closure. Three patients were noted to have parastomal hernia recurrence during our average follow-up of 16.9 months.

CONCLUSION: Based on our clinical outcomes, the Silo technique is associated with minimal complications and favorable recurrence rates and therefore represents a new and safe technique for complex parastomal hernias.


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Patient Reported Satisfaction and Quality of Life in Predominantly Minority Obese Patients: A Comparison Between Microsurgical and Prosthetic Implant Recipients