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PURPOSE: Gender confirming surgery (GCS) improves quality of life and alleviates psychological distress in transgender and gender diverse individuals[1]. For a transgender female, breast augmentation with implants is a frequently sought-after procedure, as breast growth from hormone therapy alone is often inadequate[2]. Peri-operative complications such as infection, implant malposition, hematoma, and capsular contracture are well-described in the literature in treatment of hypomastia for cis-gender females, however their description in the transgender female community has been less elucidated and limited to case series. In this study, we performed a meta-analysis of the published literature to evaluate peri-operative complications following breast augmentation in transgender females to evaluate its safety and efficacy in relative to the similar procedure in cis-gender females.

METHOD: PubMed and the Cochrane Library and other resources were queried for studies published up to Jan 2022. The following keywords were used: ‘transgender’, ‘transfeminine’, ‘implant’, ‘augmentation’, ‘breast’, and ‘chest’. Primary outcomes of interest were complications (i.e capsular contracture, hematoma or seroma, infection, implant asymmetry/malposition, hemorrhage, skin or systemic complications), patient satisfaction, and reoperation rates. Quantitative analyses were performed with STATA 16 statistical software (STATA Corp., College Station, TX, USA). Rates were pooled with the -metaprop function and reported in 95% confidence intervals. Breast implant surgery complications were compared between cis-gender and trans-gender patients. A chi-square test was performed to analyze the incidence of complications between cis-gender vs trans-gender female breast augmentation.

RESULTS: A total 1864 patients from 14 studies were included for analysis in the transgender female group. Studies were conducted in various regions including the USA, Netherlands, Switzerland, and France. In the transgender female group, pooled rate of capsular contracture from 7 studies was 3.62% ((95% CI, 0.0038-0.0908); hematoma/seroma from nine studies was 0.63% ((95% CI: 0.0014-0.0134); infection incidence from eight studies was 0.08% (95% CI, 0.0000-0.0054); pooled rates of implant asymmetry/malposition from five studies was 4.51% (95% CI, 0.0089-0.1010). A comparison between cis-gender vs transgender females was performed via chi-square test by comparison of our pooled data with previously published data from cis-gender breast augmentation meta-analyses[3,4]. There was no statistical difference between rates of capsular contracture (p=0.41) and infection (p=0.71) between the two groups, while there were higher rates of hematoma/seroma (p=0.0095) and implant asymmetry/malposition (p=0.004) in the transgender female group.

CONCLUSION: Breast augmentation surgery has similar published rates of post-operative infection and capsular contracture between cisgender and transgender females but has higher rates of hematoma/seroma and malposition in the transgender group. This could be explained by contributing factors such as patient’s chest size, differences in musculature and soft tissue envelope, and native nipple-areola complex position. Relative to the published literature on cis-gender breast augmentation, there is a relative paucity, smaller sample size and inconsistent reporting in the transgender female group, which is a limitation of the study. Lack of reporting of complications relative to surgical approach (i.e subglandular vs submuscular implant positioning) is another limitation of the published literature in the transgender female group and an area of further study.

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TRACK: HAND AND UPPER EXTREMITY
Comparison of Intramedullary Screws, Plating, and K-Wires for Metacarpal Fracture Fixation: A Meta-analysis

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PURPOSE: Metacarpal fractures are common injuries with multiple options for fixation, including plating and screws, K-wires, and intramedullary screws. Our purpose was to compare outcomes, including DASH score, total active motion (TAM), grip strength, and rates of re-operation or infection, in metacarpal fractures treated with intramedullary screw fixation (IMF), K-wires, or plates/screws.

METHOD: A systematic literature review using the MEDLINE Database was performed for studies investigating metacarpal fractures treated with IMF, plates/screw, or K-wires. We identified nine studies using IMF, eight using plates/screws, and 17 using K-wires. A meta-analysis using random or fixed effects models was performed to calculate pooled effect size estimates, controlling for heterogeneity between studies. Outcome measures included mean DASH scores, mean TAM, mean grip strength (percentage to contralateral), mean time to radiographic healing, and the proportion of patients with infection and re-operation.

RESULTS: Patients with IMF of metacarpal fractures had significantly lower mean DASH scores at an average of 0.6 [95% CI: 0.2, 1.0] compared to both K-wire (7.4 [4.8, 9.9]) and plates/screws (9.8 [5.3, 14.3]) (both p<0.001). IMF also had significantly lower rates of reoperation at 4% [2%, 7%], compared to K-wires 11% [7%, 16%], p= 0.001 and plate/screw fixation at 11% [0.07, 0.17] p=0.01. Grip strength was significantly higher in IMF (104.4% [97.0, 111.8]) compared to K-wires (88.5%, [88.3, 88.7]) and plate/screws (90.3, [85.4, 95.2] (both p<0.001). There were no statistically significant differences in time to radiographic healing of evidence, mean TAM, or rates of infection. Mean OR time was similar between IMF (average of 21.0 minutes [10.4, 31.6]) and K-wires (20.8 minutes [14.0, 27.6]), but both were shorter compared to plate/screw fixation (average 52.6 minutes [33.1, 72.1]) with K wires being significantly shorter (p<0.001). Summary This meta-analysis compares outcomes of metacarpal fixation with IMF, K-wires, or plates/screws. IMF provided statistically significant lower DASH scores, higher grip strength, and lower rates of re-operation when compared to K-wires and plates/screws.

CONCLUSION: Intramedullary screw fixation of metacarpal fractures provides lower DASH scores, higher grip strength, and lower rates of re-operation when compared to K-wires and plates/screws.

Cyclic High Negative-pressure External Volume Expansion Reduces Daily Device Application Time with Similar Effects on Recipient Site Preparation in a Murine Model

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PURPOSE: Recipient site preparation using external volume expansion (EVE) increases graft survival in large-volume fat grafting. To improve patient compliance with using the device, we tested a new cyclic high negative-pressure (CHNP) mode that involves 1 h/day at -55 mmHg, cycled between 1-s negative-pressure activation, followed by a 2-s deactivation period in an animal model.

METHOD: A miniaturized EVE device was applied to thirty 8-week-old male Sprague-Dawley rats. The rats were assigned to three groups (no pressure for the control group, conventional -25 mmHg for 8 h/day for conventional EVE, and cyclic high negative-pressure for CHNP group). After 28 days, micro-computed tomography (CT) was performed, and skin biopsy specimens were obtained.

RESULTS: CHNP group showed a 6.6-fold increase in volume as compared to the control group, which showed a 4.4-fold increase compared to conventional EVE group. Hematoxylin and eosin staining showed a similar increase in subcutaneous tissue thickness in both EVE groups, compared to the control group. Masson's trichome and proliferating cell nuclear antigen staining showed significantly higher collagen deposition and subdermal adipocytes in EVE groups. Immunohistochemistry against platelet endothelial cell adhesion molecule 1 showed 2.5- and 2.7-times higher vessel density in the conventional and CHNP EVE groups, respectively. There was no statistically significant difference in subcutaneous tissue thickness, collagen...