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**PURPOSE:** We aim to compare dynamic marital status and assess influencing factors related to this change among participants who receive the two most common gender specific cancer diagnoses—breast and prostate cancer. Factors that lead to the dissolution of marital status can be highlighted and addressed with the goal of implementing psychosocial support mechanisms for couples navigating cancer treatments and improving patients' quality of life.

**METHODS AND MATERIALS:** Anonymous Qualtrics surveys were administered to Workers via the Amazon Mturk Platform. Workers aged 18-99 who answered ‘yes’ to 3 screening questions were recruited to take the follow-up survey of interest. The follow-up survey included 3 safeguarding questions to reduce the number of incorrect responses. Demographics including gender identity of self and spouse, race, and marital status were gathered. If Workers indicated a change in marital status occurred following cancer diagnosis, the questionnaire continued with information regarding cancer staging, treatment modalities, qualitative assessments of shifting spousal dynamics, and mental health assessments via General Anxiety Disorder (GAD) and Personal Health Questionnaire Depression Scale (PHQ-8) questionnaires.

**RESULTS:** 249 out of 1032 indicated a diagnosis of breast or prostate cancer on the screening survey and 217 out of 227 completed the follow-up survey of interest. 91.4% of women were married at time of diagnosis compared to 84.0% of men (P=0.1854; alpha= 0.05). Women with breast cancer experienced a greater rate of dissolution in marital status following cancer diagnosis compared to men with prostate cancer (83.8% vs 55.8%, respectively. P=0.0465; alpha= 0.05). The qualitative factors listed to influence this change after diagnosis were: more open talks (mean=3.92, SD=0.91), becoming foreign to each other (mean=3.70, SD=0.98), and more conflict in relationship (mean=3.85, SD=0.89). PHQ-8 score indicated major depression for both groups (women mean score=14.0, SD=4.0; prostate mean score=13.7, SD=2.5). GAD-7 indicated moderate anxiety for both groups (women mean score=12.3, SD=3.8; prostate mean score=11.9, SD=2.6).

**CONCLUSION:** There is a discrepancy in the rate of marital dissolution following a diagnosis of cancer in these gender specific common cancers with more women experiencing divorce after breast cancer diagnosis than their male counterparts. Factors that contributed to this change were reported as above. More proactive focus should be given to these social determinants to optimize mental health support of couples navigating breast cancer treatments and implement rigorous psychosocial screening measures to promptly intervene before irreparable strain and ultimate marital dissolution occurs. This study supports routine, active and pre-emptive involvement of a mental health provider during the active and recovery phase of breast cancer treatment.

**TRACK: CRANIOMAXILLOFACIAL/HEAD AND NECK**

**What CT Findings Are Predictive of Post-traumatic Enophthalmos in Orbital Fractures?**

**Presenter:** Marina Lentskevich

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**BACKGROUND:** Surgical indications for orbital fracture repair include entrapment, diplopia, and enophthalmos. However, periorbital edema on initial work-up can be an impediment to evaluation of true enophthalmos. Predicting late enophthalmos is a clinical challenge, and objective guidelines to direct surgical management remain ambiguous. We systematically reviewed the existing data on using CT findings to establish objective metrics to predict enophthalmos during initial trauma work-up.

**METHODS:** We used PubMed as a primary search engine to identify articles addressing orbital fractures and enophthalmos. Inclusion criteria were English-language prospective and retrospective studies that utilized CT findings to predict enophthalmos in asymptomatic patients. Case reports, book chapters, commentaries, and letters to the editor were excluded. The Quality in Prognosis Studies (QUIPS) tool was used to assess articles’ quality. 2 PRISMA guidelines were followed. A random effects model meta-analysis of orbital volume change was completed. A regression analysis of data from 8 orbital volume change studies was performed to determine a pooled threshold for 2mm of enophthalmos.
RESULTS: Initial search delivered 817 abstracts. 70 articles were selected for full-text review. Of these, 34 met inclusion criteria. 29 retrospective studies evaluated a total of 2816 patients and 5 prospective studies evaluated 186 patients. Six domains of each article were assessed for potential risk of bias: study participation, study attrition, prognostic factor management, outcome measurement, study confounding, and statistical analysis and reporting. All 34 studies were good quality with predominantly low risk of bias in all domains. Predictors of enophthalmos assessed were orbital volume change (20 papers), fracture size (12 papers), inferior rectus muscle (IRM) displacements (5 papers), fracture site (4 papers), novel measurements on two-dimensional CT scans (2 papers), and orbital fat displacement (1 paper). With regards to figures predictive of enophthalmos, orbital volume change studies offered values ranging from 0.34 to 4.26 cm³, and four out of these 20 papers also offered orbital volume ratios of 105.0% to 112.3%. Fracture size predictor values ranged from 1.50 to 3.38 cm². Displacement of IRM and its height-to-width ratio ≥ 1.0 served as predictors in three and two studies, respectively. Inferior (2 papers), medial (1 paper) and medial-inferior (1 paper) orbital fractures showed highest correlation with enophthalmos. Meta analysis showed an effect size of 1.5 cm³ of orbital volume change to predict enophthalmos (p<0.001, CI 0.952-2.067). Regression of 224 data points from 8 studies revealed that 3.33 cm³ of orbital volume increase was a predictor of 2mm enophthalmos. Egger regression (p=0.095) and funnel plot revealed low risk of publication bias.

CONCLUSION: Orbital volume changes on CT, fracture size and site, and inferior rectus position/shape all have predictive value for late enophthalmos after orbital fracture.

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TRACK: SURGICAL PEARLS
Targeted NAC Reinnervation (TNR) with Nerve Fascicle Split in Implant Based Breast Reconstruction

Presenter: Lisa Gfrerer, MD, PhD
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BACKGROUND: Breast neurotization after implant-based reconstruction has been shown to result in similar pre- and postoperative breast and NAC sensation in 67% of patients (1). Apart from sensory recovery, breast reinnervation has great potential to avoid chronic post-mastectomy pain known as ‘post-mastectomy pain syndrome’ (PMPS), which has been shown to occur in 25-60% of women after mastectomy (2). Despite promising pilot study results, widespread adoption of neurotization of immediate implant-based reconstructions has not occurred. For surgeons interested in adopting breast reinnervation techniques, we present ways to overcome initial barriers by decreasing operative time and maximizing chances of sensory recovery utilizing Targeted NAC Reinnervation (TNR) with nerve fascicle split.

METHODS: TNR differs from previously described reinnervation techniques in several aspects: 1) the donor axon count is maximized by preserving the 3rd to 5th lateral cutaneous nerves for anastomosis to the NAC 2) the reinnervation approach varies and is based on patient anatomy 3) the distal graft or donor nerve is split into fascicles to increase the reinnervation zone and 4) the split fascicles are coapted to dermal sensory units if free nerve endings are not available.

RESULTS: Our initial sensory recovery results are promising with positive Tinel sign in all neurotized breasts at five months postoperatively. Detailed preoperative and postoperative Semmes Weinstein Filament sensory exam data will be available for PSTM 2022.

CONCLUSION: Breast reinnervation following mastectomy and implant-based breast reconstruction is a new