associated with a high rate of wound complications. The purpose of this study was to compare wound complications and perioperative outcomes between a perforator sparing (PS)-ACST and (TAR).

**METHODS:** From a prospective, tertiary hernia center database, patients who underwent open abdominal wall reconstruction with PS-ACST or TAR from 2016 to 2020 were identified. Patients undergoing concurrent panniculectomy were excluded. Outcomes included wound complications, need for reintervention, length of stay, and 30-day readmission. The Carolinas Equation for Determining Associated Risks application was used to predict wound complication rates. A univariate analysis was performed between the PS-ACST and TAR groups. Standard statistical methods and logistic regression were performed.

**RESULTS:** A total of 92 patients met criteria; 37 had PS-ACST and 55 had TAR performed. The PS-ACST and TAR groups were similar in terms of BMI (29.8 ± 8.9 versus 31.3 ± 6.3 kg/m², \(P = 0.23\)) and diabetes (16.2% versus 25.5%, \(P = 0.32\)), but the PS-ACST group had a greater history of smoking (51.4% versus 14.5%, \(P < 0.01\)). Both groups had five comorbidities on average (\(P = 1.00\)). Most hernias were recurrent (59.5% versus 61.8%, \(P = 0.83\)). CDC wound classes were equivalent. The Carolinas Equation for Determining Associated Risks predicted wound complication rates were: PS-ACS-56.9% (range: 14.2–92.9%) and TAR-39.7% (range: 7.3–92.2%). Preoperative botulinum toxin A was performed in 43.8% versus 19.1% of cases (\(P = 0.06\)). The PS-ACST group had a larger hernia defect size (374.9 ± 156.4 versus 223.7 ± 119.7 cm², \(P < 0.01\)) and increased intraoperative time (242.1 ± 63.8 versus 209.5 ± 71.0 min, \(P < 0.01\)). Despite the larger defect size, the mesh size was comparable (1096.0 ± 535.6 versus 944.4 ± 391.5, \(P = 0.71\)). Biologic mesh was more frequently utilized in PS-ACS patients (51.4% versus 27.3%, \(P = 0.03\)). All PS-ACST patients had a bilateral CST compared with 72.7% who received a TAR (\(P < 0.01\)). The fascial defect was fully closed in all but two cases (94.6% versus 100.0%, \(P = 0.16\)). Placement of an incisional vacuum-assisted closure device occurred more frequently in the PS-ACST group (32.4% versus 14.5%, \(P < 0.01\)). The overall wound complication rate was not significantly different (16.2% versus 20.0%, \(P = 0.79\)), neither was superficial dehiscence (5.7% versus 5.7%, \(P = 1.00\)), deep wound infection (5.7% versus 9.5%, \(P = 0.70\)), or seroma requiring reintervention (5.4% versus 5.5%, \(P = 0.99\)). There were no patients in the PS-ACST who required return to the operating room for wound-related issues (0.0% versus 9.6%, \(P = 0.08\)), and requirement for a percutaneous drain was uncommon (2.9% versus 7.7%, \(P = 0.64\)). Length of stay was one and a half days longer for PS-ACST patients (8.9 ± 5.4 versus 7.3 ± 4.0 days, \(P = 0.04\)), but 30-day readmissions were no different (5.4% versus 10.9%, \(P = 0.47\)). Using logistic regression, none of the factors that were significantly different in the univariate analysis correlated with wound complications (\(P > 0.05\)).

**CONCLUSIONS:** PS-ACST, despite being used for larger defects, had equivalent rates of wound complications and need for reintervention compared with patients undergoing TAR.

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**Safety and Effectiveness of Flap Reconstruction in Patients Receiving Intraoperative Radiation Therapy**

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**BACKGROUND:** Intraoperative radiation therapy is often used as an adjuvant treatment for locally advanced tumors. Reconstruction of defects after oncological resection is challenging. We present the largest cohort to date assessing the safety and effectiveness of flap reconstruction in these patients.

**METHODS:** A retrospective review of patients who underwent intraoperative radiation and simultaneous flap reconstruction for oncological reasons was done. Inclusion criterion was patients 18 years or older who underwent this procedure from January 2010 to January 2020 at our institution.

**RESULTS:** A total of 231 patients (122 men, 109 women) and 244 flaps were included. Mean age at surgery was 55.5 years (SD: 13.2); mean body mass index was 28.1 (SD 6.5). Patient comorbidities included active smoking (8.2%), diabetes (16.8%), and hypertension (41.4%).
Of all patients, 17.7% were on chronic anticoagulation, 94% had neoadjuvant radiation therapy, 3.4% had adjuvant radiation therapy, 80.2% had neoadjuvant chemotherapy, and 27.2% had adjuvant chemotherapy. Mean intraoperative radiation dose was 12.1 Gy (SD 2.3). Median hospital length-of-stay was 7 days (Q1–3: 5–13); median follow-up length was 16.4 months (Q1–3: 4.5–42.2). Primary tumor included colorectal (52.9%), reproductive system (15.6%), and extremity (17.2%). In total, 91.8% of patients had one flap reconstruction and 8.9% had two flaps. Flap types included omental flaps (n = 112), vertical rectus abdominis muscle flaps (n = 61), rotational or advancement flaps (n = 16), pedicled gracilis flaps (n = 8), pedicle gastrocnemius flaps (n = 9), and free flaps (n = 7).

Even though several perioperative complications were reported, 91.4% of reconstructions were successful. Various infectious problems accounted for a total of 60.6% of patients. Complications included abscess (26.6%), wound infection requiring debridement (22.5%), seroma (12.3%), necrosis (12.7%), cellulitis (11.5%), hematoma (7.4%), and full-thickness wound dehiscence (7.8%). Of all patients, 4.3% had intraoperative bleeding that required blood transfusion, 19% had postoperative bleeding, and 9% had thromboembolic events. Of all flaps, 27.2% required unplanned surgical re-intervention and 7.3% required postoperative hyperbaric oxygen therapy. When comparing extremity with abdominal flap reconstructions, extremity reconstructions were associated with higher odds of developing cellulitis (OR 1.4 (1.4–140.9), \( P = 0.003 \)). Multiple variables analysis showed that obesity was associated with an increased risk of developing wound infection that required debridement (OR 1.93 (1.02–3.64), \( P = 0.04 \)).

CONCLUSIONS: Flap reconstruction is safe and effective for coverage of oncological defects in patients receiving intraoperative radiotherapy. Postoperative antibiotics beyond the usual 24-hour period should be considered. Careful selection of patients is critical to achieve the best outcomes possible.

Prophylactic Lymphovenous Anastomosis Performed during Complete Lymphadenectomy Does Not Increase Risk of Distant Metastasis

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**BACKGROUND:** Lymphovenous bypass (LVB) is the preferred surgical treatment for extremity lymphedema after complete lymph node dissection (CLND). Prophylactic LVB is most frequently performed after CLND for malignancies including breast, gynecologic, and skin cancers. A serious concern with LVB is facilitation of cancer metastasis.

**PURPOSE:** The purpose of this study was to compare rates of distant-metastasis free survival (DMFS) and relapse-free survival (RFS) between patients who underwent LVB during CLND for grossly metastatic disease and patients who underwent CLND only. To our knowledge, this is the first prospective study to evaluate the impact of prophylactic LVB on DMFS and RFS in cancer.

**METHODS:** This is a prospective review of skin cancer patients who underwent axillary/inguinal CLND with or without LVB, between 2014 and 2020. To reduce inter-surgeon differences, all cases were performed by a single, high-volume surgeon at a tertiary hospital. Patients were excluded if they had non-melanoma cancers, stage IV disease before CLND, or follow-up time <180 days. Each LVB patient matched with a control patient based on follow-up times and cancer stage. Collected data include patient demographics, recurrence rate, immunotherapy status, and follow-up time.

**RESULTS:** A total of 79 patients were reviewed. Fifty-two patients had various skin cancers and underwent prophylactic LVB after CLND (LVB group). Among all LVB patients, 42 had melanomas, and among them, 27 met inclusion criteria. Likewise, 27 patients who underwent CLND only (control group) were also included in this study. The two groups were similar in age, sex, follow-up time, and total nodes removed during CLND. Follow-up times were on average 16.24 ± 6.92 and 18.14 ± 9.41 months for the LVB and control groups, respectively (\( P = 0.40 \)). Average number of lymph nodes removed during CLND were 16.41 ± 9.57 and 17.46 ± 15.43 in the LVB and control groups, respectively (\( P = 0.71 \)). The LVB group had larger metastatic tumors in lymph nodes at 36.05 ± 40.91 mm compared with the control group at 4.40 ± 7.22 mm (\( P = 0.0021 \)). The LVB group had lower rates of lymphedema at 41% compared with the control group at 85% (\( P = 0.0007 \)).

There were no differences in DMFS (\( P = 0.26 \)) and RFS (\( P = 0.21 \)) between the LVB and control groups based on Kaplan-Meier curves of survival outcomes within 1.5 years (547 days) of treatment. Melanoma recurrence rates were 48% in the LVB group and 37% in the control group.