distribution of clefts, choice of donor hip, or length of stay. Pain scores were significantly improved at the 4-, 12-, 16-, 20-, and 24-hour time points (p < 0.001, p = 0.010, p = 0.002, p = 0.006, and p = 0.009), with the 8-hour time point approaching significance (p = 0.064) in the liposomal bupivacaine group versus the bupivacaine group. Total narcotic consumption was reduced in the liposomal bupivacaine group at 4.65±5.26 oral morphine equivalents compared to the bupivacaine group at 14.29±11.97 (p = 0.002). Average steps on postoperative day 1, 2, 3, and 5 were significantly higher in the liposomal bupivacaine group (p <0.001, p <0.001, p <0.001, p = 0.032), with day 4 approaching significance (p = 0.056).

CONCLUSION: Liposomal bupivacaine reduces postoperative pain in children undergoing iliac crest bone graft harvest, and this is reflected in a reduction in narcotic use as well as an improvement in early activity.

145

Postsurgical Complications Associated with Tissue-Expander Placement into the Previously Irradiated Breast

Shanique Martin1, Lawrence Cai2, Adeyemi Ogunleye2, Rahim Nazerali2, Gordon Lee2, Gordon Lee2

1Stanford University School of Medicine, Palo Alto, CA, USA, 2Division of Plastic and Reconstructive Surgery, Stanford Hospital and Clinics, Palo Alto, CA, USA

PURPOSE: Breast-conservation therapy (BCT) consisting of lumpectomy followed by radiation therapy (XRT) is commonly used in the treatment of breast cancer, with high rates of success. However, a small percentage of these patients eventually develop recurrence of breast cancer necessitating a mastectomy. Previous radiation therapy is known to be a significant risk factor for surgical complications, but few studies have quantified the effect of XRT on breast reconstruction. We report our institution’s experience of breast cancer patients who initially underwent unilateral BCT, followed by bilateral mastectomy and immediate tissue-expander reconstruction.

METHODS: A retrospective review of all postmastectomy breast reconstructions performed at our institution over a 4 year period (2014–2018) was conducted. The initial search yielded 958 breast reconstruction patients, of which 90 had a history of BCT. Of these, 29 patients underwent unilateral BCT followed by bilateral mastectomy and reconstruction with immediate tissue-expander insertion.

RESULTS: Overall there were 58 breasts with mastectomies and immediate tissue-expander reconstruction. The time between completion of radiation therapy and mastectomy ranged from 1 year to 21 years, with a median of 5 years.

At the time of mastectomy, 26 breasts had cancer, 17 of which were recurrences in a previously irradiated breast. Skin sparing mastectomies were performed in 19 breasts, while nipple sparing mastectomies were performed on 38 breasts. A radical, non-skin sparing mastectomy was performed on 1 breast. There were 42 partial submuscular tissue-expander insertions and 8 each of prepectoral and total submuscular tissue-expander insertions.

The rate of postsurgical complications was greater in previously irradiated breasts (37.9 vs 13.5%). The most prevalent complication was surgical site infection, which occurred in 11 breasts (19%) and previously irradiated breasts had a higher rate of this complication (p=0.041). Instances of major infection, requiring salvage reoperation or explantation, were only observed in previously irradiated breasts (3 breasts, 10.3%). The quantity of salvage reoperations for any complication was greater in previously irradiated breasts (0.73 vs 0.25) and an analysis of all irradiated breasts demonstrated trends in associations between time since XRT, intraoperative tissue expander fill volume, days before surgical site drain removal and postsurgical complication.

CONCLUSIONS: Immediate placement of a tissue expander in a previously irradiated breast can be accomplished, though not without increases in both the quantity and severity of complications. These findings indicate the need for further investigation of the risks associated with tissue expander placement into a previously irradiated field.

146

Preoperative CTA Efficiently Facilitates Perforator Decision-Making in DIEP Flap Breast Reconstruction: a Blinded Prospective Study

Danielle O. Dumestre, MD FRCSC, Sumeet Teotia, MD, Avinash Jayaraman, BA, Austin Hembt, MD, Nicholas Haddock, MD
**UT Southwestern, Dallas, TX, USA**

**PURPOSE:** To compare operative times for specific portions of deep inferior epigastric perforator (DIEP) flap harvest as well as perforator selection in cases where preoperative CTA imaging had been reviewed by the harvesting surgeon preoperatively vs. not reviewed.

**METHODS:** This is a prospective pilot study of two patient groups undergoing breast reconstruction using DIEP flaps. We utilize a two-surgeon approach for all DIEP flaps and for the experimental group the harvesting surgeon was blinded to the results of the preoperative CTA, whereas in the control group the harvesting surgeon had assessed the CTA preoperatively. Patients were randomized to the blinded vs. non-blinded group based on surgical day. Operative times were recorded for initial perforator identification, perforator selection, and total flap harvest time and were compared between groups. The choices of perforators (medial, intermediate, or lateral) were also compared between groups. Within the blinded group, perforator selection by the blinded harvesting surgeon was compared to the pre-operative perforator selection by the non-blinded, non-harvesting surgeon based on CTA imaging.

**RESULTS:** From June-November, 2018, 13 DIEP flaps were performed where the surgeon was blinded to the preoperative CTA results, and 49 flaps were not blinded. The mean time to first perforator identification was longer in the blinded vs. the non-blinded group [29.2 minutes (SD=8.2) blinded group, 15.1 minutes (SD=6.7) non-blinded, p<0.0001]. Time to perforator decision-making was also longer in the blinded vs. the non-blinded group [25.3 minutes (SD=9.11) blinded, 5.75 minutes (SD=11.2) non-blinded, p<0.0001]. Mean total harvest time was significantly longer in the blinded vs. the non-blinded group [114.6 min (SD=32.5) blinded, 72.6 min (SD=23.7) non-blinded, p<0.0001]. Medial row perforators were used in 53.4% (7/13) of flaps in the blinded group, and 42.8% (21/49) of flaps in the non-blinded group, p=.479. Intermediate row perforators were used in 15.4% (2/13) of flaps in the blinded group, and 18.3% (9/49) of flaps in the non-blinded group, p=.802. Lateral row perforators were used in 61.5% (8/13) of flaps in the blinded group, and in 55.1% (27/49) of flaps in the non-blinded group, p=.677. Blinded intraoperative perforator selection correlated to the perforator selected on CTA by the non-blinded surgeon in 76.9% (10/13) of flaps. Significantly more perforators were included in the blinded flaps compared to the non-blinded flaps (average number of perforators included=2.23 blinded, 1.57 non-blinded, p=0.01).

**CONCLUSION:** Use of preoperative CTA leads to decreased operative times, specifically with regards to perforator identification and perforator selection. Without the use of preoperative CTA, surgeons included more perforators in the flaps.