Postoperative complications out to 30 days were classified as surgical, wound, or medical complications. Surgical complications were composed of unplanned return to the operating room and unplanned readmission. Patients were assigned to a category by their calculated BMI, including non-overweight (<25), overweight (25–29.9), class 1 (30–34.9), class 2 (35–39.9), and class 3 obesity (≥40). Patients missing height or weight data were excluded. Rates of complications were compared across patients of different BMI classifications. Demographics, concurrent comorbidities, and perioperative variables were compared between patients who did or did not experience a complication. Multivariable analyses were performed to assess the associations between BMI and complications following adjustment for baseline differences.

RESULTS: A total of 28,644 cases were included in the analysis. Of these cases, 1787 (6.2%) experienced one or more postoperative complications. As BMI increased, patients were more likely to experience surgical, wound, and medical complications \((P < 0.001)\). Aside from BMI, compared with patients who did not experience a postoperative complication, those who did were more likely to be older, have a higher American Society for Anesthesiologists Personal Status classification, be an inpatient, current smoker, have numerous medical comorbidities, and be undergoing a concurrent procedure \((P < 0.001)\). Following adjustment for these baseline differences, patients with class 1 \((OR = 1.40, P < 0.001)\), class 2 \((OR = 1.62, P < 0.001)\), or class 3 \((OR = 2.13, P < 0.001)\) obesity were more likely to develop at least one postoperative complication when compared with non-overweight patients. The odds of wound complications were particularly increased in patients who were overweight \((OR = 1.63, P = 0.001)\), or with class 1 \((OR = 2.53, P < 0.001)\), class 2 \((OR = 3.06, P < 0.001)\), or class 3 obesity \((OR = 4.17, P < 0.001)\).

CONCLUSIONS: Following adjustment for baseline differences between patients, a higher BMI was associated with an increased odds of postoperative complications following reduction mammoplasty in a dose-dependent manner. The relationship between BMI and complications was particularly strong for wound complications, including surgical site infection and dehiscence.

REFERENCES:
1. Finkelstein EA, Khavjou OA, Thompson H, et al. Obesity and severe obesity forecasts through 2030. Am J Prev Med. 2012;42(6):563–570.
2. Nelson JA, Fischer JP, Chung CU, et al. Obesity and early complications following reduction mammoplasty: an analysis of 4545 patients from the 2005–2011 NSQIP datasets. J Plast Surg Hand Surg. 2014;48(5):334–339.

Assessing the Necessity of Prolonged VTE Prophylaxis in DIEP Flap Patients: An Analysis of Our 10-year Institutional Experience

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PURPOSE: Based on the 2005 Caprini Risk Assessment Model for venous thromboembolism (VTE), the American Society of Plastic Surgeons published prevention guidelines in 2011 recommending 1 week of postoperative chemoprophylaxis for patients scoring between 3 and 6 and extended prophylaxis (up to 4 weeks) for patients scoring 7 or higher after a major procedure.1 This would result in prolonged prophylaxis (1 week or more) for the majority of patients undergoing deep inferior epigastric perforator (DIEP) flap breast reconstruction. In our experience, DIEP flap patients are generally healthy besides their breast cancer history and do not require the blanket application of prolonged prophylaxis. Instead, we favor an individualized analysis of VTE risk factors relative to the average DIEP flap patient, which has resulted in an overall limited use of chemoprophylaxis. The aim of this study was to describe our institutional experience in thromboembolism prevention and to assess the necessity of prolonged prophylaxis in DIEP flap patients.

METHODS: Patients who underwent DIEP flap reconstruction at a tertiary care center from August 2011 to March 2020 were included. Charts were retrospectively reviewed looking at patient characteristics, VTE prophylaxis regimens, and development of deep vein thrombosis (DVT) and pulmonary embolism within 60 days of surgery. Patients were considered positive for DVT or pulmonary embolism if diagnosed radiographically on ultrasound or CT scan, respectively. Caprini scores were calculated for all patients.

RESULTS: In total, 249 patients were included in this study, with an average follow-up of 542.0 days. An estimated 245 patients (98.4%) were considered average risk and received chemoprophylaxis with subcutaneous heparin only during hospitalization (average length of stay: 3.3
days). Four patients (1.6%), who either were deemed to be high risk for VTE or had an indication for anticoagulation (ie, significant flap thrombosis), were placed on subcutaneous enoxaparin that continued for at least 2 weeks after discharge. The cohort’s average Caprini score was 6.0 (range 2–10), with 72.7% of patients scoring between 3 and 6, and 26.5% scoring 7 or higher. One patient (0.4%), who scored a 7 and received prophylaxis only while hospitalized developed DVT postoperatively in the left femoral and popliteal veins. There were no cases of pulmonary embolism. There was no significant difference in VTE rate between patients who received chemoprophylaxis consistent with American Society of Plastic Surgeons guidelines (0%, n = 8) and those who did not (0.4%, n = 241) ($P = 0.856$).

CONCLUSIONS: Despite our limited use of chemoprophylaxis, our overall VTE incidence of 0.4% is low compared with other published rates in literature. Presenting the largest institutional cohort of DIEP flap patients in the analysis of postoperative VTE, this current work suggests that the blanket application of prolonged prophylaxis is not warranted. It further serves as impetus to re-evaluate the 2005 Caprini Risk Assessment Model in this subgroup of plastic surgery patients.

REFERENCE:
1. American Society of Plastic Surgeons. Evidence-based practices for thromboembolism prevention: A report from the ASPS venous thromboembolism task force. Available at: www.plasticsurgery.org. Accessed February 24, 2021.

Do Mastectomy Skin Complications Delay Adjuvant Therapy after Autologous Breast Reconstruction?

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INTRODUCTION: Autologous breast reconstruction (ABR) is an important treatment modality to minimize postmastectomy deformity and restore body image in patients with breast cancer. However, it remains unclear what effect complications after ABR have on initiation of adjuvant treatments. This is significant because delays in adjuvant therapy are associated with poorer oncologic outcomes. Here, we examined risk factors for developing mastectomy skin complications, and how incidence of these complications affected initiation of adjuvant therapy.

METHODS: A retrospective chart review was conducted of all patients undergoing ABR between 2007 and 2018. Patients were included if they underwent abdominally-based ABR and were treated with either adjuvant chemotherapy or radiation after mastectomy, and had at least 6 months of follow-up. Data were abstracted from the medical records, including demographics, oncologic information, operative details, mastectomy skin complications, and time to initiation of adjuvant therapy. Categorical and continuous variables were compared using $\chi^2$ and $t$-tests, respectively.

RESULTS: In total, 582 patients met inclusion criteria, of which 243 (42%) experienced a complication in their mastectomy skin flap. Patients who experienced a mastectomy skin complication had a significantly higher BMI than patients who did not (30.0 versus 27.2 kg/m$^2$; $P < 0.001$). Similarly, patients with diabetes or hypertension were significantly more likely to develop a mastectomy skin complication (both $P < 0.05$). Active smoking also significantly increased risk of mastectomy skin complications, with 13% of patients with complications admitting to nicotine use compared with 5.3% of patients who did not suffer a complication ($P = 0.001$). Neither mastectomy nor flap type predicted the incidence of mastectomy skin complication (both $P > 0.05$). Active smoking also significantly increased risk of mastectomy skin complications, with 13% of patients with complications admitting to nicotine use compared with 5.3% of patients who did not suffer a complication ($P = 0.001$). Neither mastectomy nor flap type predicted the incidence of mastectomy skin complication (both $P > 0.05$). Overall, patients began adjuvant chemotherapy and radiation on average 62 days and 121 days after reconstruction, respectively. Patients who experienced a mastectomy skin complication had significant delays in initiation of adjuvant radiation, on average beginning therapy 134 days after reconstruction compared with 113 days for patients without a mastectomy skin flap complication ($P = 0.004$). On the other hand, incidence of mastectomy skin complication did not significantly affect the initiation date of adjuvant chemotherapy ($P = 0.18$). When considering oncologic status, cancer stage and primary tumor stage significantly impacted the timing of initiation of adjuvant chemotherapy (both $P < 0.05$). Primary tumor stage also significantly impacted timing until initiation of adjuvant radiation ($P = 0.002$).

CONCLUSIONS: Mastectomy skin complications after autologous breast reconstruction cause significant delays in the initiation of adjuvant radiation, which can