Purpose: There is an unknown percentage of transgender and gender non-confirming individuals who undergo gender affirmation surgeries (GAS) that experiences regret. Regret could lead to physical and mental morbidity, also questioning the appropriateness of these procedures in selected patients. The aim of this study is to evaluate the prevalence of regret in transgender individuals who underwent GAS and evaluate associated factors.

Methods: A systematic review was conducted following the PRISMA guidelines. A comprehensive research strategy was performed including the following databases: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, and Daily, Ovid EMBASE, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus. Random-effects meta-analysis of proportions, subgroup analysis, meta-regression, publication bias, and sensitivity analyses were performed.

Results: A total of 27 studies, pooling 7,928 transgender patients that underwent any type of GAS were included in this review. The pooled prevalence of regret after GAS was 1% (95% Confidence interval [CI] <1-2%). Overall, 33% underwent transmasculine surgical procedures and 67% transfeminine procedures. The prevalence of regrets among patients undergoing transmasculine and transfeminine surgeries was <1% (IC<1-<1%) and 1% (CI<1-2%), respectively. A total of 77 patients regretted having had GAS. Of them, 28 had minor and 34 had major regrets based on Pfäfflin’s regret classification. The majority of these had “clear regret” based on Kuiper and Cohen Ketténis’ classification.

Conclusion: Based on this review, there is an extremely low prevalence of regret in transgender patients after GAS. We believe this study corroborates the improvements made in regard to selection criteria for GAS. However, there is high subjectivity in the assessment of regret and lack of standardized questionnaires, which highlight the importance of developing validated questionnaires in this population.

QS2

Aberrant Breast Adipose Stromal Cell Biology In Women At High Risk For Developing Breast Cancer

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Purpose: Our laboratory studies contributions of breast adipose stromal cells (bASCs) to breast cancer initiation and progression. To date, most studies of ASC biology have focused on abdominal ASCs. We hypothesize that bASC biology impacts the breast microenvironment in a manner that influences a woman’s risk of developing breast cancer.

Methods: In order to better understand how aberrant bASC biology contributes to breast cancer, we built a bASC cell repository from women undergoing mastectomies at Duke University Hospital (Duke IRB Pro00100739). Some of these women are at high risk for developing breast cancer.
High risk biology includes women with genetic predispositions to cancer, as well as obese and post-menopausal women. bASCs were isolated from the stromal vascular fraction of breast adipose tissue from patients. Additionally, commercially-available ASCs isolated from the abdomen were obtained from Zenbio. Senescence was measured in bASCs using the SPIder beta gal senescence detection kit (Dojingo). Senescence-associated cytokines were measured in conditioned media collected from these bASCs by ELISA (R&D Systems). The ability of bASCs to differentiate into adipocytes was measured using the Adipo-Red adipocyte differentiation assay (Lonza).

Results: To date, we have isolated bASCs from 16 patients undergoing mastectomies at Duke University Hospital. We have studied differences in the biology of these bASCs that may be associated with increased breast cancer risk. A commonality observed in high risk patients was senescence, demonstrated by bASCs undergoing growth arrest and secretion of beta-galactosidase. Similarly, bASCs from high risk patients demonstrated secretion of inflammatory cytokines such as Interleukin-6 (IL-6), Interleukin-8 (IL-8), and Interleukin-1bta (IL-1 beta) that are associated with the senescence-associated secretory phenotype. We hypothesize that the secretion by these bASCs of such cytokines creates an inflammatory breast microenvironment that increases breast cancer risk. Our data also indicate that bASCs from high risk patients exhibit a defect in their ability to differentiate into adipocytes.

Conclusion: Our studies are the first to report on a repository of breast ASCs (bASCs) from patients undergoing mastectomies. Results indicate that bASC biology differs significantly amongst patients, with a subset exhibiting a senescent secretory phenotype associated with a block in their ability to differentiate into adipocytes. We hypothesize bASC senescence, associated with a senescence secretory phenotype, results in: 1) the inability of these bASCs to differentiate into adipocytes, and 2) a senescence-associated secretory phenotype that impacts the breast tumor microenvironment. As we continue to build the repository, studies are in progress to test if inflammatory cytokines secreted by senescent bASCs work in a paracrine fashion on breast epithelium to drive breast cancer initiation/progression.

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Purpose: Top surgery (i.e. mastectomy) has been shown to improve gender dysphoria and quality of life in adult trans-masculine patients. However, even as an increasing number of adolescents and young adults present for gender-affirming surgery, the impact of top surgery on this population is not well described. Minor patients require parental consent and often face more stringent insurance restrictions. This prospective study aims to increase the body of evidence for gender-affirming top surgery in adolescents and young adults. We will measure the change in self-reported gender dysphoria, gender congruence, body image, and chest dysphoria.

Methods: This is a prospective, multi-institutional study. Transmasculine and non-binary, designated female at birth, patients between the age of 13-25 years presenting for top surgery consultation were recruited from: Northwestern Memorial Hospital, The University of Illinois at Chicago, or Ann & Robert H. Lurie Children’s Hospital of Chicago. Patients completed four patient-reported outcomes.