transplant-eligible, and in some cases, may lead to weight loss that is sufficient to reverse end-stage organ disease. OBJECTIVES/GOALS: As obesity prevalence grows, more end-stage organ disease patients will be precluded from transplant. Numerous reports suggest bariatric surgery in end-stage organ disease may help patients achieve weight loss sufficient for transplant listing, though the published data are limited. METHODS/STUDY POPULATION: We performed a systematic review/meta-analysis of studies of bariatric surgery to achieve solid organ transplant listing. RESULTS/ANTICIPATED RESULTS: Among 82 heart failure patients, 40.2% lost sufficient weight for listing, 29.3% were transplanted, and 8.5% had sufficient improvement with weight loss they no longer required transplantation. Among 28 end-stage lung disease patients, 28.6% lost sufficient weight for listing, 7.1% were transplanted, and 14.3% had sufficient improvement following weight loss they no longer required transplant. Among 41 cirrhosis patients, 58.5% lost sufficient weight for listing, 41.5% were transplanted, and 21.9% had sufficient improvement following weight loss they no longer required transplant. Among 288 end-stage/chronic kidney disease patients, 50.3% lost sufficient weight for listing and 29.5% were transplanted. DISCUSSION/SIGNIFICANCE OF FINDINGS: Small sample size and publication bias are limitations; however, bariatric surgery may benefit select end-stage organ disease patients with obesity that precludes transplant candidacy.

72957

Rethinking reconstructive strategies for complex cranial defects: A 10 year review of cranioplasty outcomes

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ABSTRACT IMPACT: Up to 33% of patients of patients who undergo reconstruction have hostile defects with coexisting soft tissue and osseous defects due to prior radiation, prior failed cranioplasty or concurrent infections we seek to identify optimal strategies for these patients based on the experience of a southeastern tertiary referral center. OBJECTIVES/GOALS: Scalp and calvarial defects in patients may result from a number of etiologies including trauma, burns, tumor resections, infections, osteoradionecrosis, or congenital lesions. Our objective was to retrospectively evaluate the use of alloplastic reconstruction alongside autologous reconstruction for high risk cranial defects. METHODS/STUDY POPULATION: An IRB approved retrospective review of patients who underwent cranioplasty of a hostile site at a Southeastern tertiary referal center between January 2008 and December 2018 was performed. The patients were stratified into three groups based on the type of implant used: autogenous (bone), alloplastic (PEEK, Titanium, PMMA), or mixed (combination of both types of graft). The primary outcome metric was a complication in the year following cranioplasty, identified by flap or bone graft failure, necrosis, or infection. Statistical analysis included t-tests and chi-square tests where appropriate using SPSS. RESULTS/ANTICIPATED RESULTS: There were 43 total cases in this time period; 15 autogenous, 23 alloplastic, and 5 mixed. The purely autogenous group had the highest complication rate (85%) and the alloplastic group had the lowest complication rate (38%). When stratified by specific material used for reconstruction (15 bone, 14 PEEK, 10 titanium, and 5 PMMA), overall complication rate was statistically significant (p=0.009; chi square test) with PEEK implants having the lowest complication rate (21%). The analysis documented an overall complication rate that was statistically different between the three groups (p=0.012). DISCUSSION/SIGNIFICANCE OF FINDINGS: This analysis interestingly found that in the setting of hostile cranial defects, cranioplasties would benefit from the use of prosthetic implants instead of autologous bone grafts, not only for avoidance of donor site morbidity but also for decrease in overall complications.

Health Equity & Community Engagement

Clinical Epidemiology

18722

Association between neighborhood overcrowdedness, multigenerational households, and COVID-19 in New York City

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ABSTRACT IMPACT: Patients living in overcrowded zip codes were at increased risk of contracting severe COVID-19 after controlling for confounding disease and socioeconomic factors OBJECTIVES/GOALS: This study sought to examine whether residences in over-crowded zip codes with higher reported over-crowding represented an independent risk factor for severe COVID-19 infection, defined by presentation to an emergency department. METHODS/STUDY POPULATION: In this zip code tabulated area (ZCTA)-level analysis, we used NYC Department of Health disease surveillance data in March 2020 merged with data from the CDC and ACS to model suspected COVID-19 case rates by zip code over-crowdedness (households with greater than 1 occupant per room, in quartiles). We defined suspected COVID-19 cases as emergency department reported cases of pneumonia and influenza-like illness. Our final model employed a multivariate Poisson regression models with controls for known COVID-19 clinical (prevalence of obesity, coronary artery disease, and smoking) and related socioeconomic risk factors (percentage below federal poverty line, median income by zip-code, percentage White, and proportion of multigenerational households) after accounting for multicollinearity. RESULTS/ANTICIPATED RESULTS: Our analysis examined 39,923 suspected COVID-19 cases across 173 ZCTAs in NYC between March 1 and March 30 2020. We found that, after adjusted analysis, for every quartile increase in defined over-crowdedness, case rates increased by 32.8% (95% CI: 22.7%% to 34.0%, $P < 0.001$). DISCUSSION/SIGNIFICANCE OF FINDINGS: Over-crowdedness by zip code may be an independent risk factor for severe COVID-19. Social distancing measures such as school closures that increase house-bound populations may inadvertently worsen the risk of COVID-19 contraction in this setting.

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