METHODS: The TriNetX electronic health database was queried in October 2024 for patients who had undergone breast reduction. Patients were stratified by treatment with or without ketorolac. Patients were 1:1 propensity score matched based on age, demographics and comorbidities. Risk ratios and p-values were calculated for the primary outcome of hematoma rate at postoperative day 30.

RESULTS: In total 7,408 patients were propensity score matched in each group. Breast reduction patients who received ketorolac had a significantly higher rate of hematoma compared to those who did not receive ketorolac (1.39% vs. 0.72%, respectively, p<0.0001). Rate of hematoma/seroma evacuation was also significantly higher in those administered ketorolac (2.01% vs. 1.46%, p=0.01). No differences were found in seroma, transfusion, or hospitalization rates between groups.

CONCLUSION: Ketorolac administration intra- or postoperatively was associated with an increased risk of hematoma and hematoma/seroma evacuation in this cohort of breast reduction patients. Further research should evaluate the impact of ketorolac on other breast procedures to better characterize its effects.

48. SILICONE TAPING FOR THE IMPROVEMENT OF ABDOMINAL DONOR SITE SCARS FOLLOWING AUTOLOGOUS BREAST RECONSTRUCTION: A RANDOMIZED, PROSPECTIVE SELF-CONTROLLED TRIAL

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PURPOSE: Silicone-based products improve the appearance of abdominal scars after surgical procedures[1], but uptake is limited in resource-restricted environments due to device cost. Does standard silicone scar tape improve self-reported and surgeon-reported scar appearance in post-surgical abdominal scars?

METHODS: A prospective single-center single-blind randomized self-control clinical trial was performed on 41 sequentially recruited and consented DIEP autologous breast reconstruction patients. Using a split-scar methodology, silicone scar tape was applied to the randomized side of the abdominal scar 2 weeks post-operatively and worn 24 hours per day for three months. The Patient and Observer Scar Assessment Scale (POSAS) was completed at 6 weeks, 3-, 6-, and 12-months. Wilcoxon signed-rank tests were performed to detect statistical significance in patient and observer scar scores.

RESULTS: The primary outcome (Total Observer Score) by blinded surgeon-observers was clinically and statistically improved with silicone tape at 3 and 6 months post-operatively (p=0.0005, p=0.0025). Observer overall impression scores were significant at 6 weeks, 3 and 6 months (p=0.0496, p=0.0015, p=0.0067), indicating improved scar appearance with silicone tape.

CONCLUSION: This single-blind RCT supports the efficacy of affordable silicone taping to improve early scar appearance of post-surgical abdominal scars.

49. FLOW CYTOMETRIC ANALYSIS OF ADIPOSE-DERIVED STROMAL VASCULAR FRACTION HARVESTED USING TWO COMMON LIPOSUCTION CANNULA FROM DIFFERENT DONOR SITES IN AUTOLOGOUS FAT GRAFT SURGERY

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PURPOSE: Lipoaspirates, enriched in stromal vascular fraction (SVF) cells, demonstrated enhanced fat graft retention in autologous fat graft surgeries. Although several studies have evaluated the impact of different harvesting methods, cannula types, collection sites; an optimal approach remains debated. This study compared the Tonnard cannula, featuring 1mm elevated sharp microports, with the Sorensen cannula which has beveled microports, to assess their impact on SVF cell yield and viability across various donor sites.

METHODS: Lipoaspirates were harvested using suction-assisted liposuction from 12 healthy donors undergoing autologous fat graft surgery. The Tonnard cannula was employed on the right side, including the flank, inner thigh, and inner knee, while the Sorensen cannula was utilized on the left. Lipoaspirates were enzymatically digested, and the isolated SVFs were analyzed by flowcytometry to assess total cell yield, viability (Annexin V PI staining), reactive oxygen species (DCFH-DA staining), and stem cell CD marker expression (CD105, CD73, CD90, CD45, and CD11b).

RESULTS: The Tonnard cannula yielded significantly higher viable SVF cells and positive CD markers expression (P<.05) irrespective of the suction region. The flank area consistently provided the highest viable cell concentration with both cannulas.

CONCLUSION: Lipoaspirate extracted using the Tonnard cannula from the flank provided the highest viable cell count and stem cell CD marker expression. Future research will expand the CD marker, conduct gene expression analysis, and assess the functionality of the cells in vitro.

50. PROFILING BREAST IMPLANT RUPTURE: A SYSTEMATIC REVIEW AND META-ANALYSIS OF PATIENT, SURGICAL, AND DEVICE CHARACTERISTICS

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PURPOSE: Clinical trials and retrospective studies have examined breast rupture. This systematic review and meta-analysis provides a comprehensive synthesis of the evidence to assess patient, surgical, and implant characteristics associated with this complication.

METHODS: The PubMed, CINHAL, Scopus, and Cochrane Library databases were searched for relevant articles on October 26, 2024. This systematic review includes observational studies involving adult females who experienced implant rupture following breast augmentation or reconstruction. Results were synthesized using random-effects models to generate pooled risk ratios (RRs) with 95% confidence intervals.

RESULTS: This meta-analysis of 20 studies (15,811 implants) found that round implants were associated with a significantly higher rupture risk compared to anatomical implants (RR = 2.27 [1.04-4.94], p = 0.0387). Similarly, implants placed in the subpectoral plane had higher risk of rupture compared to those in the prepectoral plane (RR = 1.63 [1.22-218], p = 0.0007). No significant differences in rupture risk were found between saline and silicone implants, smooth and textured implants, or aesthetic versus reconstructive patients.

CONCLUSION: Implant shape and plane may affect the risk of breast implant rupture, with round implants and subpectoral placement being associated with higher rupture rates. These findings can inform clinical decision-making and surgical planning to minimize the risk of this complication.

51. PREDICTING CANCER-RELATED LYMPHEDEMA: A DECADE OF LONGITUDINAL OUTCOMES FROM A TERTIARY CANCER CENTER

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PURPOSE: No clinically applicable method currently exists to predict which patients will develop lymphedema after axillary lymph node dissection (ALND) or when it